

# Citizen scientists are demographically homogenous: The need for a volunteer-centric approach

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Over the last century, the contributions of citizen scientists have proven a vital source of scientific data, with projects such as the Christmas Bird Count fueling high-impact research programs. However, less data has

been accrued about those who actually participate in these important programs. Writing in *BioScience*, Bradley Allf (North Carolina State University) and colleagues turn the lens of inquiry to citizen science itself, examining the demographics and participation patterns of the volunteers.

Drawing on data from surveys of volunteers and from a citizen science platform, the authors found that 77% of the studied volunteers participated in multiple projects. This finding is of particular importance, say the authors, because it points to the possibility that a relatively small cohort of volunteers constitutes a large portion of the citizen science workforce. Past research focused on single projects would have missed such a phenomenon.

The authors also found that these most engaged citizen scientists were overwhelmingly White, with high degrees of educational attainment. "The multi-project participants were eight times more likely to be White and five times more likely to hold advanced degrees than the [general population](#)," say Allf and colleagues.

Such findings highlight a possible shortcoming of extant citizen science programs, which often count [public engagement](#) with science—especially among scientifically underserved groups—as a key goal. "In short," report Allf and colleagues, "citizen science participants are nearly exclusively individuals who, relatively speaking, already have access to science." Because of this, they say, "citizen science may not be effectively broadening public participation in science."

To address this issue, Allf and colleagues suggest further research that focuses on volunteers rather than on individual projects. Through such a volunteer-centric approach, they argue, "researchers can consider more holistically the systemic issues in citizen science design that exclude marginalized groups, perhaps leading to new solutions." Furthermore,

they say, such research may highlight the ways in which those managing [citizen science](#) programs can leverage volunteers' multi-project participation to create novel learning pathways.

**More information:** Bradley C Allf et al, Citizen Science as an Ecosystem of Engagement: Implications for Learning and Broadening Participation, *BioScience* (2022). [DOI: 10.1093/biosci/biac035](https://doi.org/10.1093/biosci/biac035)

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