

Study shows gaps in how STEM organizations collect demographic information

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Professional organizations in science, technology, engineering and mathematics (STEM) fields could more effectively collect data on underrepresented groups in their fields, according to a new survey



published March 31 in *Science*. With more robust information, STEM organizations could better target efforts to recruit and retain a more diverse membership.

"We want to start a conversation among STEM organizations," said Nicholas Burnett, lead author of the study and a postdoctoral researcher in the Department of Neurobiology, Physiology and Behavior at the University of California, Davis. "The ultimate goal is to increase representation of these groups, and you can't do that without knowing where to target resources."

Burnett's coauthors on the study are: Alyssa Hernandez, Harvard University; Emily King, UC Berkeley; Richelle Tanner, Chapman University; and Kathryn Wilsterman, University of Montana, Missoula.

The researchers surveyed 164 U. S.-based STEM organizations, drawn mostly from a list of societies affiliated with the American Association for the Advancement of Science. The organizations were asked about the kinds of demographic information they collected on their members and conference attendees, and how they put it to use. Survey results were not associated with any particular organization, and the researchers did not ask for actual demographic information from the respondents: only what categories of information were collected.

Seventy-three organizations responded to the <u>survey</u>, representing over 700,000 constituents in a range of fields from life sciences and physical sciences to mathematics and technology.

While most organizations (80 percent) collected some demographic data, exactly what they collected varied. Many organizations followed the kind of breakdown used by <u>federal agencies</u>, offering a number of options for "race and ethnicity" but also lumping together several disparate groups under one category (such as "Asian American and Pacific Islander").



Gaps in data

Some groups were widely ignored. While 60 percent of respondents were collecting at least some information on "gender identity" and "race and ethnicity," for example, just 15 percent collected data on "disability status" and "sexual orientation." The omission of these groups is surprising given the well-documented discrimination against, and underrepresentation of these groups in STEM, the authors wrote.

The researchers suggested several models for guiding survey design. STEM organizations might seek to benchmark their own surveys against nationally collected data, for example from the National Science Foundation's Survey of Earned Doctorates, the U.S. Census Bureau's American Community Survey and the Centers for Disease Control and Prevention's National Health Interview Survey. But these surveys also vary in the categories of information collected. For example, the NSF survey uses a single "Asian" category while the Census Bureau's survey and the National Health Interview Survey recognize seven distinct Asian identities.

The National Health Interview Survey did better than most in splitting out groups that are normally lumped together, Burnett said, but it still does not collect enough information on gender identity.

"Organizations are stuck between following their federal funders, or responding to the social climate and collecting more accurate information," Burnett said.

Most respondents (87.5 percent) said they were collecting <u>demographic</u> <u>data</u> for some specific purpose, with the most common being "monitoring" and "resource planning."

"It's kind of shocking that some organizations are collecting data but



aren't doing anything with it," Burnett said.

The researchers hope that the study will provoke discussion in the STEM community, further research and action.

"Many organizations were genuinely interested in our study and want to do better," Burnett said.

More information: Nicholas P. Burnett, A push for inclusive data collection in STEM organizations, *Science* (2022). DOI: 10.1126/science.abo1599. www.science.org/doi/10.1126/science.abo1599

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