

Recommendations

What can be done to further **federal policies** and programs for **citizen science and crowdsourcing**?

The recommendations below build on over 12 interviews with experts in citizen science, both from within and outside of government. Based on these interviews and desk research, the Science and Technology Innovation Program at the Wilson Center developed the following 10 recommendations so the next Administration can continue to apply citizen science and crowdsourcing to advance scientific research, address societal needs, and improve STEM education.

EXECUTIVE OFFICE OF THE PRESIDENT

1 Increase active support from the Executive Branch Office of Science and Technology Policy (OSTP) for the Federal Community of Practice for Crowdsourcing and Citizen Science (CCS) and the Agency Coordinators

The value of both communities cannot be underestimated as they provide a space for federal employees to share ideas, work on common legal and administrative concerns, and cross-promote and create various projects. OSTP should designate an appropriate high-level individual to serve an active role in attending the Federal Community of Practice for Crowdsourcing and Citizen Science. In addition, that individual should be the primary point of contact for the Agency Coordinators as they implement new measures to support citizen science and crowdsourcing in their agency, hosting meetings as necessary and serving as a facilitator. The Federal Community of Practice should be encouraged to produce a short annual report of its activities for OSTP, summarizing key accomplishments and highlighting any issues going forward.

2 The Office of Management and Budget (OMB) and OSTP should *jointly* provide renewed policy guidance to federal agencies for citizen science and crowdsourcing in their first memorandum

The previous Administration took important initial steps to further the use of citizen science and crowdsourcing within the US government through memorandums, events at the White House, and by supporting the creation of citizenscience.gov. OSTP and OMB should use their initial joint memo to the government agencies outlining science priorities to highlight citizen science as a high priority area. In addition, OSTP and OMB should use other opportunities early in the new Administration to provide support for citizen science and crowdsourcing projects, through strategy or planning documents focused on areas such as S&T funding, innovation, or interagency initiatives. Finally, OSTP and OMB should verify the budget numbers presented in this document, filling in gaps as needed, so a government-wide assessment of citizen science and crowdsourcing funding is available.

3 A legal framework for conducting citizen science and crowdsourcing initiatives should be created to improve administrative efficiency and eliminate administrative and legal grey areas

The [America COMPETES act](#) clarified legal issues related to open innovation approaches using prizes and challenges. A similar framework should be developed for citizen science and crowdsourcing, to remove or significantly reduce legal barriers and improve efficiencies. For example, this framework could create a government-wide generic Information Collection Request (ICR) to facilitate the collection and use of data from large numbers of citizens (OMB and EPA have already negotiated a generic ICR; DOI and USGS are currently under negotiation with OMB). The framework could also define keywords like consent, data, and human subjects; and explicitly permit the use of funds appropriated by Congress for citizen science and crowdsourcing projects.

FEDERAL AGENCIES

4

The General Services Administration *Office of Citizen Services and Innovation Technologies* should increase their budget request to expand resources and structured support for citizen science and crowdsourcing

The General Services Administration (GSA) hosts the platform www.citizenscience.gov, and in collaboration with the Wilson Center, the [Federal Crowdsourcing and Citizen Science Catalog](#). In addition, GSA provides community support through social media and interactive webinars. This structured support should continue, but with increased commitment in the following ways: (1) a full-time employee should be dedicated to the community management and technological development of the Catalog and the [citizenscience.gov](http://www.citizenscience.gov) platform; (2) GSA should cover hosting fees and necessary improvements to the Catalog; (3) GSA should establish a pre-approved procurement vendor list for citizen science and crowdsourcing apps and platforms.

5

Agencies and Departments should incorporate citizen science and crowdsourcing into thematic priority areas and strategic plans

These methods can achieve agency and departmental missions, goals, and strategies more democratically, efficiently and sustainably. To encourage the seamless integration of these methods into everyday agency practice, leadership should highlight these methods as a way of achieving their strategic plans. For example, the [Department of Interior strategic plan for FY 14 – 18](#) outlines a mission area of “Ensuring healthy watersheds and sustainable, secure water supplies.” A sub-strategy that encourages the use of this method could read “To increase understanding of the state of watersheds, utilize citizen science and crowdsourcing for near real-time monitoring of water supplies on public lands.”

6

Continue and expand support for citizen science and crowdsourcing through research grant funding calls

For the federal government to lead the way in scientific research and encourage the adoption of novel methods like citizen science and crowdsourcing in projects, their granting mechanisms must specifically call out the use of these methods in grant requests or precursors to actual grants, such as Dear Colleague letters. This encourages grassroots initiatives that utilize these methods to seek federal support for their local initiatives, efficiently connecting bottom-up to top-down initiatives. To date, U.S. agencies including the National Science Foundation, National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, U.S. Environmental Protection Agency, U.S. Geological Survey and the National Institutes of Health have included this language in funding calls.

7

Agencies should use existing Federal Advisory Committees to expand stakeholder input and engagement in their citizen science and crowdsourcing efforts

The Environmental Protection Agency recently tasked its National Advisory Council on Environmental Policy and Technology (NACEPT) to “...assess EPA’s approach to citizen science in the context of current activities, and to recommend a coordinated framework for the Agency to embrace citizen science as a tool in protecting public health and the environment.” This allows external stakeholders from academia, industry, NGO’s and other key groups to provide advice on an agency’s programs, strategies, partnerships and current practices involving citizen science and crowdsourcing. Agencies should explore the use of their FACA committees to engage a range of stakeholders in the development and improvement of their citizen science and crowdsourcing projects and programs.

8

Agency Coordinators should facilitate inter-agency discussion, initiatives, and community building

In addition to updating projects in the Federal Catalog, the Agency Coordinators are in an excellent position to identify and share knowledge from citizen science and crowdsourcing in areas such as: best practices, data quality and assurance, and different approaches to project development and evaluation. These individuals should consider their efforts complimentary with members of the Federal Community of Practice for Crowdsourcing and Citizen Science, to facilitate dialogue between agency leadership and other communities within and beyond the federal government. The Agency Coordinators should also explore opportunities to align citizen science and crowdsourcing partnership efforts with Agency-specific challenges and **big ideas**.

9

Continue to leverage fellowships and early career government employees for citizen science and crowdsourcing research, programs and projects

A significant number of federal employees advocating for and promoting citizen science and crowdsourcing within their agency are often early career government employees or former or current fellows, i.e., American Association for the Advancement of Science (AAAS) Fellows, Presidential Management Fellows (PMFs), and Presidential Innovation Fellows (PIFs). These individuals play a vital role in bridging the academic, practitioner and governmental interests. This critical human resource should be expanded in the future.

PUBLIC-PRIVATE PARTNERSHIP

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New citizen science and crowdsourcing initiatives should leverage public-private partnerships to address national needs

Agency Coordinators, the Federal Community of Practice for Crowdsourcing and Citizen Science, and other open innovation communities should collaborate with the private sector to tackle 2-3 grand challenges of national interest. For example, national drinking water remains a huge concern as the ability to test water for toxins, including lead, cheaply and at scale is still out of reach. New initiatives should leverage public-private partnerships, for example, through Small Business Innovation and Research (SBIR) programs designed to engage the private sector in solving grand national challenges.