PHOTO: MARIO ANZUONI/REUTERS/NEWSCOM

LETTERS

Edited by **Jennifer Sills**

Evaluating fault lines in Aliso Canyon

The Aliso Canyon methane storage field, which has been in use for four decades, is perilously situated across the Santa Susana fault (*1*). However, SoCalGas (the operator of Aliso) and California state regulators began to assess the risks of the location only after the disastrous 2015 methane leak (*2*). Unfortunately, preliminary evaluations have been opaque and incomplete. We must take steps to ensure that the scientists working on Aliso provide the public with a thorough and factual assessment of the fault hazard and risk in a transparent process.

The Santa Susana fault has a high slip-rate, meaning it can potentially cause more frequent, large earthquakes [one estimate is 7.0 to 9.8 mm/year during the past 600 to 700 thousand years (*3*)]. The estimated characteristic earthquake magnitude for the Santa Susana fault—M_w 6.6 to 7.3 (*4*)—would produce 0.3 to 2.8 m of slip (*5*), sufficient to destroy well integrity (*1*). Shearing of well casings by much smaller fault movements has been documented at California's Wilmington oil field (*6*).

The SoCalGas science team published its Storage Risk Management Plan in 2016 (*7*). Subsequent comments by the Geologic Maps Foundation highlighted the plan's failure to address the most basic elements of the Santa Susana fault displacement hazard or to offer a mitigation protocol (*8*). Aliso's long history of failing to disclose hazards, the shortcomings of the SoCalGas Storage Risk Management Plan, and the potential for nondisclosure constraints placed on the team raise a number of questions. It remains unclear whether the team's work is objective and transparent, whether the team will adequately address the safety concerns of Los Angeles County, and whether regulators will require mitigation of this hazard. Despite the uncertainties, in July 2017, regulators determined it was safe to resume methane injections at Aliso (*9*).

On 15 November 2017, a state court in Los Angeles will consider Los Angeles County's request to cease gas injections at Aliso until all necessary testing has been completed (*10*), as required by State Bill 380 (*11*) and the previous orders from California's Division of Oil, Gas, and Geothermal Resources. A state court decision and an independent study, including a review of the SoCalGas work team's results, may be the only paths remaining to obtain the facts about the fault hazard and risk at Aliso.

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Local residents rally for the permanent shutdown of the Aliso Canyon natural gas storage facility near the Porter Ranch neighborhood in Los Angeles, California.

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Blogs cannot separate wheat from chaff

In the News Feature "The stem cell skeptic" (4 August, p. 441), K. Servick discusses Paul Knoepfler's concerns about unregulated stem cell trials, which he enumerates on his blog. Our research was one target of Knoepfler's criticism. Servick summarized Knoepfler's concerns and noted that we (specifically R.K.B.) declined to comment. Knoepfler's accusations that our program includes unregulated clinical trials, overcharges patients, and encourages patients to share personal information are unfounded.

By publishing his opinions on a blog, Knoepfler avoids the accountability inherent in peer-reviewed journal publication. Meanwhile, scientists involved with regulated clinical research must abide by strict rules about what they can say and write. Physicians and clinical researchers, constrained by patient confidentiality and HIPAA rules, recognize the pitfalls and dangers of social media. We must convey to the public that bloggers, even those with university-affiliated sites, may be unaccredited, unvetted, and unsupervised. Institutions should revisit oversight policies for social media activity bearing their imprimatur, as well as restrictions on researchers' responses to claims made online. Allowing unscientific accusations to proliferate and gagging those qualified to refute them undermines science and could lead to harm to patients.

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ONLINE BUZZ

On the origin of preprints

In her News Feature "The preprint dilemma" (29 September, p. 1344), J. Kaiser discusses the growing trend in the life sciences of sharing papers online before submitting them to journals. She compares the process to the comparatively uncontroversial adoption of preprint servers in the physics community. In a related Editorial ("Preprint ecosystems," 29 September, p. 1331), *Science* Editor-in-Chief J. Berg observes that "[t]he ecosystems of science have changed tremendously over the quarter century since [the physics preprint server] arXiv began." In the eLetter excerpted below, a reader adds some context about the start of the arXiv server. Read the full eLetter and add your own at http://science.sciencemag.org/content/357/6358/1344/tab-e-letters.

...Physicists in many subfields used preprints long before the establishment of the Cornell (then Los Alamos) preprint server. When I was a graduate student in particle physics in the 1980s, preprints were well established. When we prepared a manuscript..., we would also prepare a preprint version, which we would then mail to colleagues and...major particle physics research centers around the world.... We also made preprints for write-ups of conference talks. Since bound-printed conference proceedings took so long to appear, this was the main channel for propagating preliminary results. Preprints were standard for all of the large experimental collaborations, and for many, if not most, theoretical groups.

The process had some drawbacks—it was somewhat clunky and labor intensive, and it was elitist. If you weren't on the right mailing list, you would miss important results. Otherwise, it was an efficient information conduit, far faster than waiting for journals. High-energy physicists were already well primed when the arXiv preprint server made its debut. The arXiv server was not a major paradigm shift, but merely a faster, more efficient, and more democratic means of sharing information. So, acceptance was relatively quick and uncontroversial.

Spencer R. Klein

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