

Moving from Participation to Partnerships: Approach to Coastal Community Science

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Introduction

Traditional stakeholder engagement models have largely represented the unidirectional production and transmission of knowledge – from the identification of problems, generation of methods, and the formulation of solutions. While this process has resulted in the creation of valuable scientific outcomes, it has consistently neglected the significance of local knowledge, dismissed the promise of long-term collaboration, and perpetuated the exclusion of historically marginalized populations. Our recommendations aim to remedy these issues through a fundamentally collaborative process that integrates unheard voices from the forefront of knowledge production in order to cement buy-in, establish equal footing in the research process, and target community-defined priorities.

Community Science is defined as the process by which scientists and communities do science together to advance one or more community priorities. Doing science includes defining questions; designing protocols; collecting and analyzing data; and interpreting the results. Our new approach will also include using scientific knowledge in decision-making and planning. Communities can be communities of geography, interest, or practice.

What is your specific differentiated recommendation?

Our specific differentiated recommendation is to create a mechanism that uses interdisciplinary and collaborative problem identification to simultaneously produce basic research and address community-defined priorities related to coastal processes and hazards. To accomplish this mission, we have identified the need for preliminary outreach and engagement that uses proven social science research methods to expand the community voice and build trust between scientists and residents. These methods include participant observation, structured and unstructured interviews, and rapport-building. Scientists will work alongside community members and leaders as equal partners to refine questions and set realistic and accomplishable goals.

What impact or value does it seek to deliver?

By foregrounding this outreach process and making it integral to the research endeavor, we ensure that multiple voices from a diverse population are heard and valued. Specifically, this approach:

- Includes voices that have traditionally been unheard in the science process - for example, indigenous communities, minority communities
- Helps democratize science through full community participation in the research process and outcome
- Builds community capacity by not only using universities as grant administrators, but also involving community-based organizations (CBO) as administrative units. This will help channel funds into local organizations that have rapport with local communities and can help facilitate community “buy-in.”
- Creates long-term involvement by the community because those most affected by the coastal processes or hazards are invested in problem/research area
- Produces both basic research outcomes and tangible community impacts
- Places value on long-term collaborative research and partnerships
- Allows for science to be communicated in ways that will be understood by non-scientists
- Builds trust among communities historically marginalized and underserved by science

Reasoning/Supporting Evidence

- Many cultural traditions and a growing body of research suggest that articulating shared values and responsibilities at the start of a cooperative project improves outcomes and impact
- Community science has ripple effects: it can change the ways scientists approach research, alter public perception of science, and generate solutions that can be shared by many different communities
- A collaborative approach increases potential for public engagement and value of scientific research
- Communities, policy makers, etc. frequently do not use valuable scientific findings because they don't recognize the linkage or relevance to their day-to-day concerns or priorities
- Coastal communities (often low-income and marginalized) are not typically involved in coastal planning/adaptation processes
- Typical ways in which scientists try to reach communities (ex stakeholder meetings) fall short of gathering diverse and marginalized voices
- Money for resilience and adaptation projects often go to privileged communities that have the resources and/or experience to participate or to highly valued economic areas
- Minority groups are often under-represented and disconnected to opportunities to engage in the science process.

Recommendations for implementation:

NSF supports projects that view community science as a collaborative and equal-partner enterprise, rather than a strictly “scientist-developed and -lead project”. Metrics and milestones will exist for all collaborators, not just the “science” PI’s

Combine community-identified coastal needs and concerns with scientific concerns and questions. Projects are designed in creative ways that **simultaneously** facilitate “basic research” and address a community-identified need.

NSF created HUB connects communities and scientists. Relationships can be initiated by community or scientists. The HUB will have access to individuals and groups with a wide range of expertise from multiple disciplines. This expertise will connect to the community through active, on the ground engagement and virtual contacts.

Community organizations are eligible for NSF funding to support their part of the collaborative project. In the past, community groups have largely “volunteered” their time through community meetings and guidance, with financial support limited to paid internships or program directors. Recognizing community groups and/or individuals as full partners, both in science and support can build strong ties of respect, collaboration, and involvement.

There are many existing examples of where this approach has been employed at a smaller scale. We recommend that NSF not reinvent the wheel in leading such an endeavor, but rather draw from existing models. The American Geophysical Union’s [Thriving Earth Exchange program](#) is one such example.