

CAREERS

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Young researchers may be especially vulnerable at field sites.

RICHARD NOWITZ/GETTY

experienced similar ordeals. But accounts of predatory behaviour have largely remained shrouded in secrecy, conveyed mostly as whispered warnings. Early-career researchers — mainly women, although men note harassment as well — are most vulnerable, yet are loath to speak up about sexual harassment, and even assault, lest their reputations be tainted and their careers damaged as a result of peer scepticism or retaliation by the offender.

According to the United Nations, harassment is defined as unwelcome sexual advances, requests for sexual favours and other verbal or physical conduct of an intimate nature. The definition comprises any such behaviour that creates a hostile or offensive work environment and can include hanging around the victim, making unwanted leading remarks or touching them, as well as attempted or actual sexual assault.

Studies also show that sexual harassment is usually more about power than about sex, making harassment by senior scientists of their subordinates the most difficult to deal with. Those who could be vulnerable to sexual harassment need to look to their personal safety — yet also have the problem of protecting their career.

Although still dismaying, the outlook may slowly be improving. Early-career researchers, both men and women, and academic organizations are beginning to develop individual and collective ways to protect potential and actual victims and to raise people's awareness that harassment and assault continues and how best to handle it, whether as victim or colleague.

SHINING A LIGHT

The incidence of sexual harassment and assault at scientific field sites was quantified last July when the SAFE study was published. This online survey of field scientists uncovered a range of negative experiences; nearly two-thirds of the 666 respondents, who were mostly women, reported being sexually harassed at a field site, and one-fifth said that they had been sexually assaulted. The findings stunned the scientific community and prompted dozens of news articles and thousands of social-media postings.

Those findings have sparked more surveys that will become the basis for clear guidelines on acceptable behaviour at field sites and reporting procedures. In Meyers' survey, for example, conducted at the behest of the Southeastern Archaeological Conference (SEAC), more than two-thirds of the almost 600 respondents said that they had experienced sexual harassment at a field site. ►

SOCIAL BEHAVIOUR

Indecent advances

Surveys of sexual harassment and assault during field research and on campus reveal a hitherto secret problem.

BY VIRGINIA GEWIN

Archaeologist Maureen Meyers never spoke up about the sexual harassment she endured from male colleagues and superiors at field sites and elsewhere during her 20-year career. She rebuffed a male colleague's propositions, leading to his retaliatory dismissal of her diabetes-related diet and medication requirements on a later field excursion. A male superior once forced her to walk ahead of him at a field site "to find the electric fences first" and made her listen to his lurid stories.

Meyers — now at the University of Mississippi in Oxford — considered abandoning her

career several times. To help herself deal with what had happened, she recorded all her experiences in her diary. Last autumn, in response to the SAFE study documenting sexual harassment and assault in the field (K. B. H. Clancy *et al.* *PLoS ONE* 9, e102172; 2014), Meyers organized a survey of archaeologists in the southeastern United States and learned the extent and severity of similar behaviour today. The responses to both surveys confirmed that she had been far from alone. And she counts herself lucky. "I was never physically assaulted," she says.

Many women who work in scientific disciplines involving remote fieldwork have

► Some 13% said that the harassment directly affected their careers, forcing them to change field sites, jobs or research interests, or to leave the discipline altogether.

And more than one-quarter said that the harassment had stymied their careers in other ways, such as causing them to question their abilities and their future in the discipline, fearing for their safety at field sites and being reluctant to conduct field research.

Pat Knezek, now a science administrator, worked as an astronomer for more than 20 years. When she was a junior researcher, magazine centrefolds were blatantly displayed at some US observatories, she says. That is not acceptable now, but more subtle predatory behaviour, such as invitations to junior researchers to discuss career prospects one-on-one after hours, continues and is harder to fight because it is less overt, she says.

Harassment at field sites is not the only problem. A slew of high-profile cases at US

universities in the past few years has prompted federal directives that instruct universities to better respond to — and prevent — sexual assault on campus. As a result, there has been more attention to Title IX, the US federal law that prohibits sex discrimination (including sexual harassment or assault) on campus. More universities are forming offices that address the response to and prevention of sexual harassment and violence, says Joan Slavin, director of Northwestern University's Office of Sexual Harassment Prevention in Evanston, Illinois. And some professional scientific societies are creating guidelines and policies to deter predatory behaviour and to provide resources for female researchers who have been harassed or assaulted.

Most other countries have yet to catch up with the United States. Nicole Westmarland, co-director of the Centre for Research into Violence and Abuse at Durham University, UK, says that British efforts to stop harassment of women in academia are not at US levels. A letter that she co-authored in January in *The Telegraph* newspaper called for more clear-cut university policies on how to respond to sexual-assault complaints, and in an article in the newspaper a few days later she described UK universities' sexual-assault policies as "archaic". She says that university responses to sexual assault are most commonly described as inaction, either because sexual assault is a police matter beyond their remit or because they do not take disciplinary actions against the aggressor. Some Nordic universities are training employees to deal with sexual-harassment concerns, but many think that the issue is also under-studied there.

FIGHTING HARASSMENT

Some young researchers are getting creative. Upset by accounts of harassment at poster sessions or of fear of walking back to a hotel or campus after a conference party, two female postdocs have created a 'buddy system' called Astronomy Allies that they unveiled in January at an American Astronomical Society (AAS) meeting in Seattle, Washington. Participants volunteer to form a 'safe zone' — as a buffer, bystander or advocate — for AAS members who feel threatened or unsafe. In that case they can text or call an 'ally' for an escort.

Astronomy Allies has the support of the AAS Committee on the Status of Women in Astronomy. "We feel like we are breaking new ground by trying to make the community look at this issue — and find ways to protect the victims without putting ourselves in a position where we could get sued," says Joan Schmelz, committee chair and an astronomer at the University of Memphis in Tennessee, who herself was sexually harassed early in her career. For legal reasons, Schmelz can disclose no details, but she wrote in a 2011 blogpost that it involved both a sexual component and — as typifies such behaviour — an abuse of power.



Evidence of sexual harassment can help prevent the abuse, says anthropologist Kate Clancy.

"At the time, I was a young astronomer in a vulnerable position and the harasser was my supervisor," she wrote. She recalled that he told her that he wanted to put her in his pocket and take her out when it was convenient.

After that blogpost she became a go-to confidante for women grappling with similar experiences. Having heard many stories, she finds it difficult to offer general advice. "Rarely do I recommend filing an official report as a first action because it can affect your standing in your department and community — especially if you don't have a smoking-gun piece of evidence," she says. And publicly naming the harasser carries a risk of getting sued for defamation of character (see 'Anatomy of a sexual-harassment report'). Instead, she advises women to write down everything — the time, location, nature and details of an incident — and to save all evidence, including e-mails, texts and voice-mail messages. Then, she says, the victim should talk to someone they trust about the pros and cons of filing a report against the harasser (see 'What to do').

But she and others agree that predatory behaviour will stop only when the community decides that harassment and assault will not be tolerated and creates mechanisms that address them and make perpetrators accountable.

The issue has garnered less attention in scientific fields with greater gender parity, such as ecology. But Jacquelyn Gill, a palaeoecologist at the University of Maine in Orono, and Joshua Drew, a conservation ecologist at Columbia University in New York, will tackle the issue with a panel discussion at the August meeting of the Ecological Society of America in Baltimore, Maryland. "We want to start important conversations — for example, sharing university reporting procedures with students in their own labs, departments and institutions," says Gill. As a new principal investigator, she feels

BE PREPARED

What to do

Prevention tips

- Find out if there are rumours of sexual harassers in your field
- Familiarize yourself with the university's sexual-harassment policies and reporting protocols
- Discuss living arrangements and job expectations with your supervisor before going into the field
- Know whom to report sexual harassment concerns to while in the field
- Speak up if you see others in an uncomfortable, unsafe situation

How to respond to harassment

- Save every correspondence (text, e-mail, voice mail, tweet) from the harasser
- Have witnesses to the harassment document what they saw
- Confide in a trusted colleague or friend and discuss the pros and cons of filing a report
- Contact your university's ombudsperson, Title IX representative, Human Resources Office, or Equal Employment Opportunity Office (any of these could trigger an investigation, however)
- Ask about university resources, including confidential counselling, no-contact orders issued by the university, workplace accommodations (schedule changes, office location changes, leave of absence), and referrals to advocates for legal, medical or housing assistance. **V.G.**

CASE STUDY

Anatomy of a sexual-harassment report

Sally Smith (not her real name) was a PhD student working at a remote marine field station in North America when a field-research supervisor propositioned her. When she turned down his advances, he threatened to bar her access to the gear and equipment that she needed to complete her fellowship research. Then came the domineering body language and verbal abuse.

She told the field-station manager, but he did nothing. Well-meaning senior women colleagues advised her not to draw attention to herself. Confused and vulnerable, she was unsure what to do, and ended up forgoing her fellowship, unwilling to put herself under his control for a second field season. But she received an alternative source of funding and continued her field work in the area — which led to more frightening encounters with him.

Smith wrote down every detail: dates,

times and how the encounters made her feel. After her second field season, she took those records, along with every e-mail he had sent, to the ombudsman's office at her university. After she reported the harassment to the university's human-resources department, the perpetrator threatened to sue her for defamation. He ultimately lost his job, but later secured a post elsewhere, and Smith learned that he had continued to harass women.

"Unfortunately, speaking out is not always good for one's career, but it was worth the risk for me," she says. Now an assistant professor at a major university, Smith makes sure that her graduate students are prepared for safe, productive field experiences and know how to get help should they need it. That includes contacting her or the university ombudsman's office if they have intimidating encounters. **V.G.**

responsible for her graduate students. "We need to create a culture where incidents are rare and reporting is easy," she says.

CULTURAL SHIFT

The SAFE study is already starting to drive change. "While there have been anecdotes and whispers about harassment at field sites, scientists are trained to seek evidence in a methodical, quantitative way to confirm the presence of a problem," says Kate Clancy, a co-author of the SAFE paper and an anthropologist at the University of Illinois at Urbana-Champaign. "We gave them the data."

And SEAC past president Tristram Kidder, an anthropologist at Washington University in St Louis, Missouri, is helping to craft clear guidelines on professional field conduct and expectations as well as on detailed harassment-reporting procedures. They will be published this year. Other organizations in Europe and elsewhere are conducting discipline-based surveys in biology, astronomy, ecology and anthropology.

Some organizations, among them the American Geophysical Union, have already created a policy. The Association of American Geographers will draft guidelines for preventing and reporting harassment at its meeting in April, and the American Anthropological Association last year issued a 'zero tolerance' stance on sexual harassment and is launching an initiative to help members prevent it or deal with it when it happens.

Some groups are raising awareness through seminars. The online Earth Science Women's Network, an international peer-mentoring

association, last autumn gave a presentation on field safety at the University of Wisconsin, Madison. "We talked about setting boundaries and expectations — about everything from living arrangements to working hours — before going into the field," says Erika Marin-Spiotta, a geographer at the university.

Others are working to change the culture of tacit acceptance nearer to home. Anthropologist Bob Muckle at Capilano University in Vancouver, Canada, says that he was stunned by the SAFE results. "I thought the stuff I had seen happen to female colleagues in the 1970s and 1980s had disappeared," he says. He has instituted a zero-tolerance policy on sexual harassment for the summer field school he directs, and gives students handouts that define harassment and provide contacts and phone numbers for reporting any such event.

Still, it will take more than lone actions or a few guidelines to effect a true cultural shift, say those who study the problem. Real change will come when the international scientific community decides, top-down and bottom-up, what constitutes acceptable behaviour. "Few things are simply a women's issue; this is a community issue," says SAFE co-author Julienne Rutherford, a biological anthropologist at the University of Illinois at Chicago. "Senior people in the hierarchy are more likely to be perpetrators. They are also the people who have the power to establish appropriate behaviour and what is acceptable in our work culture." ■

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SOFTWARE

Career detective

Software that can track researchers' career progress is under development. It will automate the collection of data required to learn how and where young scientists get jobs. A team used data collected by the tool and by manual analysis to show that higher research output correlates with scientists' ability to move voluntarily between posts (A. Geuna *et al. Res. Policy* <http://doi.org/2hz>; 2015). Using researchers' names, the tool can mine web pages and CVs to identify affiliations and research productivity. The software could be used to reconstruct the career paths of researchers and to assess which factors are correlated with staying in academic positions or moving to another sector, says lead author Aldo Geuna, an economist at the University of Turin in Italy. The tool is openly available, he says, and developers and users are working to improve its algorithms.

EMPLOYMENT

Job dissatisfaction lasts

Women who dislike their job come to hate it more over time, even if they earn more, whereas men's job dissatisfaction stays much the same regardless of pay, according to a UK survey of 2,800 employees, which included scientists. Conversely, women and men who like their job enjoy it more as time passes. Kausik Chaudhuri at the University of Leeds, UK, a co-author of the study — called 'Job Satisfaction, Age and Tenure' — says the findings suggest that it does not become easier to adapt to a job that is not a good fit from the outset. Early-career researchers should therefore choose carefully in today's economic climate.

US RESEARCH FUNDING

Call to smooth bumps

Biomedical research advocates in the United States are calling for policy changes to ease boom-and-bust research-support cycles at the US National Institutes of Health (NIH). In a joint report, United for Medical Research, a research advocacy group, and the Information Technology & Innovation Foundation, a think tank in Washington DC, outline strategies to make the NIH budget more certain from year to year. These include apportioning federal funds for several years at a time and stipulating that any unspent funds can be rolled over to the next fiscal year.