

the rate in Spain or Canada. Nigeria tests one out of every 50,000 people per day. Even many people who die from COVID-19 may not get a proper diagnosis. But in that case, you would still expect an overall rise in mortality, which Kenya has not seen, says pathologist Anne Barasa of the University of Nairobi. Uyoga cautions that the pandemic has hamstrung Kenya's mortality surveillance system, however.

Marina Pollán of the Carlos III Health Institute in Madrid, who led Spain's antibody survey, says Africa's youthfulness may protect it. Spain's median age is 45; in Kenya and Malawi, it's 20 and 18, respectively. Young people around the world are far less likely to get severely ill or die from the virus. And the population in Kenya's cities, where the pandemic first took hold, skews even younger than the country as a whole, says Thumbi Mwangi, an epidemiologist at the University of Nairobi.

Jambo is exploring the hypothesis that Africans have had more exposure to other coronaviruses that cause little more than colds in humans, which may provide some defense against COVID-19. Another possibility is that regular exposure to malaria or other infectious diseases could prime the immune system to fight new pathogens, including SARS-CoV-2, Boum adds. Barasa, on the other hand, suspects genetic factors protect the Kenyan population from severe disease.

More antibody surveys may help fill out the picture. A French-funded study will test thousands for antibodies in Guinea, Senegal, Benin, Ghana, Cameroon, and the Democratic Republic of the Congo. And 13 labs in 11 African countries are participating in a global SARS-CoV-2 antibody survey coordinated by the World Health Organization.

If tens of millions of Africans have already been infected, that raises the question of whether the continent should try for "herd immunity" without a vaccine, Boum says—the controversial idea of letting the virus run its course to allow the population to become immune, perhaps while shielding the most vulnerable. That might be preferable over control measures that cripple economies and could harm public health more in the long run.

"Maybe Africa can afford it," given the apparent low death rate, he says. But Glenda Gray, president of the South African Medical Research Council, says it could be dangerous to base COVID-19 policies on antibody surveys. It's not at all clear whether antibodies actually confer immunity, and if so, how long it lasts, Gray notes—in which case, she asks, "What do these numbers really tell us?" ■

Linda Nordling is a journalist in Cape Town, South Africa.

CAREERS

Fed-up archaeologists aim to fix field schools' party culture

Drinking and harassment spur experiments, including local projects and student stipends, for core training course

By **Lizzie Wade**

Each year, archaeologist Carol Colaninno guides undergraduates through a consequential choice: Where should they go to field school? Every budding U.S. archaeologist must attend one to learn hands-on skills such as excavation, and to have any hope of landing a job or entering grad school for archaeology.

The undergrads can choose from hundreds of field schools, many in remote areas. But Colaninno, who teaches at Southern Illinois University, Edwardsville, knows from former students and information passed privately among others in her whisper network that some field schools have a reputation for faculty who sexually harass with impunity. Many schools are also famed for heavy drinking.

Traditional field schools foster "the archaeology cowboy mentality ... working really hard during the day but playing really hard at night—and drinking a ton," says Katrina Eichner, an archaeologist at the University of Idaho. If directors of these field schools encourage that atmosphere, she adds, "it devolves into a frat party." Over time, that cowboy culture gets perpetuated across academic generations.

Now, Colaninno, Eichner, and other archaeologists are trying to change the script. With the help of a National Science Foundation (NSF) grant, Colaninno is studying, and plans to implement, best practices for preventing sexual harassment at field schools. And some archaeologists, aware that remote summer courses can cost thousands of dollars and keep students of modest means out of the field altogether, are rethinking the whole model: They teach field skills at local sites during the regular semester. "We don't have to create the same environment that we didn't want to be in when we were students," says Jane Eva Baxter, an archaeologist at DePaul University and the author of a respected guide for field school instructors.

Although field schools are on hold this year because of the COVID-19 pandemic,

researchers say it's more important than ever for academic archaeologists to take the lead in making such schools safe. New regulations under Title IX, the U.S. federal law governing sexual harassment in higher education, no longer require universities to investigate incidents that happen in their programs abroad.

Although anecdotes of sexual harassment in field schools are plentiful, data on such episodes are limited. But studies show they are common in archaeology, as they are in other field-based disciplines. In a survey by the Southeastern Archaeological Conference, 68% of 244 respondents of all genders

reported inappropriate remarks in the field; another 13% reported unwanted sexual contact. Remote sites and field schools have been considered "an alternative space where different rules applied," Baxter says.

The current culture at such sites and schools may drive some students out of the profession, according to a paper published last month in *American Anthropologist*. An atmosphere of informality, including frequent drinking, undermined expectations of professionalism and excluded people who weren't willing or able to navigate the unspoken rules, according to the paper's analysis of archaeological field sites and an anonymous field school in Chile. "It weeds out people," says author Mary Leighton, an anthropologist at the University of Michigan, Ann Arbor. "The people who love it, stay [in archaeology]. And the people who don't like it leave."

To create a more welcoming and professional culture, Colaninno's team recently offered recommendations from the first phase of its research. The suggestions include: Create an environment that doesn't trivialize harassment, offer multiple ways to report harassment other than going to the field director, and reflect weekly on what's working and what isn't. The team, which published its guidance in May in *Advances in Archaeological Practice*, plans to implement those policies at eight U.S. field

"The archaeology cowboy mentality ... devolves into a frat party."

Katrina Eichner,
University of Idaho

schools as part of its NSF-funded project, and study outcomes over 2 years.

In April, a study in *Advances in Archaeological Practice* addressed another way field schools weed out students: cost. Among more than 200 field schools, the average cost for 4 weeks was just over \$4000, not including airfare, the study found. Field school also interferes with summer jobs.

Archaeologists need to “think of ways to train students that are more in line with the realities of their lives,” Baxter says. Her department no longer requires anthropology majors to attend a summer field school. Instead, they take a field methods course that runs 1 day per week during the school year.

Similarly, for three recent semesters, Sarah Rowe, an archaeologist at the University of Texas, Rio Grande Valley, ran a class that trained students in archaeological survey, data collection, and community engagement as they investigated their county’s public cemetery. She also runs a field school in Ecuador, which offers several weeks of immersive training in excavation. “We need to focus on a constellation of options” for training students, she says.

Well-managed, immersive field schools can build powerful and lasting bonds, says Sara Gonzalez, an archaeologist at the University of Washington, Seattle. She co-directs a field school with the Historic Preservation Office of the Confederated Tribes of Grand Ronde Community of Oregon on their reservation. “It’s an opportunity for students to learn directly from the tribe how to do archaeology.” The school prohibits alcohol and emphasizes inclusivity and respect. Each summer begins with discussions of what students are most excited about—and

most afraid of. Together, the team comes up with principles to “minimize those fears and maximize that excitement,” Gonzalez says.

To boost access to archaeology, Eichner found grant funding so that students at the Texas field school she ran paid only for room and board. She also surveyed students so she could accommodate diverse gender identities, disabilities, and more. She estimates that 20% to 30% of students belonged to the LGBTQ+ community. “This is not extra work,” she says. “This is the work.”

Justin Dunnivant of Vanderbilt University, co-founder of the Society of Black Archaeologists, is particularly aware of how field schools shape the culture of his discipline. The society interviewed established Black archaeologists and found that attending field school together had helped them forge a strong, supportive community in a majority white discipline. (Just 0.3% of members of the Society for American Archaeology are Black, according to a 2015 survey.) “If we’re going to seriously build out a pipeline of Black archaeologists, we need to have a field school that is racially diverse and supportive,” Dunnivant says.

He keeps that in mind at the field school he co-directs, where students help study the lives of enslaved Africans on a former plantation on St. Croix in the U.S. Virgin Islands (*Science*, 8 November 2019, p. 678). A grant covers the costs of students from historically Black colleges and universities and pays them a stipend. The team could excavate faster if it focused less on training, Dunnivant says. But sprinting for results is not his goal. “If we’re not actually building capacity for people to take over in these spaces and beyond, it’s going to be a very short-term gain.” ■

ECOLOGY

Don’t crush that ant—it could plant a wildflower

New findings show how ants choose and protect the seeds they disperse

By Elizabeth Pennisi

Tilliums, bloodroot, violets—many wildflowers of spring in eastern North America bloom thanks to ants. The tiny six-legged gardeners have partnered with those plants as well as about 11,000 others to disperse their seeds. The plants, in turn, “pay” for the service by attaching a calorie-laden appendage to each seed, much like fleshy fruits reward birds and mammals that discard seeds or poop them out. But there’s more to the ant-seed relationship than that exchange, researchers reported last week at the annual meeting of the Ecological Society of America, which was held online.

Far from just transporting the seeds, the ants are active gardeners, preferring some seeds over others and possibly keeping their charges safe from disease. “It’s becoming clear that it’s not a simple two-way interaction,” says Douglas Levey, an ecologist at the National Science Foundation.

The importance of this partnership is coming into focus as well. In forests disturbed by human activity, where ants can be scarce, seeds may not find their way to fertile ground, and ecosystems can suffer. “If ants are lost, then there’s a real chance that we will lose plants, as well as the other species that depend upon ants and plants,” says Judith Bronstein, an evolutionary ecologist at the University of Arizona.

Many ants eat seeds, but in deciduous forests in Europe and North America, Australian dry woodlands, and South African shrublands called fynbos, a few dozen ant species spare the seeds in favor of something better. Certain plants attach a nutritive glob called an elaiosome to their seed coats, which serves as lunch for the ants’ young and gives ants a handle on seeds that can be bigger than their head. Until now, researchers assumed the ants simply carry



Students and instructors at an archaeological field school in St. Croix forge ties for the future as they learn.

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