

Scientist-Community Partnerships

A Scientist's Guide to Successful Collaboration



Scientists have a tremendous opportunity to improve communities' access to and understanding of technical information, leading to better solutions to science-based challenges and better protection for the public. Scientist-community partnerships, when approached thoughtfully, can bring about meaningful change. Just as important, they help level the playing field for communities that could be shut out of important policy discussions in part because they lack either access to scientific information or the ability to evaluate and interpret technical findings.

People who can freely access and consider scientific information are better equipped to engage in the decisionmaking processes that support a stronger democracy. And when community members and scientists collaborate, they combine

Why the Union of Concerned Scientists Created This Guide

Fostering scientist-community partnerships is a natural fit for UCS. Our mission is to combine technical analysis with effective advocacy to create innovative, practical solutions for a healthy, safe, and sustainable future. We believe that understanding, access, and inclusion can yield trusted, genuine partnerships between scientists and their local communities.

We developed this guide using input and guidance from community leaders, decisionmakers, and scientists and academics, all of whom shared with us not only their experiences but also models and frameworks they have used to shape their own partnerships. This guide illustrates generally recognized best practices for collaboration, and it celebrates the critical work of individuals and organizations engaged in these efforts. And it recognizes that Indigenous knowledge and other ways of knowing are just as crucial and important as scientific knowledge.

This guide, updated from an earlier version, integrates lessons learned through building partnerships since UCS first began doing such work. As we continue learning how to enhance the impact and effectiveness of partnerships, your feedback and experience will help improve this guidance in the future.

On the cover: UCS scientist Pablo Ortiz meets elected officials from around California to explain the science behind the unique climate and water challenges they face. Photo courtesy of Water Education for Latin Leaders (WELL).

unique strengths and types of knowledge in ways that can help address our most pressing challenges, inform local decisionmaking, and develop solutions that benefit everyone. However, communities that directly bear the burden of environmental and public health hazards often have the least access to scientific and technical expertise, even when their own experience and knowledge clearly show the need for action. As a result, these and other communities are often enthusiastic about engaging with researchers (see Table 1, p. 5).

Despite the many benefits of scientist-community partnerships, they can be challenging to start and implement. Many scientists (including early-career scientists) struggle to participate effectively in public discussions and policy deliberations. They may be more used to communicating with technical audiences. They also may be concerned about the potential impacts of public engagement activities on their professional advancement or reputation. Or perhaps they are simply unaware that such collaborative opportunities exist.

Recognizing the value of effective scientist-community collaborations, the Union of Concerned Scientists (UCS) created this guide to give scientists and other experts information and tools for developing strong, mutually beneficial partnerships. This guide can help you:

- **Understand the mutual benefits of scientist-community partnerships**
- **Bring your scientific and technical skills to bear on your community's needs and priorities while maintaining your scientific integrity and independence**
- **Navigate the process of building relationships with community members**
- **Overcome common challenges to getting involved in your local community**
- **Access a wealth of additional knowledge and resources on scientist-community partnerships**

This guide focuses on scientists proactively reaching out to communities—largely because community members may not be aware of your interest in collaborating. Nevertheless, its framework and resources also apply to partnerships initiated by community members.

Please visit <https://www.ucsusa.org/resources/scientist-community-partnerships> to access an online version of this guide with clickable links, read more about the case studies in this guide, and access additional resources on building strong partnerships. Links have been tested at the time of publication. UCS does not manage these domains and is not responsible for their content.

Engagement Can Take Many Paths and Yield Many Benefits

As scientists, you can use your expertise in partnership with community organizations in many different ways, bringing positive changes on issues you care about. Your scientific and technical skills, even those not directly related to your specific area of expertise, could benefit a community group.

Depending on your expertise, interest, availability, and the needs of the community, you can:

- **Identify** credible sources of information on an issue
- **Help** a community access and understand the scientific research and results most relevant to their priorities or challenges
- **Present** and discuss data at a public meeting
- **Analyze** an environmental impact statement or risk assessment
- **Serve** the community as a subject-matter expert
- **Work** with the community to identify where more scientific understanding would be helpful
- **Help design, implement, and analyze** surveys or other research activities
- **Cowrite or otherwise help** communities submit grant proposals
- **Provide** background information for community members to make science-based public comments on proposed policies and regulations
- **Communicate** the scientific and technical aspects of a local issue to decisionmakers, students, or others
- **Collaborate** with community leaders to educate the media
- **Serve** on an advisory committee or board of a local organization
- **Lead** a community science project

Benefits of Scientist-Community Partnerships

A successful scientist-community partnership benefits both parties. For scientists, a partnership may be an opportunity both to use your scientific skills or research to address issues affecting people's everyday lives *and* to learn or practice other skills—for example, speaking to the public or the media, writing grant proposals, or working with broad coalitions. Research questions informed by community needs strengthen the application of the research, and they can help build trust between researchers and scientists. In particular, early-career scientists (graduate students, recent graduates, and post-docs) may gain useful skills, including a better ability to understand how their research and technical expertise can affect outcomes outside the classroom or laboratory.

These activities also can be learning opportunities for community members, especially those who are new to civic engagement. Community members can deepen their understanding of the scientific process and learn how to combine data with lived experiences to strengthen arguments for equitable, science-based decisions. For additional benefits, see p. 4.

Scientists who are open about the reasons for engaging in partnerships and the benefits and outcomes they seek are better able to establish trust with the community. This will allow scientists to reference this partnership in a resume or grant/award application or apply these skills to other areas of their lives without “using” the community group for their own ends.

*“Your power will come from working **with** the community and **for** the community.”*

— Members of the Virginia Scientist-Community Interface

Benefits for Scientists Can Include:

- Understanding the legal, ethical, and social dimensions of science-based challenges
- Applying scientific knowledge and technical skills to address real-world problems in the community
- Building and strengthening personal relationships within the community
- Building public trust in science and scientists, as well as support for scientific research
- Collecting data and increasing visibility for their own work
- Identifying future research questions
- Learning about community concerns
- Gaining a greater appreciation of local knowledge and community experiences
- Diversifying and broadening perspectives to strengthen research and overall scientific processes

Benefits for Communities Can Include:

- Accessing data and technical expertise
- Building scientific and technical understanding
- Acquiring and applying research skills
- Increasing credibility with decisionmakers and generally widening a network of influence
- Being heard when addressing critical issues
- Informing and participating in scientific research
- Gaining a greater understanding and appreciation of scientific issues and process
- Building and strengthening personal relationships with scientific and technical experts



PARTNERING FOR CLEANER AIR IN THE HEARTLAND

Trust between scientists and communities is not a given, it is earned. CleanAirNow (an environmental justice organization in Kansas City, Kansas, headed by Beto Lugo Martinez and Atenas Mena) and UCS have established a trust-building relationship over the years and interact on intersectional environmental justice issues. Operating with community-lived experience and community-led research expertise in parallel with academic expertise is fundamental to this long-standing relationship. Co-development, a memorandum of agreement, and equitable financial resourcing combine to build capacity and avoid one-way extraction of community knowledge.

The partners share power and the spotlight by identifying opportunities for each other (advocacy, newsletters, publishing reports, podcasts, traditional and social media), presenting together at academic conferences, and collaboratively attending decision-maker meetings at the local, state, and federal levels. A reciprocal relationship of community with science and scientists addresses root causes, leading to lasting systems changes. In 2021, the partners issued the joint report *[Environmental Racism in the Heartland: Fighting for Equity and Health in Kansas City](#)*, available in both English and Spanish.

TABLE 1. How Scientists and Community Members Want to Engage with Each Other

<i>Community Members</i>		
Ways in Which Scientists, Public Health Officials, and People with Technical Expertise Can Engage with Communities on Food Equity	% Respondents Who Feel These Engagement Opportunities Exist in Their Community, or Are Needed	
	Exist	Needed
To fill in research or data gaps.	9%	71%
To help develop metrics to evaluate the impact of your work.	14%	71%
To form a community-researcher partnership to participate in the research and policy process.	21%	78%
To help you or your community write grants for special projects that increase access to healthy food.	24%	88%
To inform you of relevant data sources and availability.	26%	80%
To serve as a bridge to the scientific, technical, and academic communities to help bring awareness and promote the communities' work and needs.	26%	84%
To serve as an advocate for greater community participation in the research and policy process.	26%	81%
To help develop policy solutions to propose to local or state officials.	35%	87%
To inform you of the latest research on food and its impacts on health with community-friendly materials (fact sheets, toolkits, videos).	43%	82%

<i>Scientists</i>	
What Kinds of Activities in Your Geographic Area Would You Want to Participate In?	% Respondents
Connect with local elected officials or policy makers to offer scientific information and expertise	59%
Offer technical expertise or assistance to a community organization	56%
Serve on advisory committees to help inform local policy decisions	54%
Host or participate in public education events on science policy issues	45%
Connect with reporters to help inform coverage of scientific and science policy topics	38%
Write a letter to the editor or an op-ed defending science and combating misinformation	37%
Provide testimony at public hearings related to my expertise	34%

In two separate surveys, UCS asked community members and scientists how they would like to engage with each other. While the surveys were unrelated, several similar engagement opportunities rose to the top in both groups, underscoring the need for and importance of building strong collaborative partnerships.

Notes: The community survey was conducted in 2015 among North Minneapolis residents on the subject of food equity; 112 responded. The scientist survey was conducted in 2015 among UCS Science Network members; 346 responded. Respondents of both surveys were allowed to select multiple choices.

Making a Difference in Your Community: An Integrated Approach

Even before connecting with community members about a possible partnership, scientists should consider how to approach such a project. Across the many different models of scientist-community partnerships, the most effective and engaging are built on mutual respect, transparency, reliability, and a recognition that community priorities should come first. And in any model, community knowledge is just as important as scientific knowledge. For example, community knowledge, including traditional knowledge and other types of knowing, benefits from time-tested solutions based on understanding community resources, strengths, and creativity.

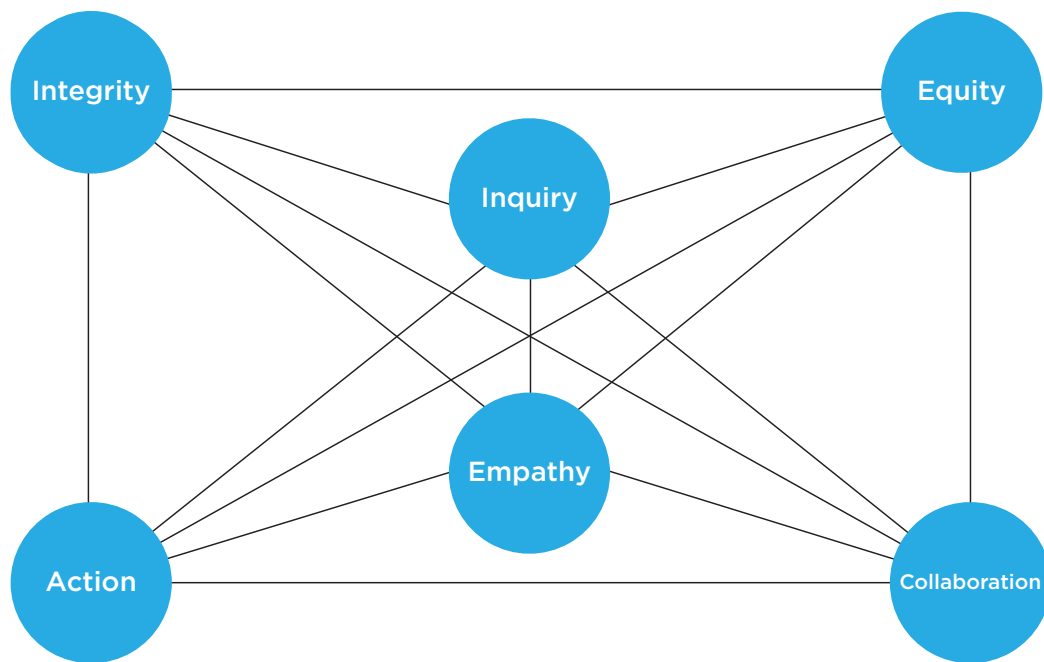
Building respect and trust is essential for a successful, mutually beneficial partnership, regardless of a project's

scope or timeline. Figure 1 and Table 2 offer a useful example of a values-based framework for scientists who partner with community organizations. For other frameworks, see the resources section, p. 17.

“Community engagement and collaboration shouldn’t be a checkbox in a research project.”

— Jackie James and Shaun Crawford,
Citizen Science Community
Resources

FIGURE 1. Effective Collaboration Is an Iterative Process



Effective and respectful collaboration requires a values-driven framework, beginning with inquiry and listening with empathy, and cycling in a non-linear fashion throughout the other key values throughout the course of the project.

ADAPTED FROM [THE GEHARDT INSTITUTE FOR CIVIC AND COMMUNITY ENGAGEMENT](#).

TABLE 2. Focus on Values for Meaningful Engagement

Engagement Value	What It Means	What to Ask Yourself
Inquiry	<p>The first step in developing a partnership is to research the community’s historical context and your institution/organization’s history with the community. Hear what community members have to say.</p> <ul style="list-style-type: none"> Acknowledge that there are types of knowledge beyond scientific and technical data. Acknowledge your privilege, biases, and assumptions. Be up front about your motives for inquiry. Listen when community members tell you about their needs. Respect their history, culture, and priorities. Create intentional opportunities for critical reflection before, during, and after the collaboration. Gathering feedback from community members is essential; incorporate that process into the plan. 	<ol style="list-style-type: none"> What have I done to gain an understanding of the community? How can I integrate community perspectives into this scientific project? What opportunities have I created for self- or group reflection? How do I reflect on my identities, privileges, and biases? See the Implicit Bias Module Series resource, p. 17. How are the community partners and I reflecting on our experiences together?
Empathy	<p>At the end of the day, scientists and community members are human beings. Empathy can help us to consider the needs, expectations, and perspectives of others.</p> <p>Consider the possible impacts of the partnership on community members’ physical and emotional well-being. Take steps to minimize harm by getting to know the perspectives and experiences of everyone.</p>	<ol style="list-style-type: none"> What steps am I taking to minimize and address harm? How can I make this collaboration a safe space for all participants? How will I support the well-being of community members? What safety measures or policies are in place to avoid and/or address harm? (For guidelines, see the anti-racism resources on p. 17.)
Collaboration	<p>Scientists and community members may operate with differing cultural norms, expectations, and ways to express themselves. Make sure that you are on the same page and in agreement when you chart out a collaboration’s purpose, desired outcomes, expected involvement, and such details as timeframes, deadlines, and capacity.</p> <p>Determine clear and realistic expectations between all participants and then draft a memorandum of understanding (MOU). Include a plan for regular check-ins. For MOU guidelines, see p. 17.</p> <p>Ensure that all voices are heard and that everyone can participate in all stages of the collaboration: planning and implementation, evaluation, and communicating outcomes.</p>	<ol style="list-style-type: none"> How will we set mutual goals and outcomes for engagement? How am I maintaining open communication with the community partner? How will the project be assessed and evaluated, and by whom? How will I make sure the plan provides for regular check-ins and opportunities to offer mutual feedback?

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TABLE 2. Focus on Values for Meaningful Engagement

CONTINUED FROM P. 7

Engagement Value	What It Means	What to Ask Yourself
Integrity	<p>Transparency and accountability from the start are essential to building trust. Base the information you gather and share with the community on questions they are asking. If you collaborate with the community on a research project, share your data and findings with community members first, before disseminating it to broader audiences. Stay in close contact with the community and raise any issues as soon as possible.</p> <p>Agree on clear steps to hold each other accountable. This includes creating a communication plan, specifying the impact you seek, and requesting regular feedback.</p>	<ol style="list-style-type: none"> 1. How am I assessing the success of the project? 2. How am I measuring outcomes and impacts? 3. How will I communicate the outcomes, and to which stakeholders and audiences? 4. How will the community and I use this information in the future? 5. If applicable, how do I plan to report on and raise funds for this work? Have I clearly communicated those plans to partners?
Equity	<p>Challenge yourself to incorporate an equity and justice framework into collaborations. Recognize that the partnership takes place within a broader context, and look for ways your work together can challenge systemic inequities.</p>	<ol style="list-style-type: none"> 1. How does this work contribute to social change? 2. How does this project challenge oppressive systems? 3. How am I working toward an equitable distribution of resources, including funding, to community partners? 4. How does this work achieve equitable outcomes?
Action	<p>Engagement is an active, ongoing process. Consider the sustainability of a partnership. For example, share plans for leadership transitions and develop plans to conclude the partnership.</p>	<ol style="list-style-type: none"> 1. How is this collaboration or its actions sustainable? 2. How will community members and I plan for changes in leadership? 3. How will we use this information for future planning?

“Scientists can use the power so inherent in the knowledge they seek to uplift the voiceless, Indigenous, the places we live in. This amplification is part of seeking equality, justice, diversity, and inclusion.”

— Jared Gonet, Taku River Tlingit First Nation citizen, Carcross Tagish First Nation community member; and Katarzyna Nowak, assistant professor and conservation scientist

Getting Started in a Collaborative Partnership

It may feel intimidating partnering with a community, but exploration, consultation, and planning can help you narrow your focus and identify the best paths forward for engagement. First, think about the role you want to play:

- What issues interest you? What issues does the community care about? The answer to either question may be broad (e.g., public health, renewable energy) or narrow (e.g., test for lead in drinking water, decide about siting a wind turbine).
- What expertise and support can you lend to the issues?

“If you want to learn how to start a community partnership, show up, shut up, eat up.”

— Rajul Pandya, program director,
American Geophysical Union
Thriving Earth Exchange

Then, think about the resources in the community:

- Who are the leading voices in the areas most affected by the issue?
- What kinds of groups work on the issues of interest?
Examples include
 - Local boards or policy councils (e.g., food, public health, transportation, waste)
 - Local environmental or civic organizations
 - Church groups
 - Neighborhood associations
 - Social justice groups
 - Public health laboratories
 - Elected officials’ offices

ENGAGING WITH COMMUNITIES GOES BEYOND SCIENTIFIC RESEARCH

Megan Adams is an ecologist who studies predator-prey systems in collaboration with members of the Wuikinuxv band of First Nations people, who accompany her and volunteer the use of their boats in return for technical training. She has found that, more often than not, the open communication needed to build strong and transparent relationships happens not during the research itself but during moments like eating and feasting together and sharing in celebration and ceremonies. She says, “I will not pretend an engaged research process comes without its challenges. . . . It has been during conversations in the local restaurant over a cup of coffee, a chat down at the wharf, or a walk to the river with the school kids that I have found space to overcome these challenges. These are the times where I have begun learning to listen.”



ESTABLISHING GUIDELINES FOR CONSTRUCTIVE PARTNERSHIPS IN CALIFORNIA

In 2014 and 2015, Mujeres de la Tierra (Mujeres), an environmental nonprofit working to empower women, collaborated with UCS to connect five communities in Los Angeles County with local scientists to help answer questions on oil and gas development. Part of the introductory process was for Mujeres and UCS to meet separately with the scientists and community representatives, so they could speak freely about their concerns and expectations for the project. This provided a comfortable, confidential place for them and encouraged them to communicate with Mujeres and UCS when needed.

Clear and concise expectations were important for both the community members and the scientists, particularly around time constraints, volunteerism, transparency, and mutual benefits and respect. Community members benefited from having more access to scientific information and experts on oil and gas development; scientists gained additional opportunities to collect data for their work and get their research in the hands of local decisionmakers. Scientists who were also faculty could involve their students in this project as a practical way of applying scientific skills in the community.



- Where can you connect to these groups? Examples include:
 - Regularly scheduled or special meetings hosted by the organizations of interest
 - Town halls
 - Educational or social events
 - Social media (e.g., a group’s Facebook page)

Feeling overwhelmed at the prospect of starting a new partnership? Consider asking a third-party connector or intermediary to help facilitate the process of connecting you with communities that need access to your scientific expertise. Such connectors include UCS, the American Association for the Advancement of Science’s On-Call Scientists, the American Geophysical Union’s Thriving Earth Exchange, SciCAN, Public Lab, and Community Action Works. For more information on these groups, see p. 18.

Through the following steps, reach out to the community group(s) you identified, while keeping in mind the engagement values in Figure 1:

1. **Reach out to the leaders or members of groups and ask to talk with them about their work.** Use the first meeting to get mutually acquainted—perhaps over coffee or a meal—without immediately diving into a proposed collaboration. Be mindful of ways in which your own thoughts and ideas might evolve over the course of the conversation. Ask questions about the group’s history. Let them know what inspired you to contact them. And actively listen.

Note: It is especially important to employ the “inquiry” process in environmental justice communities—communities of color, low-income communities, and tribal communities that are disproportionately affected by problems such as climate change, environmental contamination, and lack of access to healthy food. This is essential to understanding their historical context and in considering how your participation can help address these issues.

2. If the group is interested in pursuing a partnership, create guidelines for collaboration.

- a. Put together an action plan or a memorandum of understanding (MOU) that makes sense for both parties. Remember, shaping and finalizing the MOU may take a few rounds of discussion and revision. Include roles (e.g., what community members will do, what you will do, how the roles will support each other), deadlines, milestones, deliverables, check-ins and their frequency, and preferred modes of communication. Co-creating guidelines about how you will engage with each other will benefit the partnership and help solidify trust. The process of creating guidelines can set the tone for your partnership by ensuring that all parties treat one another with respect. And reciting the guidelines at the start of a meeting can help make a safe space in which everyone can speak freely. For guidance, refer to the Jemez Principles for Democratic Organizing, Principles of Environmental Justice, and MOU template linked on p. 17).

- b. Discuss the anticipated timeframe for the collaboration, and whether that will depend on how outside factors may shape the scope of work (e.g., a town council meeting, a funding application deadline, a regulatory comment period). A partnership can be short term or long term; length does not necessarily reflect chances for success.
- c. Assess whether you have the time and capacity to take on all the work that needs to be done. If your role, project timeline, and deliverables are not in line with what you can honestly commit to, make that clear up front; work with the group to explore potential alternatives—for example, finding a role for you that is smaller but still useful to the community or recruiting colleagues or students to assist in the work.
- d. Be up front that the facts may not necessarily support a particular course of action. And be clear that your research or analysis may not yield the specific results the group expects—and in some cases, the data might even be counter to community beliefs.
- e. At the beginning, discuss resource needs and, if applicable, compensation for both parties. Reach out to institutional or peer support systems if you have questions or need additional capacity. Community members will also need support, especially recognition of their time and knowledge. They may also deserve, need, or request compensation if they are involved in research or data collection.



SETTING COLLABORATIVE PRIORITIES FOR FOREST MANAGEMENT IN COLORADO

Through open dialogue and trust, the San Juan Headwaters Forest Health Partnership developed science-based collaborative priorities for managing and monitoring vegetation and forest health in southwestern Colorado. Before a project is initiated, San Juan Headwaters brings together land managers, businesses, community members, and environmental groups to discuss a project's needs, location, goals, and impact. This process addresses concerns and builds support for projects that are determined to be relevant and important, and not just for the local ecosystem but also for the local economy and public health.

3. Continue to build trust in the relationship with the community throughout the project.

- a. Learn from one another. Community members can share the political and historical aspects of issues of concern, as well as their own lived experience. They can share knowledge about the stakeholders involved. They can assist with collecting data or introduce scientists to decisionmakers and local journalists. Scientists or technical experts can share information about previous studies and existing data gaps. The partners can work together to write grants and reports and present results to various audiences.

- b. Communicate results and provide data. The information that scientists collect should be provided to the community partners so they can fully understand both the study’s findings and limitations. Work with the community to identify how it prefers the results to be communicated (e.g., in a written summary, in a public presentation, on a website) and whether additional formats are needed for use with relevant stakeholders and decisionmakers.

A MULTIDISCIPLINARY APPROACH TO CLIMATE JUSTICE IN THE CAROLINAS

The Carolinas Collaborative on Climate, Health, and Equity (C3HE), comprised of universities, state offices, and science-engagement organizations, is a team of physical and social scientists, tribal and community leaders, educators, students, and local subject-matter experts. Funded by the National Oceanic and Atmospheric Administration, it supports Carolinas communities that are disproportionately exposed to climate hazards and other compounding social inequities.

By integrating social science, physical science, and regional knowledge, the C3HE team coproduces solutions tailored to meet unique local needs and priorities. For example, through a planning process, the C3HE team is working with the Eastern Band of Cherokee Indians Division of Agriculture and Natural Resources to integrate climate into all aspects of tribal governance. As a first step, the team worked closely with Cherokee speakers to translate “climate change” into a Cherokee phrase with cultural value and importance. Because language is a direct representation of a peoples’ perception, knowledge, and relationship to the land, it became a priority to find meaning for this concept in the Cherokee language. This phrase is *E-lo-hi-a(d)-ste-da-li-sgv-I*, the Earth changes.

“Planning for regular two-way communication is vital to creating science that answers questions pertinent to communities and practitioners.”

— Lauren Richter, assistant professor, Northeastern University



4. **Evaluate the partnership at the end of the project.** Establishing goals and a timeline at the beginning can help give clarity around when a project is finished. That said, it often feels like there is always one more thing to do. Make the time for you and your partners to discuss what happens after you achieve your outcome or reach a milestone. Potential evaluation questions include:

- a. What worked well, particularly with regard to communication, goal-setting, implementation, and accomplishments?
- b. What would you change in how you approach future collaborations?
- c. What comes next for community action and scientific analysis?
- d. How should you transfer data, contacts, and responsibilities, and to whom?
- e. How would the partners like to keep in touch about future opportunities for collaboration?
- f. How much time would you like to spend staying involved moving forward?

UTILIZING PUBLIC HEALTH TO DEFEND HUMAN RIGHTS

In May 2020, Oxfam America requested the assistance of the AAAS On-Call Scientists Initiative in identifying an expert who could assist in building a case against the Trump administration on behalf of asylum seekers and unaccompanied children who had been excluded from the United States on public health grounds. Specifically, Oxfam sought a credible scientific expert who could testify that there was no public health justification for forcing asylum seekers to remain in Mexico, and that US Customs and Border Protection could safely allow migrants to enter if they were quarantined, screened, and given proper medical care. Further, Oxfam sought to establish that far more dangerous would be the humanitarian disaster resulting from forcing these communities into congregate settings without access to hand-washing facilities.

AAAS facilitated a partnership between Oxfam and Dr. Anju Goel, an experienced physician specializing in public health. In November 2020, in response to a lawsuit brought by Oxfam, the ACLU, and others, a US District Court blocked the administration's application of the Public Health Service Act, affirming that the pandemic could not be used as a pretext to avoid its obligations to those lawfully seeking asylum.



Identifying and Overcoming Barriers to Engaging with Communities

Scientist-community partnerships can be very rewarding for both parties. However, perceived and real barriers can hinder scientists from engaging with communities and lead them to shy away from engagement. In addition to those barriers listed in Figure 2, scientists can face conflicts of interest, and certain communities may be reluctant to collaborate.

Here are some key strategies to overcome common barriers to engagement, building on the guidance provided above.

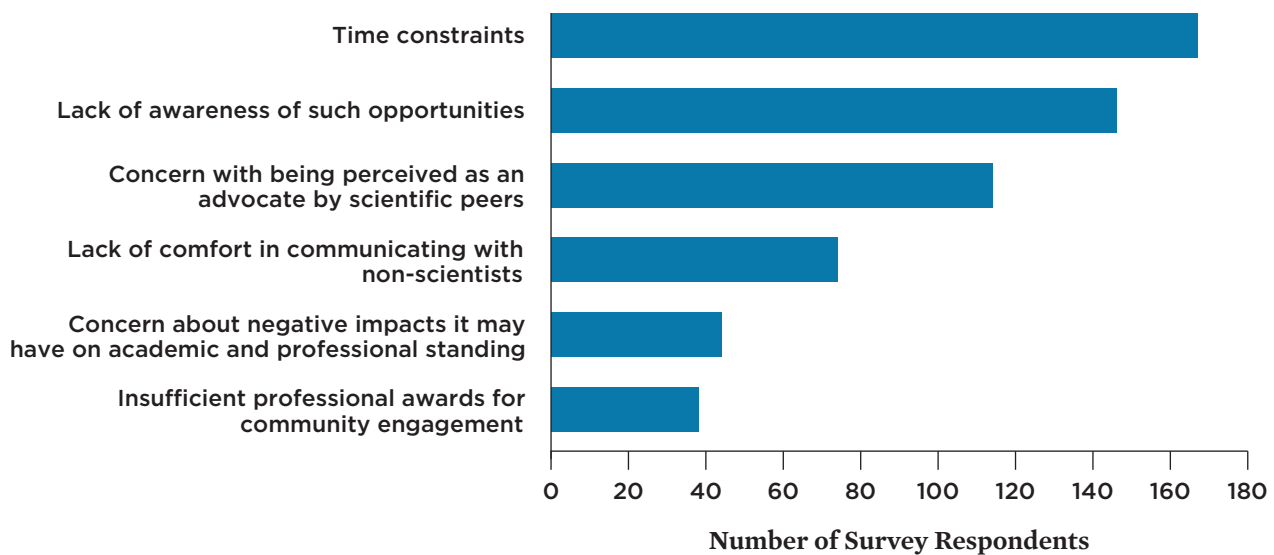
Balancing Science and Advocacy

If you have concerns that your peers or supervisors may have questions about your community work, you can take extra precautions. As part of the plan you develop with community members, be explicit about your role, the questions your data may answer, and what you will and will not address. Share this plan with your supervisor or colleagues. Acknowledge

that the pursuit of information drives your science or research, and that the collaboration is not biased to serve a specific outcome. This will help address concerns even as it sets the stage for an honest partnership. If your institution does not encourage this work, seek out others in your network or who are engaged in scientist-community partnerships and ask for their guidance and support. You can also ask third-party connectors (see p. 18) about navigating situations in which you receive pushback.

While it is important to address professional concerns with your institution or peers, you have the right to civic participation and to engage with the community. Adrian Shelley shared this anecdote at a 2015 town hall meeting on community-scientist partnerships, when he was executive director of Air Alliance Houston: “I was talking to an academic partner . . . about putting health disparities on [a] map. His institution didn’t want him to do that because mapping health

FIGURE 2. Common Challenges to Engagement That Scientists Face



In a 2023 survey of members of its Science Network, UCS asked: “What do you think are the biggest barriers for local scientists and technical experts to engage more with local community groups or policymakers?” This chart reflects the responses of 224 Science Network members; respondents could choose multiple barriers.



SCIENCE AND HERITAGE COMBINE TO GIVE HEIRLOOM SEEDS A NEW LIFE

Dream of Wild Health (DWH), a Native American nonprofit formerly known as Peta Wakan Tipi, provides agricultural and educational programs for the urban Native community of the Twin Cities. In 2000, Cora Baker, a Potawatomi elder and seed keeper, gave DWH a gift of Indigenous seeds. The organization started the Indigenous Corn Propagation Project to understand how best to grow these seeds—knowledge displaced over the years by the reservation-based commodity food system—and to help rebuild health in the Native community by returning to traditional foods of their ancestors. As part of this project, DWH partnered with the University of Minnesota; together, they raised nine varieties of Indigenous corn, with the university providing technical expertise during the growing process as well as expertise on health and nutrition curriculum.

disparities has a social agenda. . . . There’s no social justice agenda in facts. Facts do not have an agenda. It’s your responsibility as a scientist, as an organizer, as a community member, to find those facts . . . and figure out what it is you need to do with them to make life better for everybody.”

Stepping Outside Your Comfort Zone

Many scientists are nervous about communicating to non-scientists; indeed, it can be challenging to make scientific concepts accessible. Fortunately, many resources are available to scientists who are interested in becoming better communicators. With practice, communication skills will help you convey your work to not only community groups but also legislators, reporters, students, funders, and other audiences. Skills-building resources can be found on p. 18.

Identifying Opportunities in Your Own Backyard

A common barrier to engagement is a lack of knowledge about issues and challenges in your area. Opportunities for scientist-community partnerships exist in most locales, even if they might not be readily apparent. See p. 9 for a list of the types of groups that your community might have. For additional ideas, you can also contact a third-party connector (see p. 18).

Finding Support for Your Partnership

If funding or compensation will help—or even be necessary—for you and the community to collaborate on a project, resources may be available on your campus through university extension programs or public engagement centers. If you are a principal investigator and the partnership aligns with your research, you may be able to write this type of engagement into your grant proposals. You could also seek support from your institution or academic department, local foundations, government agencies, or one of the third-party connectors mentioned on p. 18. *Ensure that you apply for funding in consultation and collaboration with community partners, requesting support for both sides as needed and appropriate.*

Earning the Trust of Communities

Some groups may be reluctant to work with scientists directly, and understandably so. Too often, researchers have breached the public trust by using unethical practices such as experimenting on people without their consent, studying a community without providing it with the results, and being dismissive of community experiences and local knowledge. In other cases, communities may perceive a conflict of interest due to a researcher’s funding sources or previous work.

Such cases make it especially important to take the time to build trust and respect with the community before beginning any research or analysis. If you are not yourself part of the community you are partnering with, there may be skepticism or suspicion regarding your motives, making it more difficult to build trust.

In addition to following the trust-building and listening steps presented earlier, it may be useful to set aside time to engage with the community in ways unrelated to your research. For example, socializing with community members and participating in or contributing to community activities can strengthen trust. For more on building trust, see the frameworks on p. 17.

PUTTING WATER CONTAMINATION ON THE MAP IN OKLAHOMA

Tar Creek in Ottawa County, Oklahoma, runs through a 40-square-mile Superfund site. Mounds of toxic mining waste in the area are polluting the water and land. Flooding has exacerbated this problem because it spreads the contamination. Since 1996, Local Environmental Action Demanded (LEAD) Agency, a community-led environmental justice nonprofit, has been advocating for a cleanup of Tar Creek. LEAD Agency started a project with Thriving Earth Exchange through its partner Anthropocene Alliance and was matched with Jessica Tran, a PhD student studying environmental social sciences.

Tran quickly recognized that the community needed a tool to communicate the scope and impact of the risk. She worked with LEAD Agency's Rebecca Jim, Earl Hatley, and Martin Lively, while also gaining input from engaged community members. Together, they developed the idea of creating a publicly accessible map of flood-prone areas so that people could assess their risks. With the help of Dr. Katherine Meierdiercks of Siena College and consulting engineer Jim Kuipers, they created an interactive digital map. A series of information sessions helped the public learn how to use the map, enabling residents of Ottawa County to easily access information about flood and contamination risks to their homes, schools, businesses, and community.

Partnerships between communities and scientists can yield research that has impact, bringing about much-needed change. However, community members may feel reluctant to partner with educational institutions, many of which have caused harm, such as by perpetuating systemic injustices like racism. Today, students, faculty, alumni, staff, and community members are challenging institutional leaders to acknowledge the role of their institutions in systemic racism. To learn more about how higher education institutions are confronting their own histories of racism, the EAB (formerly the Education Advisory Board) has analyzed existing programs and initiatives across the United States and Canada. For more information on the EAB, see p. 17.

Going Beyond Repairing Harm

When collaborating with community partners, we may cause harm unintentionally. Do not just apologize and move on; go a step further and take accountability for your actions. This is part of a process called restorative justice.

As defined by the organization Amplify RJ, restorative justice is “a philosophy and set of practices, rooted in Indigenous teachings, that emphasize our interconnection by repairing relationships when harm occurs while proactively building and maintaining relationships to prevent future harm.” Restorative justice recognizes the conflict or the harm, repairs the damage, *and* creates future accountability plans so that the harm does not happen again. For resources on restorative justice, see p. 17.



Additional Tools and Resources

UCS has a wealth of information on building strong scientist-community partnerships. Visit <https://www.ucsusa.org/resources/scientist-community-partnerships> for an online version of this toolkit with clickable links, as well as links to webinars, videos, and case studies (including many of those in this toolkit). You can also share your own experiences or questions on scientist-community partnerships. *Links have been tested at the time of publication. UCS does not manage these domains and is not responsible for their content.*

Partnership-Building Principles and Frameworks

- [Union of Concerned Scientists: Building Community-Academic Partnerships](#)
UCS convened a broad array of stakeholders to discuss institutional inequities and injustices in the food system. This webpage includes frameworks for building respectful, trusted partnerships that value scientific and community knowledge and experience. It also includes examples of partnership agreements.
- [Building Community Resilience: Lessons from Frontline Leaders](#)
This paper summarizes the climate impacts, adaptation measures, and resilience experiences that a diverse group of frontline community organizers raised at the Fifth National Adaptation Forum in 2022.
- [Engaging Scientists and Engineers in Policy Coalition](#)
This coalition of scientific and engineering societies has curated resources and opportunities for scientists and technical experts who are interested in exploring the policy side of community engagement.
- [Environmental Justice Section of the Ecological Society of America](#)
This diverse group of ecologists is committed to promoting and facilitating the involvement of all ecologists in advancing environmental justice through education, research, and public engagement.

- [Community Science Framework and Discussion Guide of the Association of Science and Technology Centers](#)
This framework provides a guide and concrete strategies for practitioners and leaders to build on as they adopt and adapt community science locally.
- [Community Science Resources from the AGU Thriving Earth Exchange](#)
The Thriving Earth Exchange offers resources to support scientists and project teams interested in community science.
- [Community Science Exchange](#)
This platform supports and advances the diverse and growing group of people who do community science. It creates a space for sharing community-relevant scientific results and disseminating and recognizing the diverse outputs of community science.
- [Jemez Principles for Democratic Organizing](#)
These principles offer guidance on how to work with environmental justice organizations.
- [17 Principles of Environmental Justice](#)
Drafted and adopted in 1991 at the National People of Color Environmental Leadership Summit, these principles serve as a guidepost for the environmental justice movement.
- [Memorandum of Understanding](#)
Use this editable template to outline expectations between all participants in your project.

Centering Anti-Racism in Partnerships

- [Restorative Justice](#)
- [Science for Justice Blog Series](#)
- [Why Does the Science Network Take on Anti-Racist Work?](#)
- [Implicit Bias Module Series](#)
- [Essential guidance for exploring your institution's legacies of racism, from the EAB](#)

Third-Party Connectors

- [Union of Concerned Scientists](#)
- [Thriving Earth Exchange \(an initiative of the American Geophysical Union\)](#)
- [Community Action Works](#)
- [Public Lab \(The Public Laboratory for Open Technology and Science\)](#)
- [On-Call Scientists \(an initiative of the American Association for the Advancement of Science\)](#)
- [New England Environmental Justice Research Network](#)
- [National Science Policy Network](#)
- [SciCAN—The Science and Community Action Network](#)

Improving Communication Skills

- [Scientists as Strong Community Partners](#)
A playlist of videos includes two webinars from UCS and Coming Clean (a collaborative of environmental health and justice experts that promotes human health, environmental protection, and economic fairness): “Hear Me Out: Making Meaningful Connections through Storytelling” and “Step Out of the Silo: Science through a Community and Social Justice Lens.”
- [Storytelling to Make Meaningful Connections and Science More Inclusive](#)
Mónica I. Feliú-Mójer, vice-director of Ciencia Puerto Rico and program manager for iBiology, offers a robust collection of storytelling and science-communication resources.
- [Language Justice Toolkit](#)
Members from the Colectivo Flatlander, the Highlander Research & Education Center, and the Praxis Project have developed this resource for building movements where people can communicate across languages.
- [Countering Disinformation in Your Community](#)
This guide provides information, pathway, and tools to take meaningful, effective action to counter disinformation.

ABOUT THE AUTHORS

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Organizational affiliations are listed for identification purposes only. The opinions expressed herein do not necessarily reflect those of the individuals who reviewed it. The Union of Concerned Scientists bears sole responsibility for this guide’s contents.

NOTES

Scientist-Community Partnerships

A Scientist's Guide to Successful Collaboration

Scientist-community partnerships can bring about meaningful change and help level the playing field for communities that are being shut out of important policy discussions.

This guide can help you foster mutually beneficial and impactful collaborations in your community.

**Union of
Concerned Scientists**

www.ucsusa.org/resources/scientist-community-partnerships

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