

## Feature Articles

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### Bridging the Knowledge-to-Action Gap through Community-Engaged Research

**By Paula Whitacre**

Nutmeg production workers recovering after a devastating hurricane in Grenada and health ministry staff fighting Ebola in Liberia have very different concerns to address. But in these cases and others, community-engaged research — a framework built on partnerships and dialogue between researchers and communities — has increased knowledge and improved health outcomes.

“Community-engaged research recognizes that everyone has valuable skills and knowledge to contribute to the research,” explained [Liam O’Fallon](#), coordinator of the NIEHS [Partnerships for Environmental Public Health \(PEPH\)](#). Community-engaged research operates on a spectrum, with researchers communicating their findings at one end, and community members driving the research questions or leading the research at the other end. Most often, community-engaged research falls somewhere in the middle of this spectrum.

As Mary Anne McDonald, M.A., Dr. PH., of the Duke Center for Community Research, stressed in a presentation for the center, “being the subject of research is different from being a participant in research.”

#### Community-Engaged Research in Action

[Muge Akpinar-Elci, M.D.](#), advisor to the World Health Organization (WHO) Collaborating Center on Environmental and Occupational Health in Grenada, and her team carried out community-engaged research when they wanted to learn more about respiratory health problems among nutmeg production workers in Grenada, who are mostly women. The method used to produce the spice increases these workers’ exposure to dust, mold, and humidity, and a significant number had respiratory symptoms. Just as this research was getting underway, Hurricane Ivan decimated Grenada’s nutmeg industry, meaning that farmers and workers in processing plants needed to figure out their next steps.



Nutmeg workers and researchers discuss occupational health and safety at a nutmeg-processing plant (Photo Courtesy: M. Akpinar-Elci)

While the researchers expected to study health problems, engaging with the community meant dealing with the economic impact from the Hurricane, too. Thus, Akpinar-Elci and her team expanded their research to include replacing nutmeg trees lost in the hurricane, an issue of top concern in the community. Their work with the community also produced a solar dryer that reduced nutmeg drying time from 8 to 4 weeks without producing exposure to dust, mold, and pesticides — an innovation with both health and economic benefits. A train-the-trainer program created a small group of workers who could continue to educate workers on the health and occupational hazards associated with their jobs. “Everything was designed according to community needs,” Akpinar-Elci said.

[Stephen Fawcett, Ph.D.](#), co-director of the [WHO Collaborating Center for Community Health and Development at the University of Kansas](#), and his colleagues used community-engaged research to help monitor and evaluate the Ebola response effort in Liberia. They partnered with staff from the WHO Regional Office in Africa responsible for social mobilization to reduce new cases of Ebola in West Africa. WHO Regional Office stakeholders were primarily concerned with understanding what was needed to reduce the emergence of new Ebola cases. Using skype and online technology, the University of Kansas team facilitated documentation of activities, system changes, and systematic reflection. They answered questions such as, What are we seeing? What does it mean? What are the implications for adjustment? According to Fawcett, this co-learning exercise enabled the WHO Regional Office to make recommendations for addressing future outbreaks in the region.

“Part of the community-engaged piece is to invite local stakeholders to pose the questions and take meaning out of the answers, rather than outsiders saying ‘this is what is happening and why,’” he said. In response to what they were seeing, the African partners sought to build capacity and community participation in assessment, planning, intervention, and other areas that played a role in the success of the Ebola response effort in the three affected countries.

The community stakeholders, not the researchers, determined which problems — such as community resistance and opposition — and potential solutions to pursue. As health staff identified obstacles, they could dip into the [Community Tool Box \(CTB\)](#) developed by the University of Kansas. One useful resource was the CTB’s Troubleshooting Guide, which compiles 14 common problems related to community work, with possible strategies to consider toward solving them.

### Benefits and Challenges

Fawcett identified three benefits of community-engaged research from a scientist’s perspective. “First, you can understand things better working with people who have deep knowledge of the context,” he said. “The second benefit is one of discovery — questions will emerge that illuminate the issue in a different way. There are many examples of a researcher going in with one theory, but finding something else entirely.” He also said that there is a sense of satisfaction when the scientists see community-adapted intervention improves people’s lives.

O’Fallon pointed out that community-engaged research can strengthen organizational and individual capacity of all the partners engaged in the project, not only for the issue under study but also for the future. “Sustainability is always a big question,” he said. “Community-engaged research can build organizational capacity, for example, for an organization to apply for and manage grants on its own, rather than depend on the academic institution.”



The Community Tool Box is a free, online resource offering tips and tools for taking action in communities. Participants in Liberia could access the Toolbox to develop strategies to deal with issues they identified through community-engaged research. (Photo Courtesy: S.Fawcett)

It is important to acknowledge that community-engaged research takes time, in part because it depends on building and maintaining strong relationships. “Trust is very important to build, and very easy to lose,” said Akpinar-Elci. “You can’t just come in and gather the data, then come back with your ideas and interventions.”

Both researchers and communities can also face very practical challenges when they choose this research approach. “This work is not fully rewarded in some academic and professional circles,” Fawcett said. As McDonald pointed out in her presentation, some academic journals will not accept research that has already appeared in the media—yet, many communities want to disseminate findings quickly and widely, rather than wait for journal timetables. Negotiation and discussion of expectations for communicating results in term of timing and level of detail is required. Decisions regarding communicating results, as well as many other decisions, require community members to devote time and energy to the partnership, while also managing the myriad other aspects of their lives.



A train-the-trainer workshop helped ensure that findings learned through the research remained in the community when the project ended. (Photo Courtesy: M. Akpinar-Elci)

### Time Frames and Priorities

While never easy, engaging a community takes on an added challenge when the issue of concern seems removed from everyday reality. “If the consequences are beyond the political time frame or the change would be so gradual, it is more difficult to maintain engagement and interest,” acknowledged Fawcett.

“The issues of time frame and motivation are important,” said O’Fallon. “Community residents want to participate in research projects that address their environmental health questions and concerns in a timely fashion. That’s a critical element of the dialogue.”

Yet, Akpinar-Elci noted many communities are dealing with the impacts of broader scientific questions such as climate change on a practical, every day level. For example, participants in focus groups with Caribbean health-care workers not involved in environmental health as part of their jobs identified climate-related changes they have seen, from beaches no longer above water to increased cases of asthma. “They know their practices and exposures better than we do,” she said. “Without listening to them, we can do far less.”

To Akpinar-Elci, community-engaged research requires flexibility, creativity, and the ability to accept and adapt. Fawcett suggested as a starting point: “Enter with humility.”

### NIEHS Resources for Community-Engaged Research

Here are just a few of the ways U.S. researchers, communities, and others can tap into NIEHS to conduct or learn about community-engaged research:

- The NIEHS Partnership for Environmental Public Health (PEPH) is a network of scientists, community members, educators, health-care providers, public health officials, and policymakers who share the goal of increasing the impact of environmental public health research at the local, regional, and national level. PEPH defines environmental public health as the science of

conducting and translating research into action to address environmental exposures and health risks of concern to the public. PEPH offers an [e-newsletter, webinars, podcasts, and other resources](#) as well as a [fact sheet about the network](#).

- The [Evaluation Metrics Manual](#) provides examples of tangible metrics that PEPH grantees and program staff can use for planning and evaluation.
- A range of [NIEHS-sponsored and trans-NIH programs](#) are part of the PEPH network.

The Research to Action program recently released a [Funding Opportunity announcement \(PA-16-083\)](#) that requires the meaningful involvement of communities in both data collection and translation.