ted diseases—and deemed at high risk of monkeypox—will get MVA in the next 2 months. Jade Ghosn of Bichat Hospital, who runs the study, hopes to have all participants vaccinated by the end of September and plans to compare infection rates before and after vaccination.

Another option is a "test-negative" design, in which researchers look at people who seek testing for monkeypox and compare the percentages of people who were vaccinated among those who test positive and negative. This is "probably the strongest nonrandomized approach to measuring vaccine efficacy," says Michael Marks, an epidemiologist at the London School of Hygiene & Tropical Medicine who is planning a vaccine trial soon with colleagues in Spain.

The test-negative setup requires good linkage between vaccination and testing data. "If we can solve that issue we may use such a design in our study," Marks says. The Canadian province of Ontario is going ahead with a similar design, says Jeff Kwong of the University of Toronto. The drawback is that testing and vaccination data alone can't answer many other questions, such as how immunity develops over time or whether disease severity is different among the vaccinated and the unvaccinated; that requires additional studies.

The U.S. National Institute of Allergy and Infectious Diseases (NIAID) does plan a randomized trial, aimed at finding out if the vaccine supply can be stretched by giving people much smaller doses. Participants will either get two full doses or two one-fifth doses 4 weeks apart; a third arm may be added to test one-tenth of the normal dose, says NIAID's John Beigel, who is involved in designing the study. The lower doses will be injected into the skin, which is known to cause a more vigorous immune response than the standard subcuteanous shot. But the study, expected to start in September, will only test whether fractional doses trigger a similar reaction as the full dose; it won't measure vaccine efficacy directly.

One strategy not tested in the trial, even though it is being used, is giving just one full dose. Available data suggest that regimen is inferior to two full doses, Beigel says: "We don't think it's scientifically supported."

With so many unanswered questions it's hard to provide good vaccine information to those at risk, says Will Nutland, a U.K community organizer who runs an organization for MSM sexual health. That should not deter people from seeking the shots, he says: "I think most people understand ... that it is better to receive some level of protection than no protection at all." ■

PHOTO: ARNOMASSEE/ISTOCK.COM

WORKFORCE

Harassment researchers decry proposed reporting rule

U.S. Title IX law update requiring mandatory reporting of sexual misconduct would cause harm, they say

By **Katie Langin**

When Allison Cipriano read the U.S. Department of Education's recently proposed amendments to Title IX, the federal statute prohibiting sexual discrimination at educational institutions that receive federal funding, she was "quickly disappointed." The 700-page document includes many rule changes she wanted to see, including protections for sexual minorities. But Cipriano, a Ph.D. student in psychology at the University of Nebraska, Lincoln, who studies sexual misconduct investigations in academia, and others are dismayed by one set of changes. They would compel most university employees to be "mandatory reporters"—required to notify their institution's Title IX office of any alleged sexual misconduct involving students they become aware of, regardless of whether the student wants them to.

Researchers who study such policies have spoken out against them, saying they retraumatize targets of sexual misconduct and reduce their ability to seek the support they need. Mandatory reporting, which proponents argue helps universities unearth and address misconduct, is already common at U.S. universities; a 2018 study found 88% of institutions required most or all employees to serve as mandatory reporters. But the government's proposed rule changes—open for comment until 12 September—would make the requirement universal, blocking efforts to try other approaches.

"I was expecting all the changes to be good, so I'm caught off guard ... by what I perceive to be a potential—if it doesn't get fixed—disaster," says Jennifer Freyd, a trauma researcher and professor emerit at the University of Oregon. She fears the new mandatory reporting rules will be particularly harmful for graduate students, who are often highly dependent on faculty members and are more vulnerable than undergraduates to "career-killing" retaliation. "If ... a grad student can speak privately with a supportive faculty member in their department about how to navigate the bind they are in, it can save a career," she says.

Past regulations have required universities to designate some employees as mandatory reporters but didn't define who those employees should be. The new regulations, in contrast, would require any university employee who "has the authority to institute corrective measures" or the "responsibility for administrative leadership, teaching, or advising" to serve as a mandatory reporter. That definition encompasses most faculty members, says Lilia Cortina, a professor at the University of Michigan, Ann Arbor, who studies gender and coauthored the National Academies of Sciences, Engineering, and Medicine's 2018 sexual harassment report.

"In the report, we talked about how problematic that is," Cortina says of broad mandatory reporting policies. "[There's]

Faculty members could be required to report information shared with them in confidence.

research showing that when you take control away from victims, that's actually associated with an increase in psychological distress." The requirements "essentially amount to nonconsensual reporting [of] their traumatic or humiliating or otherwise extremely distressing experience."

In a statement to *Science*, a Department of Education spokesperson wrote that the updates were developed "with the aim of ensuring full protection under Title IX for students, employees, and others and to end all forms of sex discrimination." They declined to comment about why universal mandatory reporting is necessary, but the proposed regulations note that students "may be less capable of self-advocacy" and

may share Title IX violations with those who fall under the proposed mandatory reporter definition "with the expectation that doing so would obligate the recipient to act."

But targets of sexual harassment may go to trusted faculty members for reasons other than to trigger a formal investigation, as Cipriano found when she interviewed graduate students about their experiences with mandatory reporting. For instance, one student opened up to her adviser because she wanted to let him know she was seeking mental health services, Cipriano and her colleagues report in a preprint posted last month. "I had to do it on work time, so I felt like he deserved to know why I wasn't at my desk," the student said.

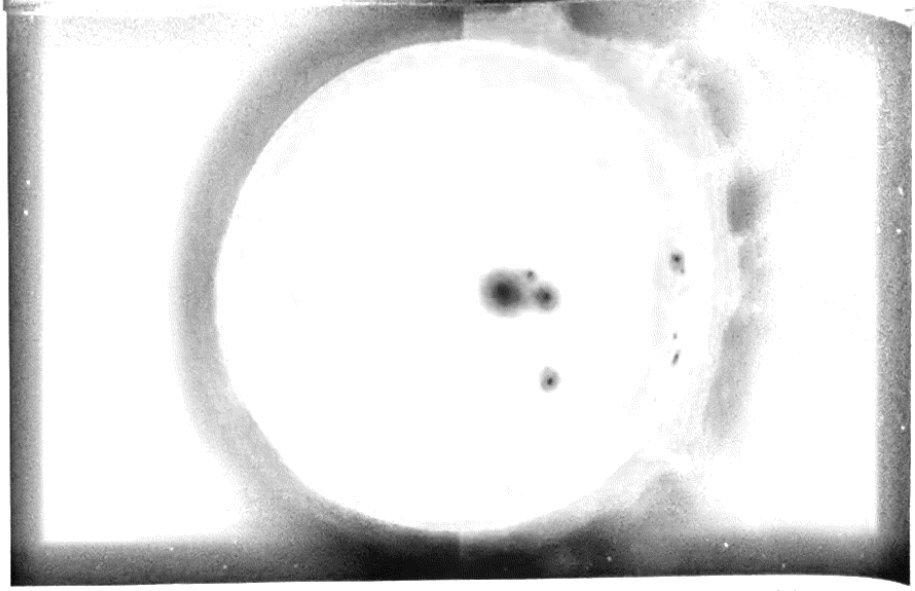
Most of the students in Cipriano's study weren't aware their institution even had a mandatory reporting policy. "I was under the impression that talking to my adviser was a safe communication," one said. Another told Cipriano she freaked out after learning a report would be filed. "When you're in the midst of trauma ... you're not going to be thinking about the ins and outs of university policy," Cipriano says. "Students are not going to see their professors as a de facto arm of the Title IX office."

At a listening session the Department of Education held last year to help guide the development of the new regulations, Cipriano shared research she and others have done on mandatory reporting—which made it all the more frustrating when she read the resulting amendments. "It really does feel like a bit of a slap in the face," she says.

Others, including Brett Sokolow, a lawyer who serves as president of the Association of Title IX Administrators, see the issue differently. "What most research on mandated reporting misses is that mandated reporting largely does not result in 'forced prosecutions' but instead results in outreach, sharing of resources, and discussion of options. That's not really taking agency away from survivors," he says.

The proposed regulations will block efforts to test other approaches. The University of Oregon, for instance, has a "mandatory supporter" policy, which requires most employees—including most faculty members—to tell students how they could report sexual misconduct and then let the student decide how to move forward. (Those in higher administrative positions, such as deans and department heads, are mandatory reporters.)

"We need some room for experimentation," says Freyd, who helped develop the University of Oregon policy. "I don't think we're at a point yet where we have enough information for the federal government to dictate to institutions everything about how they should handle Title IX issues." ■



Sunspots wax and wane with the 11-year solar cycle, as shown in an illustration of minimum (left) and maximum activity, but they mostly vanished for decades soon after telescopes emerged.

ASTROPHYSICS

Star's midlife crisis illuminates our Sun's history—and future

Long magnetic lull mimics Maunder Minimum, when sunspots largely disappeared 400 years ago

By **Zack Savitsky**

Soon after European astronomers developed the first telescopes at the start of the 17th century, they observed dark spots speckling the Sun's surface. They also handed their modern successors a mystery. From about 1645 to 1715, the spots, now known to be indicators of solar activity, all but disappeared. Gathering sunspot counts and other historical observations, astronomer John Eddy concluded nearly 50 years ago that the Sun had essentially taken a 70-year nap, which he called the Maunder Minimum after an astronomer couple who had previously studied it (*Science*, 18 June 1976, p. 1189).

Now, it appears the Sun is not the only star that takes long naps. By building a decades-long record of observations of a few dozen stars at specific wavelengths that trace stellar activity, a team of astronomers has identified another star going through its own Maunder Minimum period. "I am more convinced this is a Maunder Minimum star than anything else I've seen," says Jennifer van Saders, an astronomer at the University of Hawaii, Manoa, who was not involved in the discovery.

The finding, reported in a preprint last month on arXiv, could help explain what triggered the Sun's strange behavior 400 years ago and suggests more such episodes are likely. "This is the way to study the past and future of the Sun," van Saders says. She adds the discovery supports a theory she and colleagues have advanced: that such events are an occasional symptom of a critical transition in the magnetic field of Sun-like stars about halfway through their lifetime—a midlife crisis of sorts. Some astronomers speculate that the Sun's transition helped favor the emergence of life on Earth, and that searching for stars in a similar stage could help identify other solar systems conducive to complex life.

Scientists have known for decades that our Sun's activity surges and ebbs on a roughly 11-year cycle, which corresponds to how often its magnetic poles flip their orientation. During a solar maximum, sunspots proliferate, marking weak points in the magnetic field where plasma from the Sun's atmosphere can lash out in violent loops. Astronomers have spotted young Sun-like stars with similar cycles, and older ones that have totally stable activity. But no one had spotted a cycling star suddenly turning flat.

In 2018, as part of undergraduate research at Pennsylvania State University, University Park, Anna Baum set out to combine observations of the telltale wavelengths from 59 stars taken by the Mount Wilson Observatory and the W. M. Keck Observatory to produce a 50-year chronology of star evolution. During a 7-year gap in data while Keck was upgrading a detector, one star appeared to show a drastic shift. Its activity went from cycling over a