

News in focus

in both sets of cores as the first layer of turbidites. Then, at some later point, the northern San Andreas also shook, causing the second turbidite layer to form.

“This story is pretty convincing,” says Jason Patton, an engineering geologist with the California Geological Survey in Sacramento who was a co-author on the 2008 paper. “Cascadia turbidites are covered by San Andreas turbidites, so the Cascadia turbidites were deposited first.”

Others are reserving judgement. Turbidites show that the ground shook at some point in the past, but it’s difficult to tell exactly when or where those quakes happened, says Joan Gomberg, a seismologist at the US

Geological Survey in Seattle, Washington. “All this uncertainty leaves multiple, equally plausible interpretations on the table – most of which are not sensational,” she says.

Ross Stein, a seismologist with the earthquake-preparedness firm Temblor in Redwood City, California, wants to see detailed modelling of how stress from the Cascadia fault might be transferred to the northern San Andreas. Scientists generally agree that a large earthquake can sometimes trigger another on a nearby fault. But it’s not clear whether that might happen between southern Cascadia and the northern San Andreas, Stein says.

This week at the conference, Goldfinger says, “I’m just going to lay out the case.”

detentions and other human-rights violations in the province. The Chinese government says it is conducting a re-education campaign to quell what it calls a terrorist movement.

“We are very concerned about research which involves consent from vulnerable populations,” says a spokesperson from Springer Nature (*Nature’s* news team is editorially independent of its publisher).

The publishers’ announcements, which *The New York Times* reported on 4 December, follow rising concerns about the publication of such work. Last week, Yves Moreau, a computational biologist at the Catholic University of Leuven in Belgium, wrote an opinion article in *Nature* warning of the dangers that accompany the proliferation of DNA profiling and calling for all unethical work in biometric research to be retracted.

Springer Nature said that it would add notes of concern about consent to two papers^{1,2} that reported studies using DNA from hundreds of Uyghurs to predict height or facial shape. One, published in *Human Genetics*², was highlighted in a separate *New York Times* article that described worries that the participants hadn’t given informed consent.

Both papers state that volunteers gave consent, and that the studies were approved by an ethics committee from the Institute of Forensic Science, which is affiliated with China’s police and security authority.

“We are ordinary forensic scientists who carry out forensic research following the scientific research ethics norms,” said Caixia Li of the Institute of Forensic Science in Beijing, a co-author of both papers^{2,3}, in an e-mail to *Nature’s* news team. He said that “all individuals provided written informed consent”.

Moreau says that it’s hard to see how Uyghur peoples could give free, informed consent to DNA or facial-recognition work – given that so many people in that ethnic group have been sent to internment camps (which China calls education facilities).

Springer Nature has identified a number of other ‘papers of concern’ published by its journals, the spokesperson adds, which are being investigated. And it has updated its guidance about the need to gain explicit and informed consent in studies that involve clinical, biomedical or biometric data from people.

Moreau says: “Expressions of concerns are a welcome first step, but this is only meaningful if it is the start of a large-scale ethical review of all forensic population-genetic research on Chinese populations and of all biometric research.”

Wiley, meanwhile, said it was opening a formal investigation into an article that described an analysis of a database of photos of Uyghur, Tibetan and Korean people using various facial-recognition algorithms⁴. In September, four researchers, including Moreau and Jack Poulson of the advocacy group Tech Inquiry

PUBLISHERS REVIEW RESEARCH ON CHINESE MINORITY GROUPS

Springer Nature and Wiley have concerns about the ethics of papers on genetics and facial recognition.

By Richard Van Noorden & Davide Castelvecchi

Two science publishers are reviewing the ethics of research papers in which scientists backed by China’s government used DNA or facial-recognition technology to study minority groups in the country, such as the predominantly

Muslim Uyghur population.

Springer Nature (which publishes *Nature*) and Wiley want to check that the study participants gave informed consent, after researchers and journalists raised concerns that the papers were connected to China’s heavy surveillance operations in the northwestern province of Xinjiang. China has attracted international condemnation – and US sanctions – for mass



Officers patrol in China’s Xinjiang region, where there have been mass detentions.

in Toronto, Canada, had asked Wiley to retract the paper because of the potential for abuse of facial-recognition technology, and the “racial overtones of the authors’ language”. One of the paper’s co-authors is affiliated with Curtin University in Perth, Australia, which this month also requested that Wiley review the paper.

A spokesperson for Wiley said that the publisher was now re-evaluating the paper, following an initial review that found the journal had followed the existing guidelines.

In their September letter, the researchers noted that, according to guidelines laid down by the Committee on Publication Ethics, a London-based publisher-advisory body, papers can be rejected on ethical grounds even if they come with approvals from an ethics committee (as the Wiley paper did). The guidelines also say that journals should take special care when the research is conducted on “vulnerable groups”, which Springer Nature has emphasized in its latest editorial policies.

Widespread concerns

There are numerous papers that report the use of biometric technology to study Uyghur and other minority ethnic groups in China. Moreau wrote in his opinion article that he had identified 40 articles co-authored by members of the Chinese police in 3 leading forensic-genetics journals – published by Springer Nature and by Elsevier – that describe the DNA profiling of Tibetans and people from Muslim minorities. A spokesperson for Elsevier said that the company is producing more comprehensive guidelines for the publication of genetic data, but that it was “unable to control the potential misuse of population data articles” by third parties after publication.

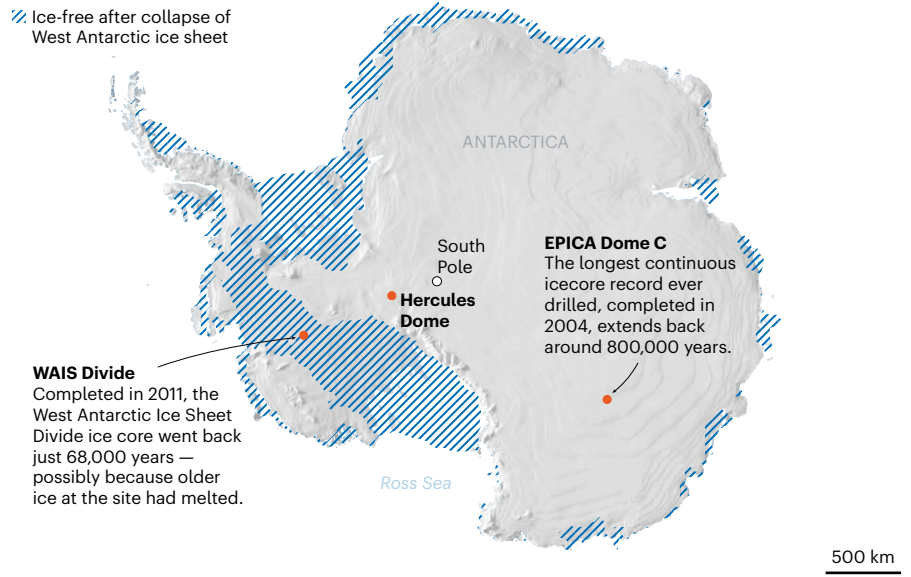
Springer Nature also said that it would tighten its oversight of the academic-conference proceedings that it publishes. Journalists have previously raised concerns about numerous conference papers that describe studying Uyghur groups, including manuscripts from a biometrics conference held in Xinjiang in 2018 that Springer Nature published as a book⁵.

The Institute of Electrical and Electronics Engineers (IEEE) has also published conference proceedings describing facial-recognition analyses in Uyghur populations (see, for example, refs 6 and 7). “IEEE is committed to reviewing our policies to ensure more consistent application of this process across the full range of IEEE publications,” IEEE president and chief executive José Moura wrote in an e-mail.

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2. Li, Y. et al. *Hum. Genet.* **138**, 681–689 (2019).
3. Jing, X. et al. *Int. J. Legal Med.* **133**, 1667–1679 (2019).
4. Wang, C., Zhang, Q., Liu, W., Liu, Y. & Miao, L. *WIREs Data Mining Knowl. Discov.* **9**, e1278 (2019).
5. Zhou, J. et al. (eds) *Biometric Recognition. CCBP 2018. Lecture Notes in Computer Science* (Springer, 2018).
6. Zuo, H., Wang, L. & Qin, J. in *2017 Int. Conf. Machine Vis. Inf. Technol. (CMVIT)* 7–11 (2017).
7. Duan, X. et al. in *2010 2nd Int. Conf. Adv. Computer Control* 125–130 (2010).

CLIMATE CLUES

The ice at Hercules Dome could help scientists confirm whether the West Antarctic ice sheet collapsed 130,000 years ago. That could help them assess the threat of a similar collapse in the coming centuries.



THE HUNT FOR ICE THAT WITNESSED WEST ANTARCTICA’S COLLAPSE

Ice at Hercules Dome site could reveal how susceptible the region is to warming.

By Jeff Tollefson

Sometime this month, scientists in Antarctica plan to start up their snowmobiles and begin radar surveys of a thick ridge of ice called Hercules Dome. The dome – which sits 400 kilometres from the South Pole, between East and West Antarctica – could provide crucial clues to the future of the continent’s vast ice sheet.

The surveys are intended to guide the drilling of the United States’ next deep ice core. Glaciologists hope to retrieve a detailed climate record of a period 116,000 to 130,000 years ago, when temperatures as little as 1°C warmer than today’s are thought to have driven the collapse of the ice covering West Antarctica.

A better understanding of what happened then could help scientists to predict the behaviour of West Antarctica as climate change intensifies. The pace at which the region’s glaciers are flowing to the sea has increased in recent years, and many scientists fear that rising temperatures have triggered runaway melting. West Antarctica’s ice contains enough water to raise sea levels by more than 3 metres.

“If the West Antarctic ice sheet collapsed, Hercules Dome would basically be waterfront property,” says Eric Steig, a glaciologist at the University of Washington in Seattle who is leading the project. He is hopeful that scientists will be able to see the signal of the region’s long-ago collapse in ice from the dome.

The US National Science Foundation (NSF) has given Steig and his colleagues nearly

“There may well be ice that is two million years old at the bottom. I wouldn’t be surprised.”

US\$630,000 to conduct radar surveys of ice depth and structure across Hercules Dome. That work started in January. The \$1.5-million drilling project could begin as soon as 2022, pending the agency’s approval.

“The Hercules structure will have served as witness to what the atmosphere and what the oceans were doing when the West Antarctic ice sheet collapsed,” says Mary Albert, a glaciologist at Dartmouth College in Hanover, New Hampshire, and head of the US Ice Drilling