

higher-security-level work. The lab will also need to import samples from other countries to build a reference library for diagnosing suspected infections.

Typical BSL-3 labs include two sets of self-locking doors and directional airflow to prevent the escape of potentially lethal, airborne pathogens. But BSL-4 labs have extra features that protect the workers and prevent the escape of highly lethal microbes that cause infections for which there are no treatments or vaccines.

EBOLA RESPONSE

Over the years, the NIID made various attempts to gain public support for BSL-4 operations at the site, but some citizens and politicians were concerned that the risks outweighed the benefits. That began to change last year as the Ebola outbreak raged in West Africa. Japan, like many other countries, worried that the virus could cross its borders through international travel.

Japan joins a growing club of nations that have considered or expanded BSL-4 capabilities over the past decade — many spurred by the 11 September 2001 terrorist attacks. The Federation of American Scientists in Washington DC, a non-profit organization specializing in security matters, estimated in 2011 that roughly 40 BSL-4 labs existed or were under construction worldwide, although some researchers consider that an overestimate.

“It was odd that a global player in science and a highly developed industrialized country such as Japan has not had that type of facility. It’s brilliant that they have one now,” says virologist Paul Duprex at Boston University School of Medicine in Massachusetts.

Others, however, argue that BSL-4 labs serve only a small slice of infectious-disease research, and that existing facilities already exceed global needs. “BSL-4 facilities are fantastically expensive to construct and operate, and that comes at the cost of other areas of biomedical research,” says molecular biologist and biosecurity specialist Richard Ebright at Rutgers University in Piscataway, New Jersey. Although the Musashi-Murayama lab itself is limited in scope, Ebright says, “the most likely impact is that this will influence more nations to join this club.” ■

SOCIETY

Most gay scientists are out in the lab

Female-dominated fields found to be more welcoming.

BY MARLA BROADFOOT

Lesbian, gay, bisexual and transgender (LGBT) scientists feel more accepted in the workplace than their peers in other professions, a US survey suggests. The study, published in the *Journal of Homosexuality*, also found that respondents in scientific fields with a high proportion of women, such as the social sciences, were more likely to be out to their colleagues than those in male-intensive disciplines such as engineering (J. B. Yoder and A. Mattheis *J. Homosexuality* <http://doi.org/6vc>; 2015).

That result may suggest that laboratories with more women tend to be more receptive to people who do not fit the stereotype of a scientist as a straight, white man, says Jeremy Yoder, an evolutionary ecologist at the University of British Columbia in Vancouver, Canada, and co-author of the study.

The Queer in STEM survey gauged the experiences of more than 1,400 LGBT individuals working in science, technology, engineering and mathematics (STEM) fields. The 58-item online survey included questions about gender and sexual identity, professional expertise and whether respondents felt that their work and social communities were welcoming or hostile.

Other studies have indicated that out employees feel more accepted at work, whereas those who are closeted or not open about their identities are more likely to be stressed at work and have negative attitudes towards their work and co-workers (K. H. Griffith and M. R. Hebl *J. Appl. Psychol.* **87**, 1191–1199; 2002).

Participants rated their openness about their gender and sexual identities on a scale from 0 (“I am not out to anyone in this group”) to 5 (“As far as I’m aware, everyone in this group

could know”). The results indicated that the majority of the respondents (57%) were out to half or more of their colleagues, a greater proportion than the 47% of people who said that they were out in a 2014 survey of the general US workforce by the Human Rights Campaign Foundation in Washington DC.

“There is reason to believe this difference could be real,” says Yoder. “In STEM workplaces you are working with a fairly well-educated set

“You are working with a fairly well-educated set of co-workers, and you may very well be able to expect a more open culture.”

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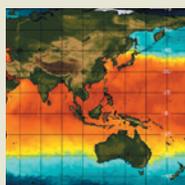
Most respondents identified themselves as lesbian, gay, bisexual, transgender, queer or asexual. Some ticked more than one box, and

5% wrote down an identity not included in the survey’s list, such as polyamorous, non-monogamous or pansexual. The researchers relied on social media and networking to recruit respondents, so they were concerned about the representativeness of the sample. A geographic analysis found that respondents came from US Census Bureau regions roughly in proportion to their estimated LGBT populations, but survey respondents tended to be young and to work in the life sciences.

“The study breaks new ground in providing a national portrait,” says Kristen Renn, a social scientist at Michigan State University in East Lansing who studies LGBT college students. She adds that the findings “provide a sense of possibility” to LGBT and queer youth who are exploring careers. “For those wondering, ‘Can I be an openly queer chemist?’” she says, the answer is: “Yes. And you won’t be alone.” ■



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