

Assessing Sexual Harassment Policy Communication and Impact at Sea

White Paper form of J. Winters's Oregon State University Master of Science Project

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ACKNOWLEDGEMENT, INCLUSION, AND ETHICS STATEMENT: The authors express gratitude for all who participated in or consulted on the research. We appreciate your candor, bravery, and thoughtful guidance in this unfunded and therefore modest research project. This research was performed as a collaboration between ocean and social sciences to identify successes and areas for improvement in the current sexual harassment policy (Title IX and others) communication process, drawing from extant literature and built for and within the oceanographic research community. This research was approved by the Oregon State University Institutional Review Board and all members of the research team received Human Subjects certification through their disciplinary homes. Data is fully anonymized, and this work was vetted through J. Winters's Master of Science thesis defense for the Marine Resource Management graduate program at Oregon State University. We also thank three reviewers– one scientist from outside the field, a seagoing oceanographer, and a representative from marine operations/management– for providing their feedback and comments on this white paper.

1 Introduction

Field research is a particularly precarious work setting in which gendered harassment is perpetrated (Clancy et al., 2014). Ocean scientists rely on research vessels to access the field, and the marine sector has its own risks associated with it. Research has found that women experience sexual harassment while working at sea on cargo ships (Thomas, 2006; Pike et al., 2021), as cadets at the U.S. Merchant Mariner Academy (United States Merchant Marine Academy, 2015), and in other positions while working at sea (Women in Ocean Science C.I.C., 2021; Österman and Boström, 2022). Research vessels– a field site at sea– merge the associated risks of the marine sector and field research.

Multiple institutions own or operate research vessels, including state and federal agencies, universities and research institutes, and private foundations. In addition, any vessel, such as a commercial fishing vessel, may become a research vessel temporarily by being contracted for this purpose. This white paper is intended to better understand communication, training, implementation, and the experience of policies within the U.S. Academic Research Fleet (U.S. ARF), including Title IX and institution-specific harassment policies. The results presented here stem from a mixed methods study conducted in 2019-2021 that combined a survey of scientists

and ship personnel who work onboard U.S. ARF vessels with semi-structured interviews of sexual harassment policymakers and those responsible for implementation of sexual harassment policy in the ocean sciences. We identify themes that have implications for the design and implementation of harassment policies at sea and provide the results of this study for the community within this white paper.

The U.S. ARF is comprised of federally-owned vessels that are operated by academic institutions and consortiums. Formed in 1972, the University National Oceanographic Laboratory System (UNOLS) is an organization of academic institutions and national laboratories, which includes U.S. ARF operating institutions, that seeks 1) to coordinate access to oceanographic research facilities including scheduling of ships within the U.S. ARF, 2) to review the current match of facilities to the needs of academic oceanographic programs, and 3) to foster support for academic oceanography (UNOLS Charter, adopted in December 2021). UNOLS does not have a mandate to create or enforce policies; however, UNOLS can influence an institution's policy by providing an organizing structure to address community concerns. For example, the Maintaining an Environment of Respect Aboard Ships (MERAS) Committee aims to foster an environment of respect and cultivate an inclusive culture within the U.S. ARF by providing recommendations to the UNOLS community of vessel operators and users. MERAS was established in 2017 as a transition of the Pregnancy, Privacy, and Harassment Committee that first formed in 2015.

2 Study Context and Rationale

The Problem: Sexual harassment is an acknowledged problem that is both gendered (National Academies of Sciences, Engineering, and Medicine, 2018; Wood et al., 2017) and racialized (Clancy et al., 2017) within academia and research sciences. According to the "Survey of Academic Field Experiences (SAFE): Trainees Report Harassment and Assault" (Clancy et al., 2014) women experience verbal sexual harassment almost twice as often as men and experienced sexual assault over four times as often as men. And, other research has shown that women of color who report sexual harassment also report racial discrimination when making complaints to the Equal Employment Opportunity Commission (EEOC; Raver and Nishii, 2010). Witnessed or experienced harassment continues to go underreported; only a fraction of people who had experienced sexual harassment or assault make a report. This is consistent with an EEOC review of reporting research, which found studies citing that between 87% - 94% of people do not file formal complaints (Feldblum and Lipnic, 2016).

The motivating study for this research was the SAFE Survey (Clancy et al. 2014). The Clancy et al. (2014) study reported that a high percentage of participants in academic field research experienced sexual harassment (70% of the women, 40% of the men; 65% combined), and low awareness of sexual harassment policies (22.2% of participants) or codes of conduct (37.7% of participants). Like the present study, participants in the Clancy et al. (2014) study were employed in an inter-institutional field setting in remote location with a hierarchical work structure and limited access to outside support systems, such as University resources.

The Place and People: Projects supported by the U.S. ARF are frequently carried out by inter-institutional groups that may be international. Individuals have a range of designations, including employees of either the vessel operator or other academic institutions, contractors, undergraduate and graduate students, and volunteers. While at sea, personnel are removed from their home support systems while working in a remote, isolated, and confined environment

with limited communication outside the ship. The operational and academic systems are both characterized by stark power differentials. However, research vessels also have attributes that are unique from other types of field research such as the dual hierarchy of crew and scientists, the different cultures of those two groups (Bernard, 2017), and the long-standing recommended practice to communicate sexual harassment policies prior to oceanographic cruises on vessels within the U.S. ARF. This recommendation was first codified in the Research Vessel Safety Standards (RVSS) in 2009. In contrast, the Clancy et al. (2014) study reported that many field sites did not have any kind of sexual harassment policy communication.

Policy and History: Title IX provides the encompassing federal regulation in the succinct requirement that “No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance.” The Research Vessel Safety Standards (RVSS) state that each vessel must conduct harassment prevention training for all members of the science party at the beginning of a research cruise, and crew members must complete annual training (Research Vessel Safety Standards Edition 10, 2015). Additionally, Appendix E of the RVSS Edition 10 defines sexual harassment as well as other kinds of harassment of protected classes. It discusses unique features of work aboard a research vessel including lack of privacy, close quarters, and describes a feeling of intensity of social interactions that results from these conditions. It also identifies loneliness, over-tiredness, and homesickness as causes for heightened “sexual awareness.” In the event of sexual harassment, Appendix E recommends that the victim speak up, tell someone, keep records, and to seek advice. It encourages at-sea personnel to discuss sexual harassment with the Chief Scientist or immediate supervisor, the captain, the chief mate, or the marine superintendent (MERAS Annual Meeting Notes, 2017). Edition 11 of the RVSS, released in November 2021, is similar to edition 10 with regard to sexual harassment (Research Vessel Safety Standards Edition 11, 2021).

In addition to the guidance offered by the RVSS, UNOLS has relied on a few ad-hoc sub-committees to address gender equity at sea. In 2006, the Research Vessel Operators Committee (RVOC) meeting included a presentation summarizing a survey of MIT students at Woods Hole Oceanographic Institution, a UNOLS-member (<https://www.unols.org/document/2006-rvoc-annual-meeting-minutes>). Sixty students responded to the survey. Fifty percent reported “inappropriate gender or sex-related behavior” while at sea, and 20% reported instances of unwanted sexual advances (<https://www.unols.org/sites/default/files/200604rvoap19.pdf>). Later a sub-committee called “Gender Climate at Sea” was formed (meeting notes starting in 2010 available on [unols.org](http://www.unols.org)). The 2006 Gender at Sea sub-committee was followed by a 2015 committee focused on Medical Questions / Medical History Forms / Pregnancy at Sea. In 2017, these efforts were consolidated within the Maintaining an Environment of Respect Aboard Ships (MERAS) sub-committee. According to meeting notes, the formation of the MERAS committee was motivated by the study “Women in Oceanography: Continuing Challenges” (Orcutt and Cetinić, 2014) as well as comments and e-mails from the community about these issues.

The Gender Climate at Sea sub-committee was the first UNOLS body to evaluate sexual harassment trainings for the U.S. ARF. It ran a pilot program, organized by Workplace Answers, for 100 participants but concluded that this training was boiler plate, too long to show prior to a cruise while mobilizing, and did not address the unique environment of research vessels. In 2013 UNOLS funded a training video through Marine Training Services aboard the R/V Thomas G. Thompson. This training video was used on myriad vessels until November 2019 when UNOLS released a three-module training system, “Shipboard Civility”, which was made with the support

of the MERAS sub-committee (MERAS Annual Meeting Notes, 2017) with sponsorship from multiple federal agencies. This module set is the current standard of policy communication and is required viewing prior to cruises organized through UNOLS (email communication from UNOLS technical services manager). It is unknown how strictly this guideline is followed.

3 Methodology

The aim of this study was to understand the relationship between sexual harassment policy intention, implementation, and the experience of people participating in research cruises on ships within the U.S. ARF. The three broad research questions were: (1) What are the overarching policies and in what ways have they evolved? (2) In what ways are these policies communicated, implemented, and enforced? and (3) What are the experiences of those who operate under these policies?

These questions were approached through a mix of social science methods executed in the three parts. The first part involved gathering background, related literature, and changes in Title IX policies at major oceanographic institutions since the inception of Title IX. This stage also included an informal review of training materials and websites of research cruises. Lastly, we gathered literature on sexual harassment reporting and non-reporting, particularly in “in the field” experiences, building from Clancy et al. (2014) study.

The second part involved conducting semi-structured interviews (Auerbach and Silverstein, 2003; Berg, 2001; Bernard, 2017) with individuals in oceanographic institutions with the responsibility of creating or implementing sexual harassment policies at sea. Interview participants were recruited via email, and the interviews were conducted in 2020. Fourteen people participated (four women, ten men); four participants were familiar with sexual harassment policies at a federal funding agency, five were UNOLS committee members, and five were marine superintendents. Although attempted, we were unsuccessful in our efforts to recruit legal experts who specialize in Title IX policy in a university setting.

This background work informed part three, the development of a field-wide survey on sexual harassment policy communication and experience of those operating under the policies. The survey questionnaire was built for participants in research cruises coordinated through UNOLS. An initial draft questionnaire was built as a hybrid of questions taken directly from three sources: (1) “Still Second Class” (Rosenthal et al., 2016) with questions modified for sea-going oceanographic community; (2) “SAFE: Survey of Academic Field experiences” (Clancy et al., 2014); and, (3) the unpublished study administered in 2006 by WHOI graduate students “Department of Defense Sexual Experiences Questionnaire” (DOD-SEQ). The draft questionnaire was then adapted to the U.S. ARF community and to the research questions of the current study (see appendix).

Survey participants were recruited through emails to the UNOLS representatives at each member institution and through social media. Study participants self-selected to participate in the survey. Exclusion criteria included those who 1) did not consent to participate in the research, 2) were under 18 years old, and 3) had not participated in a research cruise onboard a vessel of the U.S. ARF. All questions were voluntary except consenting to the research, being over the age of 18, and whether they had participated in a UNOLS-member research cruise. Submissions were also excluded if they only reported demographic information without addressing any questions dealing with policy communication and experiences at sea. Because questions were voluntary, the overall number of responses vary by question. Response number is therefore

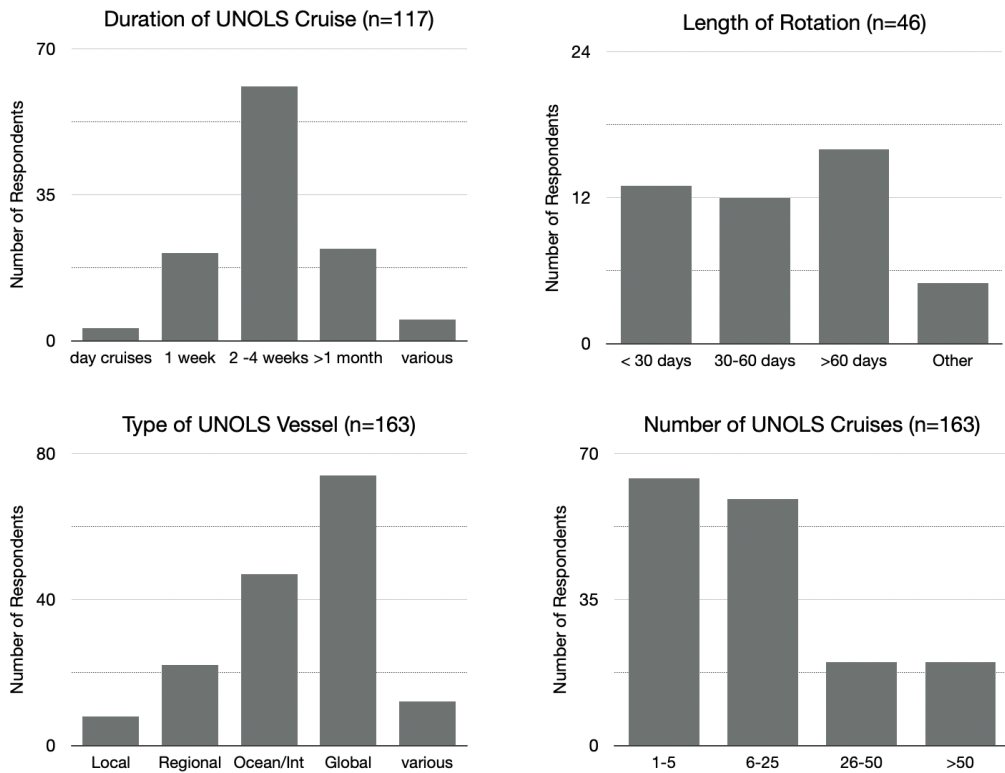


Fig. 1 – Responses to the questions: When you participate in oceanographic cruises, what is the typical cruise duration? (Science party or other), What is the length of your typical rotation or hitch? (Ship personnel only), When you participate in oceanographic cruises, what is the typical vessel class? (all), Approximately how many oceanographic cruises have you participated in on UNOLS-member research vessels? (all).

reported independently for each question.

A total of 168 respondents met the above requirements. The majority (60%) of study respondents (n=168) were research personnel. Ship personnel comprised 29% of respondents, and the residual 11% of respondents were categorized as other (volunteers, industry, unidentified roles). Research personnel respondents can further be classified as 28% students, 13% postdoctoral researchers, 39% non-tenured faculty, researchers, and engineers, and 20% tenured faculty. Ship personnel respondents were further classified as 65% marine technicians, 21% officer crew, and 15% non-officer crew. While marine technicians can sometimes be employed and operate within a separate track than other ship personnel, we group this set with ship personnel since their time at sea typically spans over multiple research cruises. Additionally, 31% of all respondents identified as 'male' while 69% identified as 'female or nonbinary' (n=132 responses). The majority (83%) of respondents identified as White/Caucasian with only 17% identifying as any other race (n=142 responses). Respondents reported having participated in research cruises on various types of ships as well as the number, length, and duration of cruise experiences; shown in Fig. 1.

We note that demographics represented by survey respondents is not representative of the composition in the field in several ways. For example, the majority of ship personnel will typically be non-officer crew on any given cruise, yet this category has our lowest response rate. While we were unable to find demographic information about ship's personnel, informal obser-

vation suggest a majority of a ship's crew identify as male. Orcutt and Cetinić (2014) reported that from the year 2000 – 2014, the number of women chief scientists has doubled from 15% to 30%. The percentage of women within the science party likely varies as a function of discipline and mission (e.g., a biological oceanography cruise may have more female representation than a mooring deployment cruise). This statement is also based on informal observation due to our inability to locate published demographic data.

4 Results

Three broad themes emerged from the data gathered in this mixed methods study: (1) The Uniqueness of the Environment; (2) Positive Changes in Policy, Communication, Technology, and Demographics; and (3) High Policy Familiarity Has Yet to Translate into Higher Reporting. Each theme is presented below, with summaries from the quantitative and representative quotes (in italics) from the qualitative data. The data presented here is a data archive of the study results, and therefore we provide more quotations than typically found within peer-reviewed literature. The presentation of quotations includes ellipsis in order to denote skipped parts of the dialog that are not relevant to the theme presented below.

4.1 The Uniqueness of the Environment

Research results indicated that ocean research vessels provide an environment that is conducive to sexual harassment and engenders harmful conditions that promote harassment different from land-based work. The environment is remote, isolated, and confined. In most cases, particularly between research and ship personnel, relationships are new, temporary, and siloed. The ship operational and academic systems are characterized by stark power differentials. This is all exacerbated by the fact that personnel are removed from home support systems with limited communication outside the ship.

4.1.1 Quantitative Summary

Results related to experiencing or witnessing gendered harassment are presented in Figure 2. Roughly the same percentage, 67% and 64% of males and females/nonbinary respondents, respectively, reported witnessing verbal harassment. Roughly 20% of females/nonbinary respondents witnessed physical harassment, whereas only 10% of male respondents witnessed physical harassment. Of the 67 respondents who experienced verbal harassment, 18% were male, 73% were female/nonbinary, and 9% did not identify their gender. Of the 21 respondents who experienced physical harassment 14% were male, 76% were female/nonbinary, and 10% did not identify their gender.

Approximately 80 respondents (exact number varied by question as per totals indicated below) proceeded to answer detailed questions about a particular incident of harassment either experienced or witnessed. Almost half of the reported incidents of harassment were perpetrated on students (48% of 85 respondents). No harassment of tenured faculty was reported. All other ranks were reported as having been harassed. All ranks were reported as having been perpetrators of harassment (total of 77 respondents) with very low reported incidences for students and postdocs (collective total of 3 out of 77). These results may reflect the stark power imbalance within academia and the ship environment.

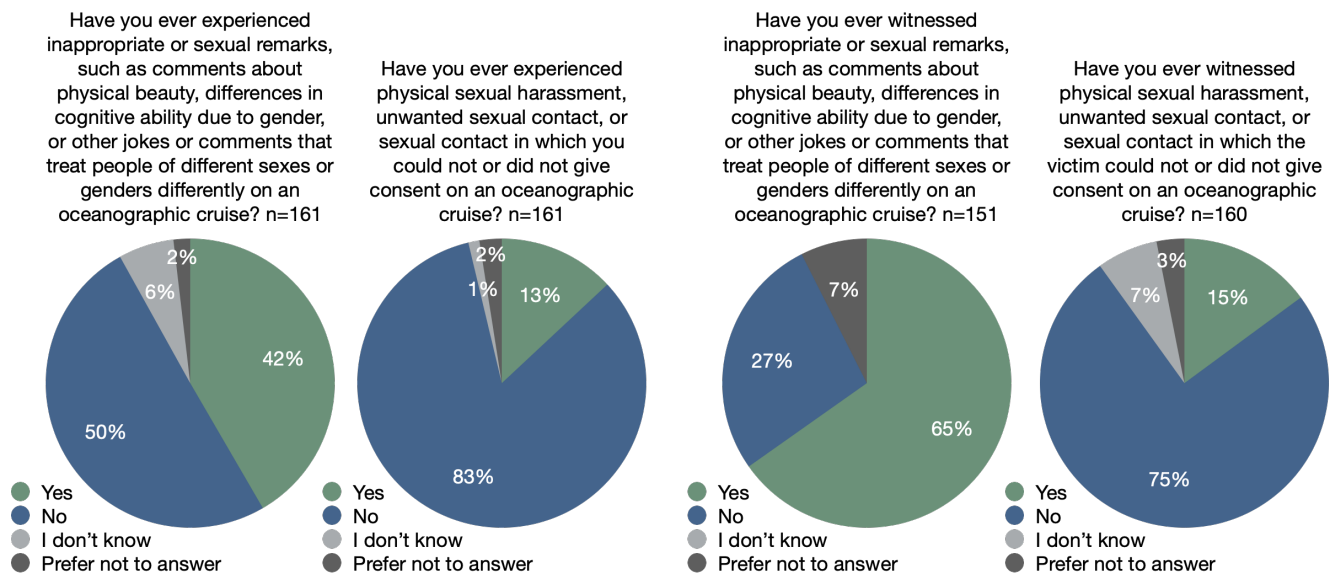


Fig. 2 – Responses to the questions on experiencing (left two plots) or witnessing (right two plots) gendered harassment. Questions are further delineated by physical or verbal harassment.

Results regarding the environmental details related to the incidents of witnessing or experiencing sexual harassment are reported in Figure 3. The distribution of the years since an incident was either experienced or witnessed was roughly uniform with reported incidents ranging from more than 10 years ago to days prior to completing the survey. It should be noted that the survey asked respondents consider a particular harassment incident without indication of time frame. This result cannot be used as an indication of temporal evolution, but instead characterizes the incidents that were reported within the survey. Most reported incidents occurred on larger ships with longer cruise duration; however, these ships also carry the greatest number of individuals. Likewise, very few individuals reported on incidents occurring on short cruises, particularly those characterized as day cruises.

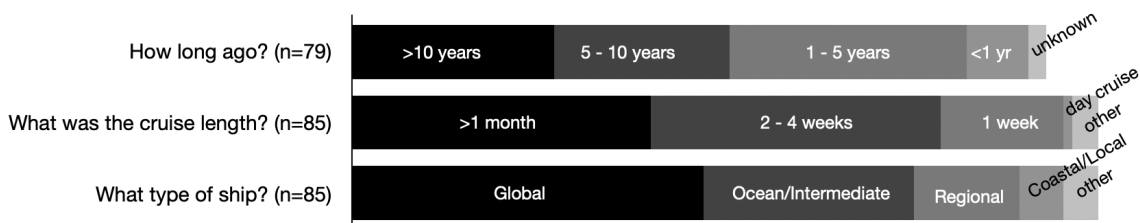


Fig. 3 – Environmental details about the incidents of harassment witnessed or experienced.

4.1.2 Qualitative Summary

While nearly all participants in the semi-structured interviews talked about the stressors inherent in research vessel-based work — such as cramped space, lack of privacy, long working hours, and being stuck together in an environment that one cannot readily leave — paradoxically multiple

participants discussed isolation as an almost obvious and known factor in sexual violence at sea. For participants, this phenomenon of isolation looked like (representative quotes in italics):

The fact that it's a whole mix of different people crammed into a box in harsh conditions at sea where they may be exhausted, in very close proximity. It just has a lot of, I guess, challenges to it. It's a ripe environment for harassment, and we certainly make a lot of effort to clearly communicate our message. (P6)

It was the case where the male probably had no idea what was going on because he wasn't doing it when they were around. It [gender harassment of female grad student] was mainly happening in the middle of night when all of us were asleep. But it was a wake-up call to try to encourage communication. (P2)

... Invariably by experience, their [the Title IX Coordinator] first answer is, well, you've got to remove these two people from working in the same area. Well, how do you do that on a research vessel? How would you prevent two people from not seeing each other on a research vessel? ... I've been told by the university, "oh, have the two people report to my office." I'm like, "no, the ship is in the Indian Ocean right now." And they say, "Okay, I could talk to them on the phone." I'm like, "Okay, well, what time do you want to do that? They're 12 hours different." And they ask, "They're 12 hours different?" And I reply, "Yeah." Trying to answer questions by phone is difficult, even more difficult when one of the phones is at sea. ... How would you prevent two people from not seeing each other on a research vessel? Boy, that's tough. Particularly if you're on a 50-day cruise, and you don't want to interrupt the cruise. Because people have worked years to get the money and the approval for their program at sea. The ability to separate the accused and the perpetrator is difficult. ... If there was a person that you might have thought was a potential harasser, perhaps in your office space you could just make sure that you don't interact with them. There's never an opportunity not to interact with somebody at sea. (P7)

There's always kind of a hierarchy; people who are in positions with little power or influence and it's harder to speak up. You can feel that there could be consequences if you do. Unique to a ship? Of course, laboratories and other workplaces as well. But I guess one of the unique things at sea is if you speak up, you can get kind of labeled as a complainer or not being a fun person. The group dynamic can be difficult on a voyage where you're all in close quarters. It could be 30 days or something and those kind of strange group dynamics develop. Something like that probably wouldn't happen ashore because everybody would go home at the end of the day and situations would diffuse, but they may not when you're at sea. (P1)

When you go out on a vessel, you're isolated from all your exit strategies. You're really limited in your ability to exit a situation. Providing as much information on the front end as possible could help mitigate some of that "you're-doing-it-all-by-yourself" feeling. That can make people feel more secure being able to go into a remote destination. ... The ship environment is awkward because the ship is operated by one institution. The principal investigator is usually from another institution. And most of the cruise participants are from different institutions. We're trying to make the information for each institution's Title IX and harassment policies available for every cruise. Trying to disseminate that information to all the vessels and all the participants necessary is one of the concerns. (P4)

I think the unique part really is that there's a lot of different people coming on board and leaving throughout the year; with the crew being the people that are staying there, I think you have a big range in ages and experience. When you have students, they are probably not thinking as much as some of the older, experienced type scientists when it comes to things like this. Typically, we haven't had any problems with the crew, but you know that can come in. (P10)

Another aspect of research vessels that could contribute to harassment is the temporality of relationships between ship personnel and research personnel. In some cases, the research personnel may only be interacting with ship personnel one time. In other cases, the research personnel may be working with ship personnel multiple times a year.

The 'old guard' does not respond to more training. More training just makes them more resistant to feedback because it all seems so obvious. When someone says something demeaning – they say it because they think they're 'in good company' – i.e., the type of people who also will be cool with comments that were okay in the 1980s. As a woman, it's damn hard to be accepted by the male crew. Acceptance on these ships is important. You see the same crew people multiple times a year, so of course you wouldn't want to make a deal out of things. (Questionnaire Respondent)

As a student/junior scientist, it feels scary to say anything because 1) you have no idea how the situation will be handled (confidentiality, severity of action against perpetrator, etc.), 2) to realistically gauge possibility of retaliation while stuck at sea for another N+ days, and 3) if the incident isn't "that bad", in my case unwanted massage, making a big deal about it feels like you will be known as the overly sensitive one and it will somehow impact your career. (Questionnaire Respondent)

... There are exceptions, but the more you know somebody, the less likely you are to harass. ... once you have a relationship with someone ... so if you have new people keep coming in, there's more and more opportunity for bad behavior (P14)

There are social and hierarchical dynamics within both the research and ship personnel. When these two groups are combined at sea, the environment can create an interdependence where people who are on the low end of a power differential– due to age, gender, or 'outsider to the ship'– may not feel empowered to set comfortable boundaries.

My harassment was in a gray area. People in positions of authority need to recognize that it is not always easy or possible for students to refuse requests. Students need to be made more aware of what appropriate behavior is for crew (you should respect their requests when it involves your safety, but not for their personal benefit). (Questionnaire Respondent)

I think sometimes brand-new graduate students in a desire to fully integrate into the crew—and, there's no polite way to say it—they may not understand that it could very quickly turn into (a situation) where a sailor might think, "well, if you're paying attention to me, you like me". Whereas the graduate student is attempting to get their work done but needs assistance in getting their work done. I have, unfortunately, seen that turned into situations where harassment has occurred. (P7)

4.2 Positive Changes in Policy, Communication, Technology, and Demographics

Respondents indicated that changes in policy, communication, technology, and demographics have had a positive impact on the culture experienced onboard research vessels. Many respondents in the survey reported that there were no policies or grievance procedures for sexual harassment decades ago. More recent changes have included the three-module training system for communicating sexual harassment policy, as well as some institutions integrating policy communication into the cruise planning software, a web-based portal for communicating and uploading cruise information between scientists and operator institutions. Technological advances (i.e., better internet) have helped to mitigate isolation and facilitate communication with those on land while at sea. Small but pronounced shifts in the gender of those at sea have impacted the culture onboard. These changes were noted as improvements by respondents (not worsening the situation), pointing to a continued pathway forward in this direction.

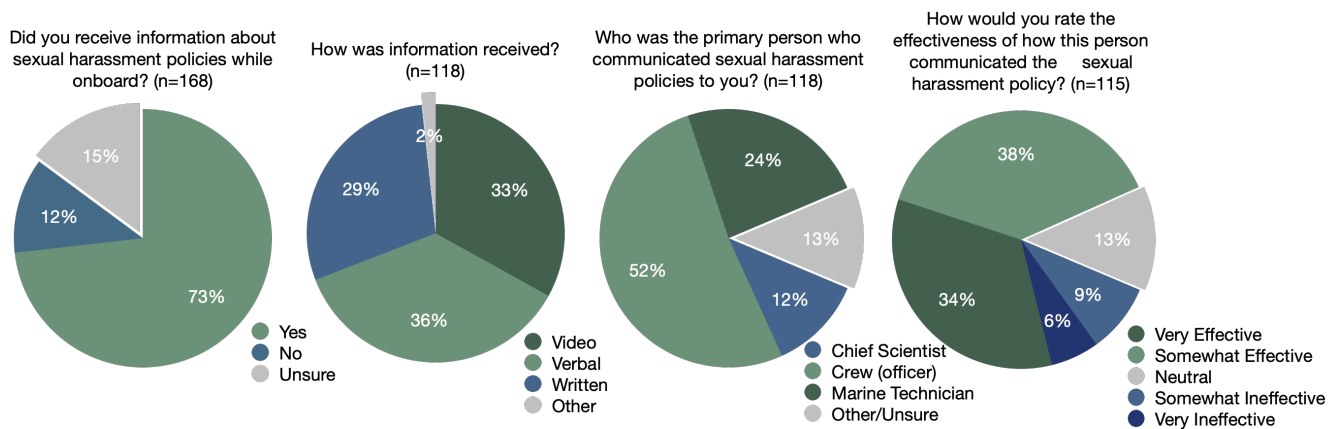


Fig. 4 – Summary of responses on questions related to communication of harassment policy.

4.2.1 Quantitative Summary

Most respondents (73% of n=168) recall receiving information about sexual harassment policies while onboard the research vessel with nearly an even divide between written, verbal, and video delivery (Fig. 4). A total of 71 out of 118 respondents reported receiving information in more than one way. Ship personnel (officer crew and marine technicians) most often deliver the information, and their delivery was primarily characterized as being effective (Fig. 4). Slightly less than half of respondents recalled having seen the 2019 Shipboard Civility videos (<https://www.unols.org/shipboard-civility>); 59% of those having viewed the video found them effective (Fig. 5).

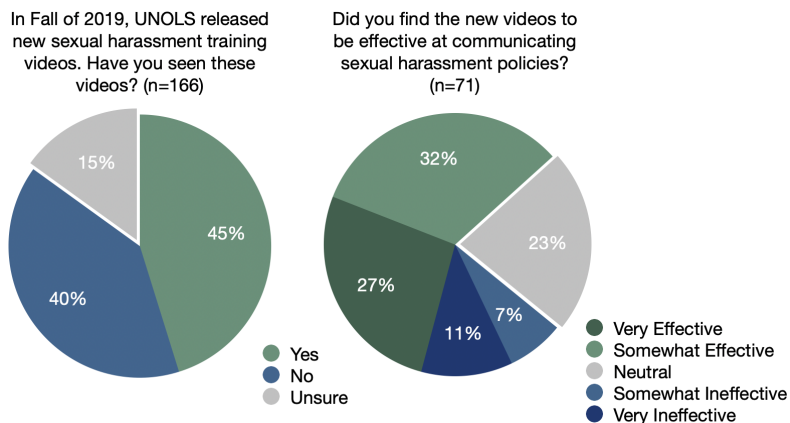


Fig. 5 – Summary of responses on questions related to the Shipboard Civility - Fostering a Respectful Work Environment videos.

We queried survey respondents about what action they thought would be most effective in improving the communication and experiences of policies while at sea (Fig. 6). The foremost answer related to increased training of participants with roughly an even divide between training of the science party, ship personnel, and personnel handling reporting. Changes in communication of policy received the second highest response rate with better verbal communication being the most cited need. Changes in representation onboard (more balanced gender ratio and more diverse workplace) followed closely behind communication change as being a key need.

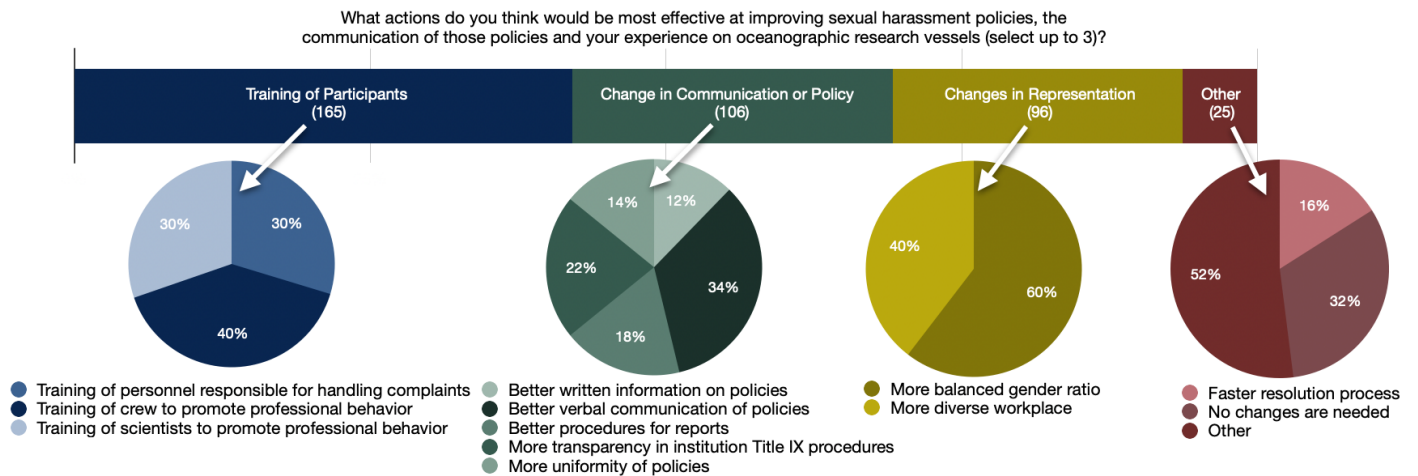


Fig. 6 – Participant response to the question: What actions do you think would be most effective at improving sexual harassment policies, the communication of those policies and your experience on oceanographic research vessels (select up to 3)?

In addition to the default categories shown in Fig. 6, participants were encouraged to provide independent responses to the survey query regarding actions that would be most effective at improving sexual harassment policies, the communication of those policies, and their personal experience on oceanographic research vessels. We received many responses focused on having a clear, “zero tolerance policy” and the importance of “following through with corrective actions” such as “don’t allow people who act inappropriately to be chief scientists”. Other responses spoke to having and following a “specific, communicated plan to deal with these situations in a remote environment” including but not limited to the need for “having fewer opportunities for isolation (e.g., late-night sampling) of vulnerable populations (students on their first cruise, etc.)” and “better training for everyone (scientists, crew, higher ups) including bystander intervention training”.

There were juxtaposition of responses to this question related to the need (or lack thereof) for action:

“All (of the things listed in the table above) are currently happening in the fleet”

“I believe the current system is working. Over my 15-year career at sea, things have continued to improve regarding sexual harassment. Things aren’t perfect but misbehavior is punished if it is reported.”

“seems silly to have rules on how to treat people professionally but here we are”

“People who are out to do harm will do this regardless of new rules or regulations. For the most part, not being a dick, and following common sense among everyone in the vessel has been the go-to. Structured rules cannot possibly cover every single nuanced situation either.”

One respondent offered a clear, suggested action: *“Shore-based resolution is problematic due to time/distance and communication issues. Ship-based have issues as well (proximity, conflicts of interest) and depending on the ship, too few people who can act as unbiased mediators. Perhaps a 24/7, third party onshore – like the medical advisory services – could be implemented.”*

4.2.2 Qualitative Summary

Research participants attributed culture improvements to a variety of factors: a change in culture at large brought about by the #MeToo movement; a shift in how federal agencies (NSF, lawsuits brought about by Obama Dear Colleague letter) and professional organizations approach the topic; shifting demographics on research cruises; the existence of official reporting channels; and better communication of sexual harassment policies.

Changes in Policy/Procedures

Both interview and questionnaire responses point toward the importance of previous changes in policy and procedures.

There is an evolution that has taken place in terms of harassment policies and communicating harassment policies. (P5)

Our harassment policy is set forth by the university. We also have policy via UNOLS, University National Laboratory System, and we were asked to by our federal sponsors to create a reporting mechanism. Because the ships are significantly different than a university, I participated in the creation of a flowchart that allows crew, technicians, and scientists a means to report sexual harassment in a variety of different manners. As the marine superintendent, I have responsibility for the seagoing crew. At times, it can become difficult. For instance, in a case where a marine tech has allegedly (or really) sexually harassed somebody, his supervisor may be ashore. The captain is ultimately responsible for the ship, but I will also, by necessity, be involved when a marine tech or a computer technician is involved in harassment. If there was an incident of a scientist harassing crew I would be involved, but ultimately/usually, that would be referred to the home institution to handle their own scientist. (P7)

I started going to sea in 1978. There was no such thing as sexual harassment policy. (Questionnaire Respondent)

It used to be that you were powerless; I can remember a case as a graduate student. You could go to the chief scientist, but it was kind of up to them whether they would take it any further. Some would and some wouldn't. So, I think that what has improved is there really a grievance procedure, and it will be followed through on and not just allowed to "we'll all forget about it when we get back to shore kind of thing." (P1)

35 years ago, before we had sexual harassment training and procedures. We now have those procedures because of incidents like the ones I witnessed on multiple cruises in the 1970s and 1980s. (Questionnaire Respondent)

The UNOLS policies are very important, because we will have scientists from all different universities or other institutions or colleges that will attend onboard. You know, various scientists, as you know, from different places coming together. So, one standard policy that kind of falls across all the participants in UNOLS, I think works out well, especially when they want to implement the policy and they can put it across all the different platforms. And then we have aligned our own (organization) policies to reflect in reference the UNOLS policies. . . . I think the policies have been effective. I haven't seen or been aware of any times where people didn't feel that they had a kind of mode to report – whether anonymously or directly – to supervisors onboard and on shore. We have all the contact numbers basically posted in all the passageways on the ship and in all the all the public bathrooms onboard. (P10)

I think one of the things that came out with some of the new policies and communications on this was just the kind of reminder that when you're working on a ship, you're working under several agency grants. You're on the job. You're responsible. This applies to everyone. I do think that without that reminder, some people (might) think, "oh, well, nobody's going to see; what happens on the ship stays on the ship". Again, I think it is clear in the new policies and communications that that's not true. (P1)

I have seen huge improvement in clarification of and action on sexual harassment policies in the 30+ years I have worked at sea, and clear improvement in atmosphere on ships, thank goodness! (Questionnaire Respondent)

That statement by AGU – which virtually every oceanographer is a member of– helped make that leap or small step from this just being ethically and morally abhorrent, to becoming ethically, morally, professionally, and funding-wise abhorrent. That got attention. That's why the AGU policy got written up in Science magazine. That's one of the reasons why when AGU did that... coupled with a couple of high-profile cases going on. Not only the #MeToo Movement. Then NSF was motivated. NSF always had policies, but they too cleaned them up and got them a little more specific. And then UNOLS as well. (P14)

About requiring our operators to follow the policies, I would add that in times when there are allegations, the program officers play a role in communicating those allegations appropriately following the set policies. We pass those effectively up the chain of command, if and when they occur. I'll just add that technicians are required to go through shipboard training, which includes sexual harassment. How technicians have been portrayed in those videos, and a lot of the issues, is very important to marine technicians. (P11,12,13)

In the earlier years, just talking about my time in UNOLS, you have a science person come onboard and, you know, some of them can be downright... they can say nasty things to the crew. Someone might ask, "Hey, how come these guys aren't held to anything?" I think what UNOLS and the science agencies heard that loud and clear. It puts everybody in the same playing field. I don't know if that's the right term, but the scientists must look at the video. The video has examples not just for the crew harassing science personnel, but science personnel harassing a science person, or a science personnel being inappropriate to a crew member. So, it's all kind of like, "hey, this counts for everybody." (P8)

If allegations come to NSF, regardless how they arrive, (there is) a protocol in place to have that adjudicated following the rules. We all have rules. Operators and institutions have their own processes and procedures. There is an Office of Diversity Inclusion at NSF. We have an attorney that is in that office. Any allegations would go directly to them. Then we would step aside. We don't get involved in the investigation at our level, because of sensitive information. They would determine whether it gets sent back to the universities to be dealt with at the local level. The reason why we have that is because if anyone feels like they don't want to go to their home institution or the operator's institution, they can always come to the federal agencies. (P11,12,13)

Ultimately, I guess, you would say the NSF has the greatest stick by funding 75% of science in the state. NSF certainly well uses UNOLS as their conduit for expression of policy, and so there's a clear expectation that you will enforce your university's policy. The ultimate thing is they would no longer fund science at sea on your ship, so the cooperative agreement is the vehicle by which we form a relationship with the NSF, and that's how it could be ultimately ended for egregious noncompliance. (P7)

What NSF said was that if there was harassment, funding could be cut off. But that was harsh. And I think it might have caused some of the institutions to think, wow, we'd better not report anything because we could get our funding cut off. I don't think it would be in our best interest to try to intervene in the universities, because we don't have the manpower. But we will cut off funding if an institution doesn't adequately handle harassment, period. That comes from our director. That's in our terms and conditions, so we take it seriously. (P11-13)

Changes in Communication/Training

Data from the interviews reveal information about when, why, and how communication about sexual harassment policies happen, the various tools used to inform and educate, and quite a bit about who is responsible.

Every team is probably a little bit different in how they handle these things. Within our team, we try to make expectations very clear about what behavior is expected of people. In trying to talk to people sooner rather than later when it looks like they are straying from those expectations. If we see somebody whose behavior is inappropriate when we are doing a cruise, one of the female [best guess] members of the group will pull them aside before it gets very far. . . . Typically, prior to sailing, the science party and the command group of the vessel discuss the expectations for sailing, what the rules of the ship are, and the nuts and bolts (things like meal hours, etc.). That's also the time when I try to explain to people what is expected of them in terms of professional behavior. I try to lay out things like where and what resources are available to people should they encounter problems. We've had a lot of discussions within the UNOLS fleet about how to improve that access. The policies about how these things are handled are not uniform throughout the fleet, as I'm sure you've already discovered. There are institutions and institutional implementation. They've certainly been evolving rapidly over the years. (P2)

The pre-cruise safety brief is given by a member of our marine technicians, because typically the crew is busy in the minutes before we leave. Sometimes the safety brief goes on for the first hour as the ship is leaving, so the marine tech is typically the person who gives that brief. Included in that brief is an invitation to watch the UNOLS required sexual harassment videos. There are now two. Respectful environment at sea, and it includes statements such as the flowchart that shows reporting. It shows where it's physically located in the ship, if you later need to reference it. One additional role I have is I am the designated person, which is required in all safety management systems. . . . The ship's crew is trained to know who the designated person is. (P7)

I think every cruise starts off with a science briefing and review of those kinds of policies along with safety and other essential policies that have to do with work on ship, and so nobody can claim that they haven't been told. It's very explicit and you're told directly who to report, and what is and is not acceptable behavior. These new "informational videos" help provide case studies and examples, so people understand better what we're talking about. (P1)

I believe all the UNOLS vessels have kind of a poster system that they use on each deck. . . . That poster gives you information on what to do if there's any kind of unsolicited, unreciprocated behavior. If it is your supervisor that is the source of the problem, who else to go to. There's a procedure for the person to find a safe way, or safe as possible, of reporting it. It's kind of like a flowchart, what to do if this happens, who they can report it to, etc. There are phone numbers. I know on our ship, we have several satellite phones up on the bridge with an area that can be kind of closed off for privacy, and if they feel they don't want to talk to someone on the ship, there's a number that we have for our university. There's an office 24/7 you can call. I believe all the ships have that. I'll only speak for our ship, but we do have that system on our ship. We've got a poster on each deck. (P9)

Right now, they are supposed to be required to watch the shipboard civility module before getting onboard a ship—well, at least before they get underway. There's some argument about whether everybody should watch it together on the ship or they should watch it ahead of time. That's how the information is getting out. Is everybody watching it? Are they're paying attention to it? I don't know. I (and I think MERAS maybe) have recommended that the poster and flowchart (for the shipboard stability model) should be in the cruise-planning information to the scientists. This way when they fill out their ability-to-sail form, or whatever it is, for each institution and provide that personal information, they also receive a copy of this flowsheet and contact list so that they have it if they need it... rather than having to hunt it down when they need it. (P4)

The older, now replaced 2013 UNOLS sexual harassment video (which was filmed aboard the R/V Thomas G. Thompson) received widespread criticism, and several interviewees pointed to improvements with the new video modules. Some of the qualitative data suggested that greater nuance in sexual harassment policy communication could benefit the community; for example, more discussion of consent, dialogue accompanying training videos, and additional training on how to receive complaints of sexual harassment.

... it is my responsibility to have a safe workplace for all people that doesn't involve sexual harassment or prejudice based on sexual orientation or any other qualities like that. We have the UNOLS videos. There's a two-part video series on creating a safe workplace free of discrimination and sexual harassment that we have on our website and on the intranet on the ship. I believe it's also on the UNOLS cruise planner app that folks can access and see that video. We have signage throughout the vessel indicating what to do if you are experiencing harassment of any type, and who to report it to, and during the pre-cruise departure, the captain gives a statement about not tolerating sexual harassment aboard and what to do if you experience it and points out the signage that we have onboard. (P6)

I show a PowerPoint and provide one sheet for the harassment policy for institution. And then we also have two videos now that we show respectability at sea. ... We must strive for a consistent message that gets communicated across the across the community about the issues of going to sea. You can imagine that if it's left up to the chief scientist and the captain of the vessel to communicate these things, there's going to be some differences cruise to cruise and person to person about what and how is communicated. As you think about some of the more subtle things that can happen it might be more difficult to capture those consistently in those communications. So, one of the changes in the kinds of training that we're trying to offer is to not just talk about the more blatant forms of the sexual harassment. ... Since the beginning of 2019, we were already completing additional training video. It was meant to be more ship specific. ... to have, I guess, more modules within it, various instances that might occur, and how you could react and what is the best way forward pertaining to ship specific, different kinds of harassment you could encounter. (P3)

UNOLS has come out with a set a new set of videos on shipboard working environment, respect, and harassment policies. There was a previous one that was getting a little dated. These new ones are, you know, improved and focus/match more with what the policies are, definitions, and things like that. So, I think that's one of the primary ways that they're communicated on board the ship. And from what I understand, those are being integrated into the cruise planning process. This sort of information becomes a step in the planning for the cruise. It's like communicating what the scientists plan to do. There are also the ship operators; this information is shared with the science crew coming on board. I don't know how it's communicated to the people that work aboard the ships, but I'm assuming they view those videos or something like them when they're hired or maybe there's regular updates. (P5)

... For our vessels and our crew, each university has mandatory training that they must complete annually. The videos are meant to compliment but not replace any of the training that needs to go

on. I think it's just a continuous effort. You must continually drive home the point. This whole idea of sharing the videos as widely as possible is that the same message appears if they're on an Antarctic ship, a UK vessel, a Coast Guard, our ship, NOAA ships, etc. So, people start to realize that we're serious about this message. If you'd looked at the video module 2, you know that the director did the introduction. That wasn't easy, but she was very committed to dealing with harassment. . . . The content of the video is really empowering to the person who might feel harassed or become a complainant. It says, "there are things you can do. You don't have to just take it." It's a repetitive message that has been hit home, instead of just keep your mouth shut and avoid the situation. Nip it. I think that this, when combined with the increased recognition of seriousness and the very public severe ramifications of bad behavior, are now manifesting in behavior at sea. . . a respectful workplace at sea environment. . . . The idea behind the video series was to watch it before. We're also going to provide it in different languages so that people can get it before they sail and read it if they're coming from a foreign country, and they can ask questions. We're trying to develop a question/answer type thing – like a book club. . . if you get this question, here are some ideas how to answer it. (The goal is to empower the people on the ship having to deliver the message. (P11,12,13)

I think the thoughtfulness and the multi-tiered way that supportive information is relayed to science parties and to crew is different than I've seen in other environments (especially ship-going environments where you may sign a waiver possibly. No one really says harassment to you in person or talks about it with you). . . . I provide a familiarization or orientation for every oncoming science group. For every cruise we have, and in addition to all the safety information and vessel familiarization, I also make (them) aware that harassment policies exist. I tell them where our informational literature is on the ship. We also offer it in the heads [restrooms] on this ship: it's a private space, no one will be in there with you or seeing you write down the phone numbers or emails of contacts onshore who you can go to. We relay that we want everyone to feel comfortable to do their work while they're at sea. And if anything is happening that is in the way of that, then they should feel comfortable to go to their supervisor. Or I offer myself as a resource (to go to the captain or directly after the event if they don't want to talk to anyone on the vessel). . . . Merely having the video there without any context—without talking to someone about it first, without prompting, maybe a dialogue or something that might be more useful to them—is instead creating these sorts of farcical situations to them. That's not good implementation. I can't really speak to the posters. . . only that they're very verbose as far as information goes. The one for my institution is very wordy. And it's clear as you read it, the kinds of things that we won't tolerate and the kinds of resources you have. But it looks very officious and bureaucratic in nature. It's not a welcoming visual or infographic. I've seen better ones on various campuses or in other situations that look more personal or are more interesting. (P3)

Discuss it with the people you just watched it with; what was interesting about it, etc. Any conversation that you have about it is better than not having a conversation about it. Discussion has more engagement than watching a video. If you watch the video, and then you talk about it in any capacity, you're already more engaged with the whole process than you would have been if you just watched it and then left and made dinner. One of the things that we noticed is that almost everybody takes away something different from each of the scenarios. . . in ways that we didn't think were possible. One of the reasons that discussion is really important is because you may think that you understand everything that happened in that video, and somebody else thinks they understand something completely different. You don't know that until you've talked about it. It will either give you a fresh perspective on one of the scenarios, or you can give them a better perspective on some of the scenarios. It helps ensure that people are kind of on the same page and taking away the same information. . . . We also really didn't want to demonstrate bad behavior. We wanted to demonstrate good behavior. We wanted to show positive interactions as opposed to negative interactions. That was part of the problem with the previous video; it ended up being kind of a joke amongst crew members, especially crew members who

were in the video. . . . (With regard to when), if we have them watch it ahead of time, on their time, and then check a box, it absolves us of some liability. But, again, did they watch and retain any of it? Some folks just check out of sexual harassment training as just a requirement. I'd like to think that the new video is a little bit more interesting and interactive than previous sexual harassment education. . . . One of the things that we tried to do with the new video (was) to make them more realistic scenarios that aren't outright a problem. So then hopefully it might keep a little bit more retention and interest because it's not obviously outrageous. . . . If I had my choice, the science party would watch it together and have a conversation about it prior to stepping onboard the vessel. Asking people to do something before they step onboard the vessel is difficult, but I don't think it's impossible. (P4)

There were many thoughtful, written-in responses in the survey query regarding the most effective way to communicate sexual harassment policies during UNOLS oceanographic cruises. Many spoke to the importance of "having multiple senior people on board communicating about sexual harassment policies in a way that puts those topics at the same level of seriousness as preparing the lab space." Others spoke to the importance of both written and verbal communication and commented on the importance of approach and timing in delivery of information. Several comments related to the importance of multiple, coordinated approaches including pamphlets, video, and verbal - the verbal should preferably describe examples from experience - and this should include describing the enforcement abilities in detail. Specific examples included:

Information should be supplied right from the cruise time application through to pre-cruise meeting from UNOLS. The chief scientist and ship's officer also have some responsibility to communicate harassment policies to both science and crew parties and enforce these policies. (Questionnaire Respondent)

It's difficult to say. Most people just want to get on with their work and the science project. It seems like the wrong time and place with so much going on. Maybe it would be better to have the scientists and crew have this training during a less hectic time so some of the material will soak in. (Questionnaire Respondent)

Scientists should receive messaging from both the crew and the chief scientist. To be honest though, it's most helpful to have other women on board. As I have become more senior among the science party, I've been sure to talk individually with female grad students just to let them know that they can talk to me if something that makes them feel uncomfortable comes up (Questionnaire Respondent)

The science party and crew need a clear pathway for reporting incidents (e.g., who to talk to etc.) and that their report will be taken seriously. A "buddy" system at sea can also be effective for discussing potential harassment issues. (Questionnaire Respondent)

Have the chief scientist or captain give a candid talk about their expectations and no-tolerance policies. (Questionnaire Respondent)

Everyone should call out inappropriate behavior amongst anyone onboard. (Questionnaire Respondent)

The importance of having "more realistic examples of interactions/ appropriate responses before a cruise begins (regular training beforehand) and a personal address from the Master and/or marine tech." (Questionnaire Respondent)

I think it is beneficial to have both the chief scientist and captain/chief mate mention the sexual harassment policy and emphasize that it is taken very seriously. I think it is also important to have a diverse officer crew and science party, so that if someone feels uncomfortable, they can go to someone who might look like them to report or talk through the situation. (Questionnaire Respondent)

One comment in the survey encouraged that "Compared to other SH communication, the UNOLS' (approach) was completely bloodless and almost offensive in its finger-wagging. It recalled the "just

say no!” campaigns. People on ships are still people. Trying to avoid SH by trying to prevent all sexual activities, consensual or not, is ridiculous. UNOLS should take a more mature and nuanced approach to communicating SH policies that shows respect to individuals’ abilities to identify SH vs respectful advances, and then to make it clear that they can confidentially report the former to the appropriate persons without fear of repercussion.” (Questionnaire Respondent)

Changes in Technology

Advances in technology onboard the ship—in particular, increased access and bandwidth to the internet—have created notable and recent shifts in experiences at sea. For example, affording more privacy and expediency when accessing resources online and by decreasing visibility of harassing materials that were once in common view.

My first research cruise was in 1983. I went on cruises where we would write letters on a word processor, type and print them, and give them the radio operator who would then type them into the teletype and send them home. They would then get printed and mailed. You’re not going to be able to report a harassment on that time frame and have any immediate response. As recently as ten years ago, to use the real telephone or something, you’d have to ask the captain’s or the scientist’s permission to do so. So, we worked really hard to make sure that virtually anybody has the ability to reach the beach at a moment’s notice if their personal safety or professional conduct warrants. We’ve really come a long way towards doing this. (P14)

Typically, we would get on the phone with any individuals that are involved, right away. We receive things in writing via emails and then it typically turns into a phone call. If it’s someone that’s local or on the ship, we can do a face-to-face meeting at the end of a cruise. If it was at (the organization) that would be the preferred method. But typically, it’s email and follow up with phone calls. And, you know, we’re all well connected today so it usually works out okay. (P10)

The data were also filled with ideas about technological improvements that could be made:

Whenever you go on a cruise, everyone must fill out kind of their pre-cruise information forms. They list that someone has an allergy, or they need to take a certain medication. Before people can go to the next step, they could have to review the policy or read through it or watch the video online and then it could be more of an electronic process. But don’t make it too burdensome for people coming on. But this could be a good part of a computer-based, pre-cruise check. Make sure everyone’s aware that it’s there. Maybe even a phone app that people can load up and do it that way. It’s always good once you get onboard to have one of the ship’s officers give the brief talk that is generalized and can be applied across multiple vessels. . . . I think there should be some type of tracking. It could be just about what type of incident. No names. Maybe it’s a multiple-choice type of form that people can select. Then you’d have some type of data being developed. I’m not sure if you’ve seen anything that’s been tracking data about this. (P10)

Various institutions have these personnel forms you fill out before you come on board. And there’s also like a pre-cruise planning app that’s going out that they’re hoping to adopt UNOLS wide. Is there anywhere within there, either within the app or within an individual personnel form, that each science party member might fill out that asks that person for the contact information of the HR representative or whomever from their home institution who is that person? Because you may have an instance involving people from several institutions and you have your own. Maybe if you’re a crew member who has then come to sort of handle the situation, but you don’t have the contact information of any of the involved parties’ responsible home institution (HR person or otherwise) onshore. Should we have

that? Is that something that every cruise, the captain or whoever the designated kind of person on the vessel is (usually it's the captain) I think could be the ultimate responder. Should we have access to that? Maybe, I don't know. Also, maybe having that question, might have that person think about that in advance because maybe they don't know what their own sort of resources are within their institution. (P3)

Changes in Demographics and Culture

"I feel like in 30 years I've gone from walking onto research ships that were mainly crewed by older men – typically ex-navy, where pornographic magazines would be around the ship – to a situation now where the crews are often younger." (P2)

... The vessel I frequent hires more female marine techs and officers, and participates in more female-heavy research cruises, I feel more empowered to do my job to the best of my abilities and stand up for myself/others if I see discrimination happening." (Questionnaire Respondent)

The tone is already changing a little bit. In the past that never would have happened because you need the sea days. I'm happy to say that it's already making some influence. But I don't know how effective the message is getting to the PIs, or the PI's cruise participants, and what their options are. Because it's individual PIs, and ship operations that are scheduling their crews, that are responsible for disseminating that information. (P4)

4.3 High Policy Familiarity Has Yet to Translate into Higher Reporting

Despite improved communication, the intense work schedule, remoteness, and duration of research vessel work can still create barriers to communication of policy and to official chains of reporting. Additionally, the harried pace of pre-cruise logistics of loading and unloading gear made it difficult to squeeze sexual harassment training into the pre-cruise safety brief. Results indicate that overall familiarity with harassment policies is high, yet policy familiarity has yet to translate into reporting. The reasons for this disconnect are nuanced and complicated. For example, in a review of research by the EEOC in other work environments found that using official reporting mechanism can be a gamble for those making the reports (Feldblum and Lipnic, 2016).

4.3.1 Quantitative Summary

Familiarity with policies on harassment was high relative to those reported in the Clancy et al. (2014). In that SAFE survey, only 37% of respondent remembered having ever worked at a field site with a code of conduct. In this study, 73% of respondents reported that they had received information about sexual harassment while onboard the vessel. Respondents in this study were more familiar with policies of institutions "closer to home" with the greatest level of familiarity with Home Institution Sexual Harassment Policy and the least familiarity with NSF Sexual Harassment Policy (Fig. 7). Differences in familiarity by position (e.g., tenure track faculty, student, officer crew, etc.) were slight with a few notable exceptions. Generally, ship personnel were more familiar with vessel policies than those in the science party, and officer crew were either very or somewhat familiar with vessel policies (i.e., no reports of being not familiar with these policies by this group). Postdocs seemed to be an exception in that this

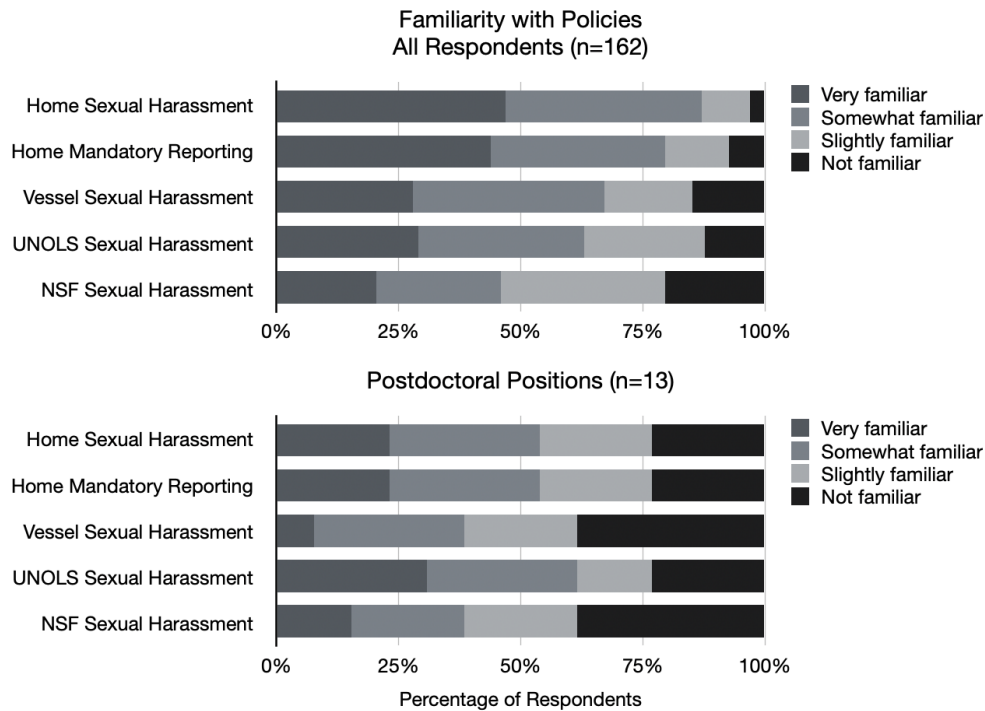


Fig. 7 – Familiarity with policies for all respondents (n=163) and postdocs (n=13).

group of respondents reported less familiarity with policies across institutions (Fig. 7), perhaps pointing to the temporary nature of these positions.

The survey form asked respondents a sequence of questions regarding “a particular” incident of harassment that was either experienced or witnessed. Only 7 out of 83 respondents who answered this question set filed a formal report of the incident in question. Reasons for not reporting were multifaceted with the only clear consensus being that many respondents did not report because they were not certain that the incident should be considered harassment (Fig. 8).

In addition to the default response rationales reported in Fig. 8, we received several thoughtful responses encompassed within the ‘Other’ reasons for not reporting harassment. When queried about their reasoning for not reporting sexual harassment that they had witnessed, some took the time to write in responses. The most prevalent response was that the victim had already reported the harassment and/or that the victim did not want the person who had witnessed the harassment to report. Other responses spoke to lack of awareness of what harassment is (“*The behavior was not harassment; it was just a creepy asshole talking about students*”) or when the person to whom one would report was the harasser (“*The perpetrator was the Chief Scientist*”). When queried about their reasoning for not reporting sexual harassment that they had experienced, some took the time to write in responses. The most prevalent responses were related to lack of a reporting system or that the person to whom one would report was “good friends with” or the perpetrator of the harassment. One comment reflected other data in the study: “*I knew the behavior was sexual harassment, but it was my first cruise, and I was a young grad student. So, I just thought that was what life was like on a ship. In hindsight, knowing what I know now, I would have handled the situation VERY differently.*”

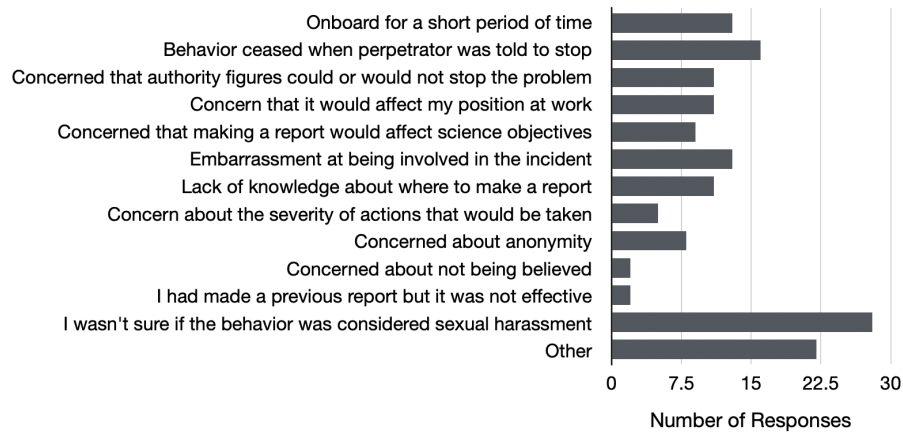


Fig. 8 – Responses to the question: Many people do not feel comfortable reporting sexual harassment. What was your reasoning for not reporting the incident that you witnessed? (select up to 3)

4.3.2 Qualitative Summary

The ways reporting and grievance mechanisms have evolved was a common theme within the qualitative data.

I guess one way we think it evolved is, today someone with a grievance has more options. They can be more directly involved with reporting that grievance through the various channels. It used to be that you were powerless. (P1)

In terms of grievance reporting, there's been sort of an education for people who are in the chief scientist role; to have multiple people that can report to just in case the person isn't comfortable going to the chief scientist... that there's somebody else designated as a secondary place. Or, you know, several places also have phone lines available for someone to report to; some institutions have this as an option. I learned about (options) through word of mouth from other people who were being chief scientists and them saying that they do it this way. Because I don't really think there's anything formal that spreading that information. I think it's just more sort of informal networks of other people who are doing it. Another observation is that the ship operations are doing a better job of hiring officer pools with more diversity; there are male and female officers on the ship. So that can make reporting easier in case somebody is not comfortable reporting to a male officer versus a female officer. (P5)

Remaining challenges were also shared repetitively, including some thoughtful suggestions for improvement:

The feedback I have gotten every time I have brought a complaint forward is that I need to have documented the observations and exact experiences with dates and times. When a person chooses to behave in a non-professional manner it is often chronic. Therefore, documentation becomes a big stress on top of the stress of being trapped in a 24 hour, several-month work environment with that person. When you do get off the boat the last thing you want to do is have unpaid meetings about the issue where you relive the unfortunate events(). (Questionnaire Respondent)

It's made clear who you can go to in the case of a problem. I think having it openly discussed and very clear that there's no tolerance of that kind of harassment is how the UNOLS policy is helping. ...I

thought that, in most cases, that was pretty spelled out. But I think what it often means is that you end up working through multiple chains for resolution. You may work through your own institution, but also you must bring in the other institution as well, and so it just makes it maybe a little more complicated. (P1)

One of the things that I think is sometimes confusing is who people can turn to if they encounter problems. We are trying to come up with – what we need is – a set of guidelines for people to follow. The problem is you can turn to the captain of the vessel or the chief scientist but what happens if you either don't trust them or they're part of the problem? Who do you go to in a situation where there are multiple institutions that might have jurisdiction over what's happening on the ship? ... If something does happen, there are issues of regarding what the chain of reporting and chain of responsibility actually are. Do you report at the operating institutions of the vessel? Do you report back to the institution of the chief scientist, principal investigator for the program? Do you report to the institution of the victim or of the perpetrator? What is the right line to follow or do you follow them all? On a more immediate level, if somebody is having a problem and they just want help trying to resolve it without escalating it – or they want somebody to talk to – who do they reach out to? Who and what institution would be there to support them? ... I really worry about the kind of silence that comes down around a lot of these issues of lack of transparency. I worry about it from both directions because I've seen both things happen. Where there is legitimate harassment and the person being harassed struggles to be heard and taken seriously. But I've also seen the reverse or opposite, where there was an accusation of harassment that wasn't real. Those cases end up where the person being accused has no ability at all to defend themselves. It just seems like a more transparent policy might help that. But I don't know what the right thing to do is in that case. (P2)

The only person who can react and make a difference on the ship itself is the captain. And so, depending on how responsive your captain is, the person who may be the perpetrator in that situation may not see any retribution at all (may not even get a really-good talking to!). And trying to go outside the ship to the company, you may also not get a good response. Unfortunately — and maybe this is why it is good to be very verbally clear that we will not tolerate harassment — people are willing to let things slide a lot. And I think it's because they see that this is a temporary situation. Maybe they don't always work with that person. Or maybe they do always work with that person. They're in a situation where they think other people will know if they say something. They don't feel comfortable taking it anywhere. So, they just deal with it until their job is done. And I'm not sure that that would be the same case in a bigger organization, or where you could go home or like physically remove yourself from that situation a little more completely. And so, I think, you see higher levels of people tolerating things: verbal or physical abuses or harassment that they wouldn't otherwise just because any potential downtime or impact on the mission. ... I certainly have worked on ships where I wouldn't feel comfortable going to the people that I tell others that they can go to. Screw that. I have even had my own issues with those people, which is ridiculous. ... If that individual is indicated as being someone that you can go to confidentially to report grievance, but has shown a history of being unresponsive or even being negative, why would you go? You wouldn't. And, if THEY are the perpetrator, that's even worse. There's a weird culture onboard ships... levels of harassment or the strong personalities that come out and say and do things that are absolutely inappropriate. And they do it publicly in front of other people, in the heat of the moment or whatever, and it's tolerated. So, the more that happens, I think the less you say. So, I think there's a big issue there. And I think that's the fault of the institution for allowing these people to continue working without a change in their behavior. And I think if UNOLS wants to be more responsible then maybe mandatory, actually useful trainings and actual retribution for behaviors needs to be more standard. They need to respond. I haven't been doing this too long, since 2018, and I haven't seen anything like that. (P3)

The disciplinary function follows back to whoever their employer is. I do know that the Title IX officers from each school are tremendously well equipped to transfer information to a Title IX officer at another

school. If it was an incident that occurred on a ship with one of my mariners, the end result will be known to everybody in our community, because of the tightness of our mariners. So, if somebody was removed for harassment, that sends a signal. Whereas if somebody from another institution harasses and the investigation is sent over and the person leaves our ship, the end result is unknown, and so you might possibly hear something back later. The enforcement side is less clear when you have somebody from another institution, and I think the two universities would join together in their investigation. And, ultimately, one would become the lead, and the other one would just be in a position of providing facts to the other. But it does make it a bit more difficult. (P7)

If you say that I don't want you to sexually harass anybody, and then make a joke, you're not treating the subject with the seriousness or reverence that it deserves, and if you are a person that I am supposed to report to, I now no longer feel as if I can report to you. . . . Unless a situation requires legal intervention, almost the only recourse that one has is to point out the inappropriate behavior to an employer, who can then discipline or manage as they see fit. Whether that's always the best way or not is a different question, but really the only recourse that you have is through somebody's employer and their pocketbook. If you need to move it along the chain, then I think that it needs to go to that person's HR department and that person's employer or that person's Title IX and make a complaint there. Because the only people who have any recourse, again, unless it requires legal intervention, is their supervisor. That's if the complaint goes to their supervisor. It's probably also a good idea to make a complaint with your own institution who can then perhaps interact with the other person's institution on your behalf potentially. It depends on the severity of the situation, but I think it's a good idea to make a report in both places. . . . I personally have made a lot of choices just to get through a situation, because sometimes if the offense is minor but uncool, it might be easier to just ignore it and move on with your life so that you can just do your job. I'm not saying that that's right or that's wrong, but it's a call that every person makes in every interaction in their daily life, and that includes in incidents that can be construed as sexual harassment. You're like, okay, is this something that I'm going to argue about, or is this something that I'm going to put my foot down, or is this something that is just going to consume too much of my time and energy to do so, and so I'm going to move on? It's a decision that everybody must make. (P4)

The ultimate thing it comes down to is the idea that as a community, we respect each other. There is a community standard that is clearly understood. I can give you an example, and maybe this is a nice way to put it. In the (space), you stand watch with your watchmate, particularly on things like the midwatch. It lends to conversation. (This person) would bring up what I would consider red-light conversation. You don't have these conversations, because of the potential to make somebody else uncomfortable. (This person) would phrase things in terms of, "well, I don't feel this way, but kids in high school who have same-gender parents are bullied, so it's really tough on kids who have same-gender parents". This type of conversation. (The same person) would always deflect by saying, "this isn't my opinion but. . ." So finally (in this story) the new employee ran into a female chief scientist, and she said, "does this kind of conversation happen much?" The female chief scientist was irate, stating that should never happen. This is an example of the community enforcing respect. Where the policy has the greatest enforcement value is when – from the most junior seamen through the master and across the technician world and into the science community – everyone comes to sea with an expectation that we have a place of respect. (P7)

5 From the Authors' Perspectives

We are an interdisciplinary group of scientists who represent a variety of perspectives and experiences: a marine-related social scientist (Conway), an ethnographer of climate and ocean

engineering (Jordan), a sea-going physical oceanographer (Shroyer), and a merchant mariner (Winters). This project was conceived and conducted by Winters in pursuit of her Master of Science degree in Marine Resource Management at Oregon State University. The study was unfunded, and therefore limited in resources and scope. The study participants were self-selected and not based on a random sample, therefore this data cannot be generalized outside of the data set. However, it represents a first attempt at assessing communication of and experience under current sexual harassment policy in the U.S. ARF. We hope that it will be a launching point for further study on the topic. Although modest in scope, this collaboration between ocean and social scientists encouraged us to stretch outside our disciplinary boundaries to identify joint successes and areas for improvement regarding harassment at sea. We learned myriad valuable lessons from those who gave their time to participate in this study, and we share several implications for harassment policy, its communication, and “take-home” messages for anti-harassment measures moving forward.

- Multiple forms of communication must continue to be embraced in communication and training and normalizing of sexual harassment policy. In addition to the successes of the current video and written training practices, the importance of informal verbal communication, and fostering a frank, meaningful dialogue cannot be overstated. Continuing to foster and advance ongoing formal and informal communication of anti-harassment is needed, as is supporting a culture where harassment doesn't occur in the first place.
- Not only must there be multiple approaches to communicating policies both formally and informally, but there is a need for introducing additional check-ins throughout the cruise. The conversation should start early and be ongoing. The delivery of key information needs to consider timing relative to other cruise activities, particularly during cruise mobilization when members are distracted with onboarding needs and early transit periods when many are physically ill. Building familiarity and comfort with this topic through ongoing dialogue may help reduce incidence, encourage intervention before escalation, and improve reporting rates.
- Harassment policies are helpful not just as a grievance procedure. The policies and trainings provide a needed language to identify harassment. Further, participants emphasized that the culture of change can be attributed to videos and trainings that provide examples of harassment and possible actions for victims and bystanders. Additional training in bystander intervention and conflict de-escalation, particularly for those who communicate the policies, would equip the fleet to foster an environment of respect and safety.
- The reasons for not reporting incidences of harassment are nuanced and varied with only one theme that clearly emerged– we should improve understanding and recognition of behaviors that constitute harassment in training resources and as part of the dialogue. The ship environment likely creates additional obstacles, e.g., limited communication with little privacy like VOIP in public spaces, confusion associated with multiple reporting lines, uncertainty about implications for reporting, that further discourage reporting. The hierarchical structure of the research cruise environment is particularly precarious as safe communication channels are blocked when leadership roles (in either the science party or the crew) downplay, ignore, or even cause the harassment. Reporting avenues should be multi-branched and offer avenues that are outside leadership when at sea.

- UNOLS is perhaps a unique construct within field settings, and it is poised to continue be a valuable resource for advancing progress in this area. Initially organized around the practical need to schedule multiple platforms, UNOLS now has a role as a communicator and organizer across operating institutions and user groups. Community input has a well-defined pathway within the UNOLS framework, and the information flow is two-way with UNOLS providing a platform for formalized communication back to its member organizations, which include U.S. ARF operators.
- Participants repeatedly spoke to improvements in the environment particularly over decade timescales, and as a clear reflection of the U.S. ARF's changing demographics and changing culture. However, the ship environment remains one which cultivates a climate conducive for harassment, and these improvements should not make us complacent. When survey respondents report having experienced harassment within a day of completion, we clearly have room to improve climate and culture.
- Ship personnel are an important part of any seagoing environment and are a significant influence on the culture at sea. Sometimes the crew is unfairly stereotyped as being the source of all sexual harassment problems; these data show that both science party and ship personnel perpetrate harassment. Likewise crew also experience sexual harassment and identified many of the same difficulties with reporting as other respondents. Additionally, harassment of crew can extend beyond the walls of the ship to shore-based support personnel, as pointed out by one reviewer.
- Participants noted there are few women crew and even fewer women officers within the U.S. ARF. And, while many respondents selected "more representation" as a way to improve the ship environment, we could not find demographic data of crew on U.S. ARF ships to speak to this breakdown. One reviewer further noted that leadership positions within funding agencies, academic institutions, and vessel operators are still predominantly held by males with the implication that more balanced representation at higher levels would percolate through the system in positive ways.

6 Conclusion

Policies intended to support the academic research fleet at sea, including Title IX and institution-specific harassment policies, continue to evolve as more cases and research provide understanding of preventing harassment and protecting individuals. How a policy is implemented, the approaches to training, and the forms in which anti-harassment norms and policies are communicated continue to be important and improvable. Recent efforts to develop videos in conjunction with written or textual training programs have proven to be positive advancements, and our study highlights helpful pathways toward even more successes in safety and security for seafaring researchers and crew. Harassment prevention should be viewed as an iterative ongoing process towards improvement rather than as a "one and done" solution that a single action, video training, or policy change can solve.

Non-reporting continues to pervade most programs built for harassment protection (e.g., Fitzgerald et al., 1995), yet our study demonstrates that these efforts to ensure infrastructure and policy for survivors greatly improves climate and culture, helps individuals in identifying and naming harassment when it happens, and provides pathways forward. While it remains

true that the sea-going ocean research community largely does not use official reporting systems under Title IX, the existence of policy alone has contributed beneficially to the community by establishing a seriousness and providing a needed and desired language for identifying and articulating harassment. This language particularly provides boundaries and clarification for both those who are worried about perpetuating harm and those who have witnessed or experienced harm.

Study results supports several “next steps” that could help integrate Title IX into at-sea safety protocols, extend current training through rich examples, and provide practical suggested actions for bystanders. Anti-harassment requires both formal and informal communication and should exist at multiple points in any cruise, not just at its start but throughout its planning and debrief as well, as recommended in the safety checklist by Ackerman et al. (2023). Other key implications for the design and deployment of harassment policies at sea for the academic research fleet include new communication protocols, bystander intervention training and resilience strategies, informal or interactive training, as well as future development informed by collaborations between trauma-informed specialists, social scientists and ocean scientists. These improvements would promise a continued positive cultural transformation in the geosciences, as reflected by one participant’s perspective:

I think the most empowering information is designed to teach people how to interact with other humans. I think every field needs more of that. Also, empowering you with the information that you need to make a complaint or make corrections. People are immediately defensive if you say, in any shape or form, that what they did is not appropriate or is offensive. I think that if we spent more time working on things like hearing criticism and how to interact with people, it would reduce a whole lot of the other problems that we have; straight-up sexual harassment and that sort of thing. It seems like they’re not necessarily closely related, but they are. A lot of times sexual harassment is not about sex or attraction. It’s almost always about a power play and bullying, and people do that out of defensiveness or to establish a pecking order. (P4)

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Appendix A: Interview Questions

Oceanographic Research Vessel Sexual Harassment Policy Interview Questions

1. What is your job title and role in your institution?
2. Please describe your role regarding forming, communicating, or implementing sexual harassment policy aboard research vessels.
3. Please share your familiarity and understanding of the Maintaining Environment of Respect Aboard Ships committee?
4. What is unique about research vessels in implementing sexual harassment policy?
5. Please share your sense of how UNOLS-recommended policies are important for preventing and reporting sexual harassment.
6. In what ways have sexual harassment policies changed over time?
7. When and where are sexual harassment policies communicated?
8. When at sea, personnel on a ship represent a variety of institutions and positions (such as crew, tenured scientists, grad students, contractors, etc.). What are the opportunities and challenges in implementing policy among these different institutions and job categories / roles?
9. When at sea, personnel on a ship represent a variety of institutions and positions (such as crew, tenured scientists, grad students, contractors, etc.). What are the opportunities and challenges in reporting sexual harassment among these different institutions and job categories / roles?
10. In what ways might formal or informal sexual harassment policies be improved?
11. Is there anything else that you would like to share regarding the history of how these policies have evolved, the way the policies are communicated, or sexual harassment reporting?

Appendix B: Survey Questions

Oceanographic Research Vessel Climate Questionnaire¹

RESEARCH AND CONSENT STATEMENT

You are being asked to take part in a research study through this confidential questionnaire. The purpose of this research study is to gain a better understanding of sexual harassment policy communication, implementation, and experience on research vessels within the U.S. academic research fleet (ARF) whose operating institutions are members of the University-National Oceanographic Laboratory System (UNOLS). This study is part of the thesis requirements needed for attaining a Marine Resource Management Master's degree from Oregon State University. The student researcher has been certified in IRB protocols for human subjects' research and received training in Gender and Sexuality Diversity (GSD) in Human Research and Vulnerable Subjects - Research Involving Workers/Employees.

All answers to this survey are confidential. Quotes from written responses may be used but will be stripped of all identifying information (including demographic information) to protect the sensitive nature of the data collected. The researchers recommend that you take this survey in a private setting. After consenting to participate in this research and verifying that you are over 18, you may skip any of the questions. The security or information collected online cannot be guaranteed. Information collected from you for this research will not be used or distributed for future use.

This survey lasts 15 - 30 minutes. It is designed to understand the experiences of crew, graduate and undergraduate students, researchers, technicians, contractors, etc. Questions inquire about your role, the shipboard environment and climate, and communication of shipboard policies. Topics concern both commonplace and more sensitive experiences in oceanographic research at sea and, as such, may surface difficult experiences for the respondent. You may leave any questions blank or leave this survey at any time. We thank you for your participation and believe that your answers will contribute to improving the climate and culture within sea-going oceanographic research.

If you are an OSU student, your decision to take part or not take part in this study will not affect your grades, your relationship with your professors, or standing at OSU. If you are an OSU employee, your decision to take part or not take part in this study will not affect your employment or benefits at OSU.

We are not collecting details of institution, dates, names, or other identifying information. As a reminder, the researchers, like all employees at OSU, are required to report Title IX complaints to the Office of Equal Opportunity & Access (EOA). Under the current policy, if the researchers have information about or reason to believe any form of sexual harassment or misconduct has been perpetrated by an OSU student, staff, or faculty member; has occurred on OSU property or during an OSU activity; or has created continuing effects in the educational setting, the researchers must immediately contact the Title IX Coordinator. The researchers must disclose all

¹The questionnaire was multi-branched and routing depended on answers to particular questions. This version of the questionnaire provides the questions only (no response and no routing depending on the answer the participant provided).

details provided by the participant. Please note that a report could trigger an investigation and the information provided to researchers by the participant could be further disclosed by EOA to others (e.g., Student Affairs, Student Life, appropriate authorities). You may also file a report with EOA without participating in this research.

If you have questions about your rights or welfare as a participant, contact the Oregon State University Institutional Review Board (IRB) Office at (541)737-8008 or by email at IRB@oregonstate.edu. If you have any questions about the study, please contact: Johna Winters (student researcher) M.S. Candidate Oregon State University wintejoh@oregonstate.edu

Q1 I have read the research and consent statement and agree to participate in this study.

Q2 I am over the age of 18. (IF NO, end of survey)

Header 1: Please provide the following details about your role on UNOLS-member research vessels. All questions are optional; you may skip any question.

Q3 Approximately how many oceanographic cruises have you participated in on UNOLS-member research vessels?

Q4 What is your current status? (role/rank)

Q5 When you participate in oceanographic cruises, what is the typical cruise duration?

Q6 What is the length of your typical rotation or hitch?

Q7 Do you participate in research cruises as a Chief Scientist?

Q8 When you participate in oceanographic cruises, what is the typical vessel class?

Q9 Are you an employee or contractor?

Header 2: Please tell us about yourself. All Questions are optional; please note that data will not be reported on a granular level.

Q10 What is your gender?

Q11 Do you consider yourself to be (sexual orientation/identity)

Q12 Select one of the following races that best describes you:

Header 3: The next set of Questions concern how you have received information about sexual harassment policies and your familiarity with those policies. You may skip any question.

Q13 Please use the following scale to indicate how aware you are the following policies (home institution's policies, research vessel host institution's policies, NSF polities, UNOLS policies, etc.)

Q14 In Fall of 2019, UNOLS released new sexual harassment training videos. Have you seen these videos?

Q15 Did you find the new videos to be effective at communicating the sexual harassment policies?

Header 4: For the next set of Questions, please consider your most recent UNOLS cruise experience. All Questions are optional.

Q16 Did you receive information about sexual harassment policies while onboard the research vessel?

Q17 How did you receive information about sexual harassment policies?

Q18 Who was the primary person who communicated the sexual harassment policies to you?

Q19 Did the person who communicated the policy take the topic seriously?

Q20 How might you rate the effectiveness of how this person communicated the sexual harassment policy?

Q21 Is this typical of the way that sexual harassment policies are communicated when you participate in oceanographic research cruises?

Q22 In your opinion, what is the most effective way to communicate sexual harassment policies during UNOLS oceanographic cruises?

Header 5: This next set of Questions ask about experiencing and witnessing verbal and physical harassment. This sensitive information will be kept confidential. You may skip these Questions with no impact to yourself. If you answer and then want support after thinking about these experiences, please note that there is a list of resources at the end of Questionnaire.

Q23 Have you ever experienced inappropriate or sexual remarks, such as comments about physical beauty, differences in cognitive ability due to gender, or other jokes or comments that treat people of different sexes or genders differently on an oceanographic cruise?

Q24 Have you ever experienced physical sexual harassment, unwanted sexual contact, or sexual contact in which you could not or did not give consent on an oceanographic cruise?

Q25 Have you ever witnessed inappropriate or sexual remarks, such as comments about physical beauty, differences in cognitive ability due to gender, or other jokes or comments that treat people of different sexes or genders differently on an oceanographic cruise?

Q26 Have you ever witnessed physical sexual harassment, unwanted sexual contact, or sexual contact in which the victim could not or did not give consent on an oceanographic cruise?

Header 6: Please answer the following set of questions based on one (1) particular incident. You may skip any question.

Q27 Are you answering questions about an incident that you witnessed or experienced?

Q28 Approximately how long ago did this incident occur?

Q29 What was the rank of the victim at the time of the incident?

- Q30 What was the gender of the victim at the time of the incident?
- Q31 What was the rank of the perpetrator at the time of the incident?
- Q32 Gender of the perpetrator (if known)
- Q33 Did you make a formal report about this incident?
- Q34 Did you feel supported by the institution in the aftermath of the incident of sexual harassment?
- Q35 What was the duration of the research cruise?
- Q36 What was the class of the vessel?
- Q37 How would you rank the amount of privacy on the research vessel?
- Q38 How did the interaction between the crew and the science party affect the working climate?
- Q39 During the cruise, what was the most prevalent gender of the crew? Science party?
- Q40 Was the gender representation typical of your experience on other research cruises?
- Q41 Did the gender ratio affect the working climate positively or negatively?
- Q42 During the cruise, how would you characterize the racial diversity?
- Q43 Was the racial representation typical of your experience on other research cruises?
- Q44 Did the racial diversity affect the working climate positively or negatively?

Header 7: The following questions concern your experiences filing a formal report on the incident that you witnessed or experienced. Please answer these questions about the same incident that you answered questions about previously in this questionnaire.

- Q45 Who did you report the incident to?
- Q46 Did you feel supported by the institution where you made the report in the aftermath of the incident of sexual harassment?
- Q47 How satisfied were you with the outcome of reporting the incident of sexual harassment at sea?
- Q48 Was there any effect on your work or employment status as a result of reporting?
- Q49 After reporting the incident, what action was taken?
- Q50 How long did it take to resolve the incident?

Header 8: The following questions concern your experience with not reporting sexual harassment incident that you experienced or witnessed while at sea. You may skip any question.

Q51 Many people do not report sexual harassment. What was your reasoning for not reporting the harassment that you experienced?

Header 9: The next set of questions focus on improvements.

Q52 What actions do you think would be most effective at improving sexual harassment policies, the communication of those policies, and your experience on oceanographic research vessels?

Q53 If you have any other comments about sexual harassment policies, their communication, or your experience with sexual harassment while at sea, please note them here. We would prefer if you would not provide details of institution, dates, names, or other identifying information as we are required to report Title IX complaints to the Office of Equal Opportunity & Access. (Limit 20,000 characters)

Thank you for your participation in this questionnaire. Your responses will be kept confidential. If you have any question about this questionnaire, please contact Johna Winters (student researcher), M.S. Candidate, Oregon State University, wintejoh@oregonstate.edu. If you have questions about your rights or welfare as a participant, contact the Oregon State University Institutional Review Board (IRB) Office at (541)737-8008 or by email at IRB@oregonstate.edu.

Here are some resources related to sexual harassment that you might find valuable:

At Oregon State University: Oregon State University Survivor Advocacy & Resource Center, <https://studenthealth.oregonstate.edu/sarc>; Phone: (541)737-2030, Email: survivoradvocacy@oregonstate.edu

Local Services in Linn and Benton County in Oregon: Center Against Rape and Domestic Violence (CARDV), <https://cardv.org/>, 24-hr Crisis & Support Line – Call: 541-754-0110 or 1-800-927-0197, <https://www.resourceconnect.com/cardv/chat>

RAINN: Rape, Abuse & Incest National Network (<https://www.rainn.org/>) RAINN's hotlines: Online | Phone: 1 800 656 HOPE | Local National Sexual Assault Hotline <https://www.rainn.org/about-national-sexual-assault-telephone-hotline>