Air and Energy (A-E)
Environmental Justice Considerations

BOSC Subcommittee Meeting, February 19, 2021
Presenter: Bryan Hubbell, A-E National Program Director

Motivation

From Day 1: While air quality has improved across the U.S., the health burdens of air pollution are still disproportionally borne by communities with environmental justice concerns.

Impacts from climate change on extreme weather and climate-related events, air quality, and the transmission of disease through insects and pests, food, and water increasingly threaten the health and well-being of the American people, particularly populations that are already vulnerable.

4th National Climate Assessment

Achieve air quality that meets the fine particle pollution national ambient air quality standards in all areas of the country, with special emphasis on communities with poor air quality and low-income populations.

EJ 2020 Action Agenda: the EPA's Environmental Justice Strategic Plan for 2016-2020

Transitions

Securing Environmental Justice and Spurring Economic Opportunity

Agencies shall make achieving environmental justice part of their missions by developing programs, policies, and activities 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. It is therefore the policy of my Administration to secure environmental justice and spur economic opportunity for disadvantaged communities that have been historically marginalized and overburdened by pollution and underinvestment in housing, transportation, water and wastewater infrastructure, and health care.

Executive Order on Tackling the Climate Crisis at Home and Abroad, Section 219, January 27, 2021

A-E StRAP, 2019-2022

Vulnerable communities and communities with environmental justice concerns

Research Area 3 ". . the identification of factors that put people or ecosystems at risk from exposure to air pollution (e.g., life-stage, pre-existing disease, and genetics/epigenetics; **environmental justice factors such as social, economic, cultural, and race**; behavioral, and other factors that may confer vulnerability) must be considered to fully assess impacts and inform air quality and public health management decisions."

Research Area 3 Priority: Factors affecting vulnerability of people and ecosystems including biological, exposure/deposition characteristics, and **environmental justice.**

Research Area 4 ". . . coordinate efforts with those of other ORD research programs to develop a cross-media understanding of [PFAS] and the potential impacts on health and the environment, with a focus on **vulnerable populations**."

Research Area 6 ". . **. Engagement with community representatives** have generated ideas about how information can be most effectively developed and communicated and increased the understanding of the science at the community level."

Research Area 7 ". . .new, real-time advanced monitoring approaches and lower-cost devices [can be used] to identify pollution hotspots, to determine locations for siting regulatory monitors, [and] for **community awareness** about air quality. . ."

Research Area 9 "This integrated approach will help us better understand the growing importance of wildland fires; identify vulnerable ecosystems and human populations and the biological, geological, **and environmental justice characteristics that confer vulnerability**; and develop effective risk communication and mitigation strategies."

Engagement in Research

- Collaborating with a community
  - Building partnerships with specific communities and working together to find solutions to challenging environmental problems
- Networking and broadening awareness through larger groups
  - Public Health Agencies
  - National Environmental Justice organizations
  - Academic institutions

Research Implementation

There are opportunities across the research portfolio to connect with communities with EJ concerns.

- ***EPA Collaborations*** *with other national research programs, POs and ROs (e.g., RARE, R2P2)*
- ***HEI Air/Energy****:* unique public-private partnerships
- ***Other Collaborations*** with other agencies, industry, academia (e.g., CRADAs, MOUs/MOAs)
- ***Other Competitions*** e.g., Pathfinder Innovation Projects (PIPs), challenge and prize competitions, citizen science, SBIR, P3
- ***Star Grants****:* single principal investigator, Interdisciplinary Centers

Example 1: Rubbertown EJ engagement

Analysis of VOCs using passive samplers in Rubbertown

- Rubbertown is an industrial area of Louisville and VOCs emitted in this area are of particular concern due to nearby communities, including substantial EJ populations.
  - Transparency: Six community meetings throughout the project.
  - Longer-term: Field work was extended at two sites.
- Persistent odors (some due to HAPs and VOCs) can be a nuisance and may cause a health concern.
  - Community input/Citizen Science: Mobile Odor Explore app for citizens to use in reporting odors.
  - Actions driven by Community input: Remotely trigger odor canisters (based on data from mobile app) to understand what is in the air.
  - Feedback: Compare odor reports to measurements and provide info to interested parties.

Example 2: Wildfire ASPIRE Study

ASPIRE = Advancing Science Partnerships for Indoor Reductions of Smoke Exposures

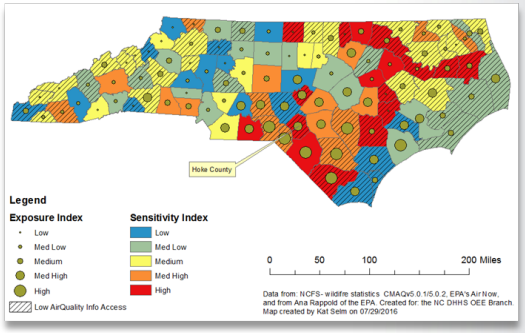
How air cleaning and ventilation practices impact indoor air quality during wildfire events.

- Common recommendation to reduce exposure is to go indoors, but wildfire smoke (PM2.5) can infiltrate.
- Two locations: Missoula, MT and Hoopa Valley Tribe, CA.
  - Community input: Missoula and Hoopa Valley Tribe identified outputs, obtained local permissions, sited equipment, and collected data.
  - Community interest: Missoula health department wanted to understand clean air spaces in public and commercial buildings.
  - Community interest: Hoopa tribe wanted to learn more about clean air spaces in their community to address exposures to smoke from home heating and wildfires.

Example 3: Community Health Vulnerability Index

Tool for public health officials to identify communities at higher risk from wildfire smoke.

- Considers factors known to define susceptibility to air pollutant-related health effects
- Can be combined with air quality forecast data generated by models to develop maps of counties, regions, or other areas where at-risk populations live
- Translated for use in North Carolina
  - Community interest: Utilized CHVI to identify NC community most at risk to smoke health impacts
  - Community input: Engaged Hoke County stakeholders (e.g., local fire departments) with CHVI to discuss vulnerability to smoke health impacts.



Courtesy of Lauren Thie, NC Department of Public Health

Engagement Plan

- Communities with environmental justice issues are recognized as stakeholders for our research.
- Engagement can:
  - Better define the scientific questions.
  - Inform how the research can offer solutions to problems important to both the researchers and the stakeholder.
- Connections with larger organizations may help:
  - Increase awareness of A-E research.
  - Provide opportunities for collaborations at broader (i.e., regional or national) scales.
- As implementation continues, A-E is exploring opportunities to improve outreach to groups focused on addressing environmental justice issues.

Questions for Discussion

- Looking at past experiences, we see that intentional stakeholder engagement takes time and commitment and **adds great value**.
- As A-E implements the research, we are interested in enhancing our ability to conduct it to be useful to communities with EJ issues.

- How can we explore opportunities to apply (or modify) national tools and make them relevant at a local/community scale?
- How can we translate what we learn from one community to help another faced with similar challenges?
- How can we use our time and resources wisely to effectively engage with communities with EJ issues?
- How can we improve on defining the scientific question and conducting the science so that we can offer solutions to environmental and health concerns important to the community?

Air and Energy (A-E)
Engagement Strategy

BOSC Subcommittee Meeting, February 17-19, 2021
Sherri Hunt, A-E Principal Associate National Program Director

A-E Team Engagement Strategy

- Early in 2020, the Air and Energy Team began a deliberate process to develop an engagement strategy for our program
- We recognized that we cannot realize the vision of our program without outreach, communication, and engagement

- As presented in April 2020, our motivation was to:
  - Record and assess what we are doing well
  - Set a vision and concrete goals
  - Identify a way to track and measure progress
  - Identify areas for improvement

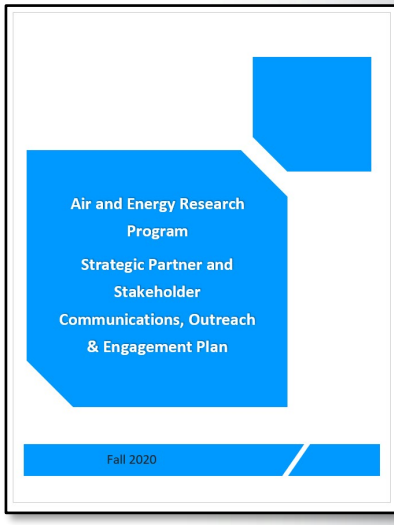
Progress on Engagement

- Since April 2020, we have:
  - ✓ Continued our A-E Team discussions
  - ✓ Met with individuals and groups who use our research to discuss:
    - ✓ Communication and engagement goals
    - ✓ Preferences for communication and engagement methods
  - ✓ Completed an interest group identification and classification
  - ✓ Created a comprehensive menu of outreach and engagement activities
  - ✓ Completed the 2020 A-E Research Program Strategic Communications, Outreach, and Engagement Plan document
  - ✓ Started implementing A-E Engagement Plan

A-E Engagement Strategy

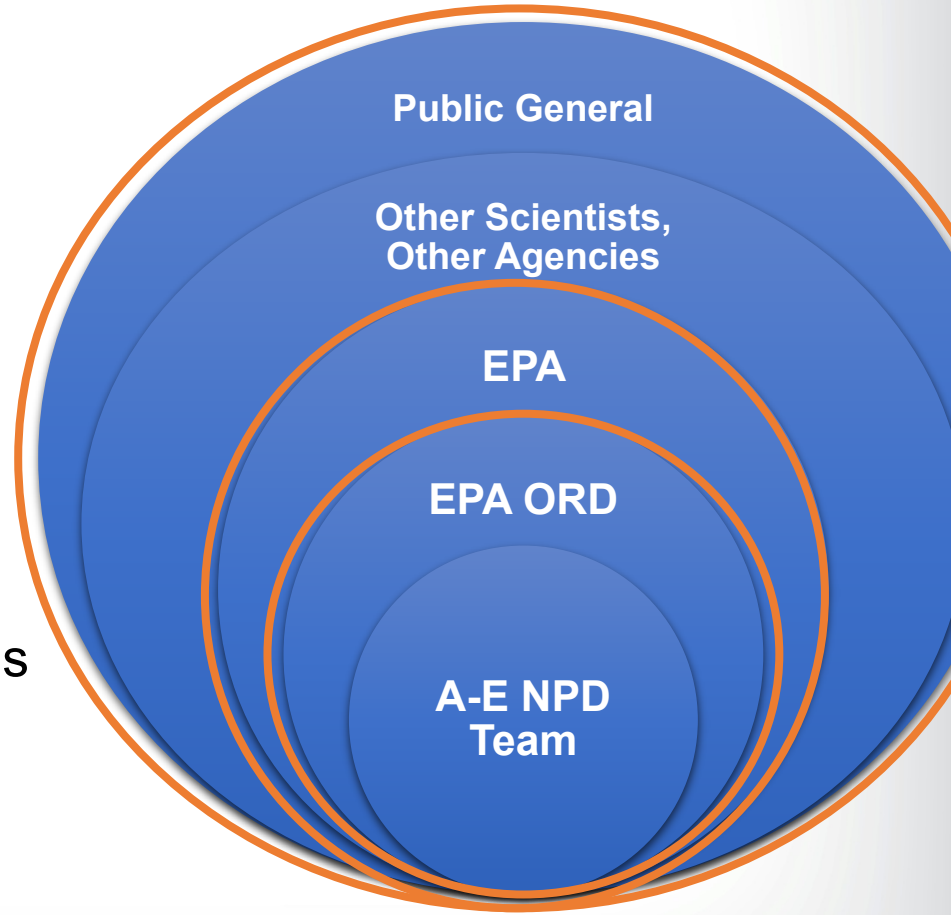
- Our document includes:
  - Background on past engagement
  - Definitions of key terms
  - Goals for communications, outreach, and engagement
  - Identification and classification of interested groups within ORD, within EPA, and with the broader community
  - Examples of measurable objectives for tracking and evaluation
  - Catalog of current and potential tactics and activities
- Discussed past engagement previously

➢ This presentation will focus on goals, and objectives



Audiences for Outreach, Communication, and Engagement

- Previously discussed spheres of engagement
- Grouped audiences into three categories:
  - ORD (“inreach”)
  - Within EPA broadly
  - Beyond EPA
- Current Strategy focuses on goals for audiences within EPA
- Outreach beyond EPA is coordinated with existing infrastructure beyond the A-E Team



A-E Team Goals

- For the ORD research community, increase awareness and understanding of A-E research activities and where appropriate, their connection to research in other National Research Programs (NRPs) (“inreach”)
- For deliverables, effectively translate and synthesize research results to help make them more accessible and usable
- For partners and stakeholders, increase awareness, use, and support of the full portfolio of Air and Energy research activities and deliverables

Outreach and Engagement within EPA (1)

Continued and Initiated in 2020

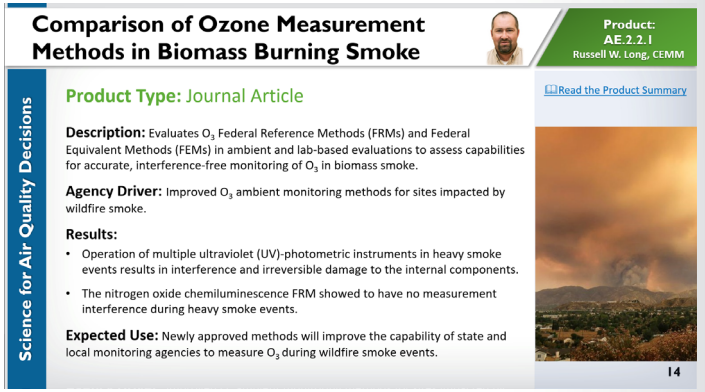
- Regular meetings open to anyone in EPA, focused leadership groups, scientist-to-scientist
- Research Area Coordination Teams* (slide 9)
- Internal newsletter with research updates
- FY Product and Output summary tables
- A-E Partner Survey
  - Which Products would you like more information on?
  - Which outreach, communication, and engagement activities are most useful?

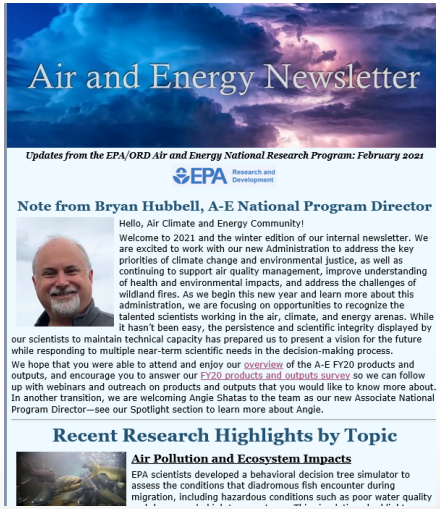
* During implementation, these Teams were organized around a slightly different set of Outputs than during the planning process.

Outreach and Engagement within EPA (2)

Continuing in 2021:

- Participate in regular meetings
- Strengthen and refine the RACTs (slide 9)
- Recognize reports, syntheses, presentations, etc. as equal accomplishments to journal articles
- FY20 Product and Output Delivery Webinar
- FY20 Product and Output webinar series
- Distribute quarterly internal newsletter with research updates





Outreach and Engagement within EPA (3)

Research Area Coordination Teams (RACTs)

- RACTs bring together lead scientists for ongoing and planned research efforts with anticipated users of their work and those with similar technical interest for engagement around research results and deliverables (e.g. Products and Outputs).
- **The goals of the RACTs are to**:

  a) refine and understand how best to deliver and translate research products and outputs;

  b) identify longer-term future research needs and potential collaborations; and

  c) strengthen familiarity, comradery, and trust among EPA staff with the goal of finding common research objectives and improving current and future collaborations.

Outreach and Engagement within EPA (4)

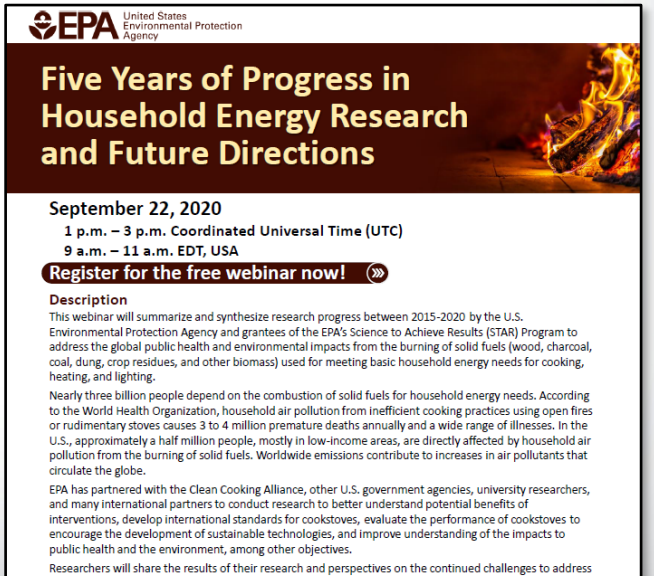
- **Research Area Coordination Teams**:
  - Air Pollution and Ecosystem Impacts
  - Air Pollution and Health Impacts
  - Air Quality Modeling
  - Climate Impacts, Adaptation, and Mitigation
  - Emissions Measurement and Methods Development to Support Regulatory Action
  - Ambient Air Measurements: Regulatory-Grade Methods and Air Sensors and Pollutants
  - Wildland Fires
- **Participants**:
  - ~ 46 from ORD
  - ~ 28 from 8 Regional Offices
  - ~ 69 from Program Offices

* During implementation, these Teams were organized around a slightly different set of Outputs than during the planning process.

Outreach and Engagement Beyond EPA (1)

Completed in 2020:

- Presentations at Tribal meetings:
- Public Webinars focused on synthesis and translation for specific target audiences
  - Air Quality and Healthy Hearts, May 28, 2020
  - Household Energy Webinar, Sept 22, 2020
- Meetings with states and multi-jurisdictional organizations – groups from 4 EPA regions were coordinated by ORD leadership
- Kickoff meeting for new STAR grants on Chemical Mechanisms



Outreach and Engagement Beyond EPA (2)

Continuing in 2021:

- Major updates of Air Research and Climate Research websites
- State and Tribal listening sessions regarding wildland fires in Jan - Feb 2021
- Two webinars in April in the EJ and Tribal Indigenous Peoples series coordinated by ORD
- Four Public Webinars
- Articles
- Email lists
- …

We Want Your Input

- The A-E Strategic Engagement Plan will continue to evolve and will extend beyond the current Strategic Research Action Plan.

- We are asking for feedback and suggestions on how to identify opportunities to make A-E research results most valuable to air-quality policymakers and managers at multiple levels during implementation of the research program
  - Within the Agency including Program and Regional Offices
  - With other Federal agencies
  - With state and local agencies and tribes
  - With communities

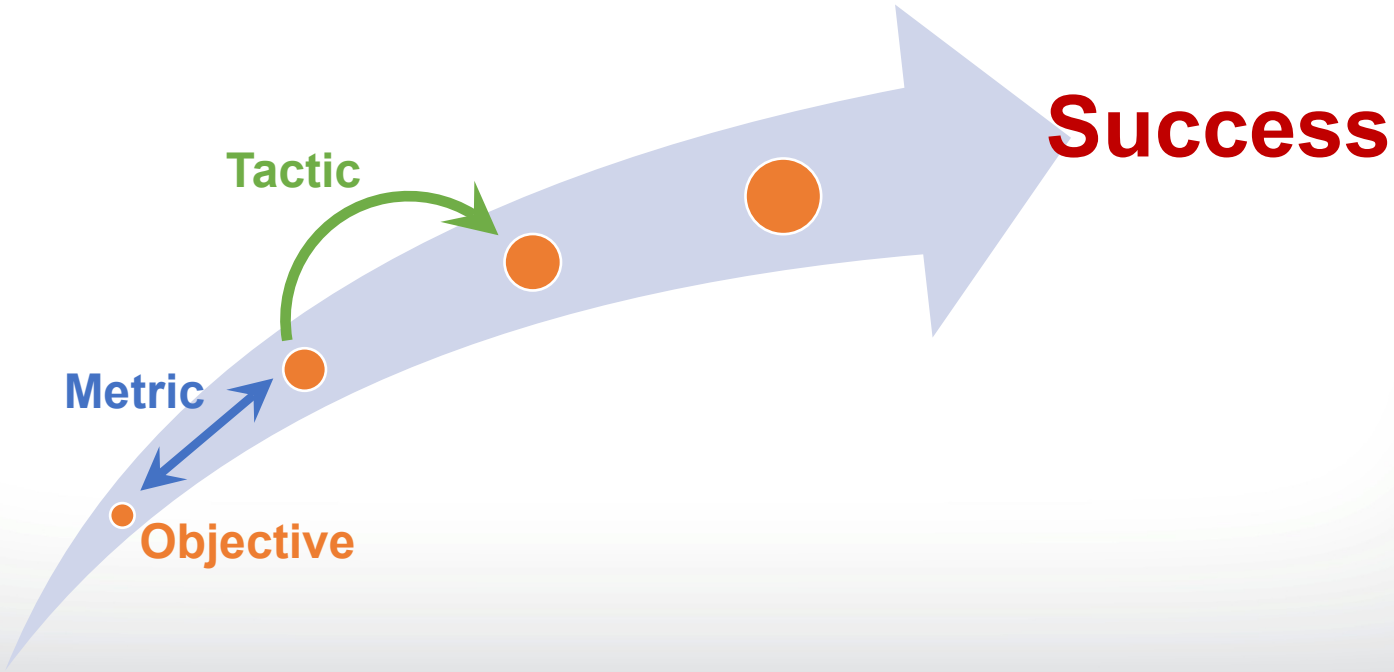
Outreach and Engagement within EPA

Excerpt from Activity Menu:

Activity	Frequency	Purpose
EPA intranet page	As needed	Provide information about current air, energy and climate related research to ORD staff, Program and Region partners; Provide resources, links to internal webinars with information about the research
Webinar	Bimonthly	Describe research plans, progress, results, or demonstration of a new tool; may be broad or extremely focused (e.g. FY19 Product Webinar Series)
Moment of Science on the A-E Connections Call	Twice monthly	Short format presentation for A-E community within ORD and partner offices to share overview of topic or research results
Update meetings with Program Office Center Directors, Division Directors or senior staff	Quarterly	Provide updates on AE products most relevant to the office and to learn about program activities and new needs or potential shifts in priorities

Defining A-E Team Goals

- For each goal, we have a vision of **success**.
- **Objectives** are the steps along the way to achieving the goal.
- **Metrics** are the units that measure progress toward the goal.
- **Tactics** are the actions that help us to achieve objectives.



Considering a Goal (1)

- **Goal: For deliverables, effectively translate and synthesize research results to help make them more accessible and usable**
- Vision of **success**:

  The A-E Team will provide information:

  - In a manner that ensures users can understand the value of research results and apply them in planning and decision making
  - With a clear explanation of why a research project, product, or output is important – what it adds to existing scientific knowledge or how it can be used
  - In a format that can be used by partners and stakeholders without significant investment of their resources. …scientists should be able to state why the work matters and how it can be used.

Considering a Goal (2)

- Potential **Metric**:
  - Percentage of Products/Outputs for the year that are presented in a webinar, seminar, or workshop
- Potential **Objective**:
  - Increase the percent of Outputs and Products that are in the form of synthesis reports or webinars from X in 2021 to Y in 2022
- Potential **Tactics**:
  - Work with Center leadership to increase recognition of synthesis documents in promotion packages
  - Identify related sets of deliverables (Products and/or Outputs from StRAP and/or related non-StRAP funded work) and work with communications team to identify synthesis webinar topics