



Office of Research and Development

ORD Board of Scientific
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EO13985, EO14008, and Research Advancing Environmental Justice and Equity

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Current Agency Context

Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking

It is the policy of my Administration to make evidence-based decisions guided by the best available science and data. . . . Scientific findings should never be distorted or influenced by political considerations. When scientific or technological information is considered in policy decisions, it should be subjected to well-established scientific processes, including peer review where feasible and appropriate, with appropriate protections for privacy. Improper political interference in the work of Federal scientists or other scientists who support the work of the Federal Government and in the communication of scientific facts undermines the welfare of the Nation, contributes to systemic inequities and injustices, and violates the trust that the public places in government to best serve its collective interests.

- **E.O. 13985: Advancing Racial Equity and Support for Underserved Communities through the Federal Government**
- **EO 14008: Tackling the Climate Crisis at Home and Abroad**

- [E.O. 13985: Advancing Racial Equity and Support for Underserved Communities through the Federal Government](#): “...the Federal Government should **pursue a comprehensive approach to advancing equity for all**, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality....[A]dvancing equity requires a **systematic approach to embedding fairness in decision-making processes...**”
- [EO 14008: Tackling the Climate Crisis at Home and Abroad](#)
 - We must listen to science — and act.
 - Agencies shall make achieving environmental justice part of their missions ... to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts
 - Updates EO 12898: [Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations](#)
- [Administrator Michael Regan](#): *Given EPA’s mission, our pursuit of equity must include environmental justice.*

The Equity Assessment: Key Components

1. Each agency, including EPA, must conduct an equity assessment of its programs and policies to determine if underserved communities and their members face systemic **barriers** in accessing benefits and opportunities available pursuant to those policies and programs. (August 8, 2021)
2. Each agency, including EPA, must develop a plan to **mitigate** the barriers identified in the equity assessment. (January 2022)
3. **Research and Community Science** is one of a variety of EPA programs and policies under evaluation to determine if underserved communities and their members face systemic barriers in accessing benefits.



Barriers to Research and Community Science

Research is a benefit and service

- Research to serve individuals and communities that are most affected, rather than those most able to access federal resources.
- Community science is a means to empower communities to address environmental health and quality issues.
- **EPA Research:** Research activities conducted or sponsored by EPA and subject to relevant EPA science policies and quality and peer review standards.
- **Community Science:** Research conducted by the community and/or a third party on their behalf to inform decision making, and not necessarily beholden to EPA policies and standards.

Important Definitions and Concepts

Environmental justice: The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work

EO 12898: *Identify and address **disproportionately high and adverse human health or environmental effects** of its programs, policies, and activities on minority populations and low-income populations.*

Disproportionate: Differences in impacts or risks that are extensive enough that they may merit Agency action. This determination is ultimately a policy judgment which, while informed by analysis, is the responsibility of the decision maker. (EJ Technical Guidance, 2016)



Identifying Barriers: Reframing EPA Research Through an Equity/Environmental Justice Lens

Equity lens to research: What does it mean to integrate an equity lens into environmental research agenda setting, research implementation, translation, and application?

Science and environmental justice

- **Scientific research has built a strong evidence** base that disparities in environmental conditions and health exist across overburdened and underserved communities in the United States. In many places, environmental risk is disproportionately shouldered by communities of color, tribes, and economically depressed communities.
- **Goal of research on environmental justice:** Identifying, addressing, and solving environmental problems where they are most acute, in and with communities that are most at risk and least resilient.



Primary Information Sources Accessed

National Environmental Justice Advisory Council (NEJAC): Recommendations for Integrating Environmental Justice into the EPA's Research Enterprise (2014) <https://www.epa.gov/sites/production/files/2015-02/documents/nejac-research-recommendations-2014.pdf>

White House Environmental Justice Advisory Council Final Recommendations: Justice40 Climate and Economic Justice Screening Tool & Executive Order 12898 Revisions (2021)
<https://www.epa.gov/environmentaljustice/white-house-environmental-justice-advisory-council-final-recommendations>

National Advisory Council for Environmental Policy and Technology (NACEPT)

- [Environmental Protection Belongs to the Public: A Vision for Citizen Science at EPA \(2016\)](#)
- [Information to Action—Strengthening EPA Citizen Science Partnerships for Environmental Protection \(2018\)](#)



Barriers to EPA Research and Community Science

Process to Undertake Equity Barrier Analysis:

- Review of literature, notably NEJAC, WHEJAC, and NACEPT reports
- IntraAgency workgroup discussion – barrier identification as the initial step toward implementing solutions
- Distinguish and specifically address barriers to:
 - I. Research
 - II. Community Science
- Evaluate different perspectives – lenses – to identify barriers, recognizing that multiple stakeholder viewpoints must be addressed to achieve solutions:
 - Communities – disadvantaged and environmental justice
 - EPA researchers
 - EPA program offices and regions
 - Local and state government
 - Industry
- Seek public comment and peer consultation



I. EPA Research

Barriers to EPA Research on Equity
and Environmental Justice



a. Community Engagement to Set Research Agenda

NEJAC Recommendations

- The Agency should customize its research outputs by engaging stakeholders early in the planning process...
- EPA should prioritize an environmental justice research agenda informed by engagement and dialogue with vulnerable communities...
- EPA should continue serving as a convener of stakeholders to encourage collaboration among various entities ... in order to identify and clarify research questions needed to address environmental inequities. EPA should use its influence to bring together individuals and agencies that may not already be at the table and jointly develop approaches and answers to pressing environmental questions.

WHEJAC Recommendation

Each Federal agency...must ... provide communities of color, Tribal and indigenous communities, low-income communities, and people with disabilities the opportunity for meaningful participation on the development and design of research strategies ... recognizing that ...cultural practices are connected to health outcomes and can be disrupted by environmental effects/outcomes/hazards.



a. Community Engagement to Set Research Agenda

For potential discussion:

Community engagement: What are barriers to EPA's research programs more effectively soliciting the expertise, knowledge, and needs of various community and tribal organizations and members in research agenda and research design?



b. Data Needed to Address Inequity and Justice

NEJAC Recommendation

EPA should improve its data collection and sharing to increase assessment of health disparities and other burdens of pollution “on the ground” and allow for comparisons in vulnerable communities over time.

WHEJAC Recommendation

Improve Federal research and data collection efforts related to the health [of] environmental justice communities, [increasing use] of community-based science and recognition of Tribal ecological knowledge; climate change; and the inequitable distribution of burdens and benefits of the management and use of natural resources, including water, minerals, or land.



b. Data Needed to Address Inequity and Justice

Potential discussion questions:

Inadequate data to address inequity: What are barriers to prioritizing research and data collection to understand and measure cumulative human health and environmental impacts and risks, and the distribution of environmental health burdens and benefits?

Recognition: What are barriers to incorporating tribal ecological knowledge and community historical knowledge in scientific approaches and assessments to inform local, state, and federal actions to address environmental inequities?

Historical Experience and Trust Relationships: What are barriers to community and tribal trust in EPA's science enterprise, scientists, and funded partners?



c. Prioritizing Community-Scale Outcomes

WHEJAC Recommendation

...Each Federal agency must make achieving environmental justice part of its mission...to ensure that each person enjoys...improvement in human health and environmental outcomes in their communities.

Potential discussion questions:

National scale: What are barriers to research and data generation that can support both national and local mandates and actions needed to improve outcomes for underserved communities?

Prioritization of place-based issues: What are barriers to aligning EPA's statutorily-driven program/regional needs and consequent research goals and agenda with the short- and long-term needs of diverse place-based communities?

Approaches: What are barriers to accounting for social vulnerabilities in EPA's scientific methods?



d. Implementation Capacity and Partnerships

NEJAC Recommendation

An understanding of environmental justice...and how to conduct community-engaged research ... are critical skills for the EPA's research scientists. The Agency should provide the necessary training... and involve external stakeholders ...in the development and implementation of such trainings. In addition, the EPA should supplement its staff with sociologists and other social and behavioral scientists to add critical skills that ...address the complexities of environmental justice...demonstrate cultural competency...investigate the relationships between complex factors such as the physical environment and health.

Potential discussion questions:

Limited capabilities: What are barriers to EPA enhancing its capabilities to design and implement health and environmental research to address social inequities in environmental health?

Ownership: Are there barriers related to data-ownership and data-use standards for community- or tribal-based participatory research that EPA needs to address to support community-engaged research?



e. Research Translation

NEJAC Recommendation

EPA should engage in and support translational research – or research that includes a translational component [to]disseminate research findings to policy makers...and communities, academia, businesses, NGOs, tribal governments...that would facilitate relevant community-level interventions and improve agency protocols and procedures.

WHEJAC Recommendation

Each environmental justice strategic plan ...must contain strategies to ...improve direct guidance and technical assistance to environmental justice communities with respect to the communication of science, regulations, and policy related to Federal agency action on environmental justice issues.

Potential discussion questions:

Community orientation: What barriers currently exist to community use of EPA scientific results, science-based tools, and science applications to initiate or inform actions to address environmental inequities?



f. Funding

NEJAC Recommendation

EPA should support and provide funds for extramural projects that involve ... community-engaged research, build capacity in the community and promote sustainable public engagement.

WHEJAC Recommendations

- New funding for Environmental and Climate Justice Centers and Centers of Excellence at HBCUs, HSIs, TCUs and AAPISIs to support education, training, mentoring, research, policy and civic engagement work in underserved, economically disadvantaged, and environmentally vulnerable communities threatened by the climate crisis, poor birth outcomes, lead.
- EPA used to have Community-University Partnership (CUP) grants which provided funds for EJ and CBOs to partner with academic institutions to develop data and studies of interest to both partners.

Potential discussion questions:

University funding: What are barriers to EPA increasing its research engagements and investments in MSIs to address equity issues?

Partnership funding: What are barriers to equitable partnerships between academic institutions and community-based organizations?

Research funding: What are barriers to the capabilities and alignment of EPA's annual research funding with issues that are important to various communities?

Barriers to Community Science

“Embrace citizen science as a core tenet of environmental protection”



a. Engagement with External Organizations to Co-Create Community Science Goals

NACEPT Recommendations

- EPA must collaborate with community science groups to create an Agency-wide strategic approach, common framework and language that defines how community science can best support mission-critical environmental protection.
- Co-create EPA community science priorities through consultation with external organizations.
- Align EPA community science work to the priorities of local governments.
- External organizations can help EPA in assessing gaps in community-driven research and help the Agency to design effective support tools and best management practices for facilitating effective environmental citizen science programs.
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- External organizations can help EPA in assessing gaps in community-driven research and help the Agency to design effective support tools and best management practices for facilitating effective environmental citizen science programs.

WHEJAC Recommendation

Each Federal agency...must actively encourage and solicit community-based science and Tribal ecological knowledge, and provide communities of color, Tribal and indigenous communities, low-income communities, and people with disabilities the opportunity for meaningful participation on the development and design of research strategies ... recognizing that ...cultural practices are connected to health outcomes and can be disrupted by environmental effects/outcomes/hazards.



a. Engagement with External Organizations to Co-Create Community Science Goals

Potential discussion questions:

Agency framework: What are barriers to the creation of an Agency-wide strategic approach, common framework, and language that defines how community science can best support mission-critical environmental protection?

Local decisions: What are barriers to aligning community science work with the priorities and capacities of various levels of local, state, and federal government?



b. Community Science as a Core Tool

NACEPT Recommendations

Articulate and implement a vision for citizen science at EPA

Citizen science is an effective tool to achieve [innovation], and EPA leadership must integrate this powerful movement into the Agency's core mission and work...Although the use of citizen science data and networks is not yet an EPA cultural norm, citizen science is becoming a prominent factor in environmental and public health. The Agency cannot afford to be left behind...

WHEJAC Recommendation

Each Federal agency...must actively encourage and solicit community-based science and Tribal ecological knowledge... recognizing that ...cultural practices are connected to health outcomes and can be disrupted by environmental effects/outcomes/hazards.



b. Community Science as a Core Tool

Potential discussion questions:

Vision/Strategy: What are barriers to EPA and other levels of government embracing community science as a critical asset for informing decisions?

Place-based approaches to community science: What are barriers to using place-based data generated through community science to initiate or inform federal actions to address environmental inequities?

Qualitative data and lived experience: What are barriers to using qualitative data, community narratives, and traditional environmental or ecological knowledge to initiate or inform local, state, and federal actions to address environmental inequities?



c. Catalyzing Action from Community Science Data

NACEPT Recommendations

Provide guidance and communicate data quality needs for different data uses.

Catalyze action from citizen science data and information by providing guidance and leveraging collaboration.

Create EPA policies, incentives, and guidance that encourage engagement with stakeholders in citizen science projects.

Expand public engagement in EPA work by prioritizing open licensing and making data and tools more transparent, accessible, and usable.

WHEJAC Recommendation

Build data collection capacity. Improve Federal research and data collection efforts through the increased use of community-based science and recognition of Tribal ecological knowledge.



c. Catalyzing Action from Community Science Data

Potential discussion questions:

Data Use: What are barriers to the use of data generated through community science efforts, including community- or tribally-owned and managed research for initiation of government actions and inclusion in policies?

Community Access: What are barriers to community access to environmental information, science-based tools, and science-based communications?

Historical Experience: What are barriers resulting from historical experience that impact community willingness to engage in community science activities?



d. Science Education

NACEPT Recommendation

The Agency should support a full range of efforts, including ...education (particularly environmental and STEAM [science, technology, engineering, arts, math] education).

WHEJAC Recommendation

Create a ... leadership pipeline of youth from frontline communities working in their communities on identified citizen science projects with grassroots EJ groups. Investment in frontline communities can address underserved youth and under-resourced grassroots groups on the frontlines of fighting for environmental and climate justice.... The youth can develop a career path, compensation, education awards, and job skills while living in their own communities and being part of the solution.

Potential discussion question:

Resources: What are potential resource and other barriers to building community capabilities to fully engage in community science as a means of supporting solutions for environmental challenges?



Charge Questions: EPA Research

Charge Question 1: Equity in Research

Q.1a: With regard to the identification, prioritization, funding, and conduct of intramural and extramural research by EPA, what barriers exist to the equitable distribution of the benefits and services of this research to people of color and underserved communities?

Q.1b: Based on familiarity with ORD's research programs and workforce expertise, which structural, cultural, and/or other barriers most need to be overcome to optimize the organization's capacity to conduct research of most relevance and utility to people of color and communities most in need?



Charge Questions: Community Science

Charge Question 2: Community Science

Q.2: Community science is defined here as research and science conducted independently by communities and/or third parties to inform decision-making, and not necessarily subject to Agency science policy, quality, and peer review requirements. What scientific, cultural, structural, and other barriers need to be addressed to facilitate the use of community science to advance equity goals in decision making, including for community empowerment and acceptance at different levels of governance, from local, to state and Federal? What barriers need to be overcome to increase the receptivity of government organizations to considering community science in their decision-making processes?



Important Definitions

Community of color: A geographically distinct area in which the population of any of the following categories of individuals, individually or in combination, is higher than the average population of that category for the State in which the community is located: (i) Black; (ii) African American; (iii) Asian; (iv) Pacific Islander; (v) Other Non-White race; (vi) Hispanic; (vii) Latino; (viii) Indigenous or members of a Tribe; and (ix) Linguistically isolated. (WHEJAC Updates to EO 12898)

Disproportionate: Differences in impacts or risks that are extensive enough that they may merit Agency action. This determination is ultimately a policy judgment which, while informed by analysis, is the responsibility of the decision maker. (EJ Technical Guidance)

Equity: The consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. (EO 13985)

Environmental justice: The just treatment and meaningful involvement of all people regardless of race, color, national origin, or income, or ability, with respect to the development, implementation, enforcement, and evaluation of laws, regulations, programs, policies, practices, and activities, that affect human health and the environment. (EO 12898; EPA 1992)

Environmental Justice community: Geographic location with significant representation of persons of color, low-income persons, indigenous persons, or members of Tribal nations, where such persons experience, or are at risk of experiencing, higher or more adverse human health or environmental outcomes. (WHEJAC Updates to EO 12898)

Underserved communities: Populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, as exemplified by the list in the preceding definition of “equity.” (EO 13985)