CONCEPTUALIZING AND DESIGNING COLLABORATIVE SCIENCE PROJECTS

WEBINAR SUMMARY REPORT | OCTOBER 16, 2019

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ABOUT THIS DOCUMENT

Planning a collaborative research project can be challenging — it requires integrating researchers and the intended users of the science in a collaborative process that is unlike most traditional research approaches.

On October 16, 2019, the Science Collaborative hosted a panel discussion webinar highlighting the collective advice of three panelists who have helped design and manage collaborative science projects addressing a range of coastal management issues. This webinar aimed to help participants understand the key factors to consider in designing collaborative research projects. The panel discussion explored lessons learned about: 1) Conceptualizing research to ensure it addresses natural resource management needs; and 2) Designing a collaborative research process to ensure that it succeeds.

This document provides an overview of the topics discussed, emergent themes, and key takeaways offered by the panelists. The full session recording is available on the Science Collaborative's YouTube channel. Additional references and tools for people developing collaborative research proposals are available on the Science Collaborative's Applicant Resources page.

About the NERRS

The National Estuarine Research Reserve System (NERRS) is a network of 29 coastal reserves located in 24 states and Puerto Rico. Each site includes programs focused on land stewardship, research and scientific monitoring, training programs for the public and local officials, and education.

About the NERRS Science Collaborative

The NERRS Science Collaborative is a NOAA-funded program that provides grants and other support for user-driven collaborative research, assessment, and transfer activities that address critical coastal management needs identified by the reserves.

National Estuarine Research Reserve System Science Collaborative

ABOUT THE SPEAKERS

Jen West, Coastal Training Program Coordinator, Narragansett Bay NERR, Rhode Island

Jen develops and delivers training for coastal decision makers on topics ranging from climate change and wetland restoration to water resource management and facilitation techniques. She's served as the collaborative lead for a number of Science Collaborative projects, including a recent project involving wetland restoration pilot efforts at eight different reserves and a regional initiative to advance marsh resilience.

Alison Watts, Research Assistant Professor, University of New Hampshire

Alison is a civil engineer with a strong interest in water resource management and a history of successful collaborations involving municipal and watershed organizations. She has partnered with reserves on several projects over the years, the most recent of which is developing and testing environmental DNA monitoring protocols. Alison also helped lead the project, Water Integration for Squamscott-Exeter (WISE).

Nikki Dix, Research Director, Guana Tolomato Matanzas NERR, Florida

Nikki establishes research priorities and oversees monitoring programs that address local and regional management needs at her reserve. She's worked closely with a range of academic partners and natural resource managers to help guide collaborative research, including recent projects about living shorelines and oyster management.

Moderator: **Julia Wondolleck,** NERRS Science Collaborative

Julia's research and teaching focuses on the collaborative dimension of marine, coastal and terrestrial ecosystem management. Julia supports Science Collaborative project teams through the development of training and tools to help teams plan and manage their collaborative processes.

DISCUSSION OVERVIEW

ENVISIONING A NEW PROJECT

Prompt: **How do you know when you've got a good project idea?**

New projects can be inspired by a variety of sources including natural resource management needs, ongoing research activities, and community interests. They can also be the products of both spontaneous and longtime conversations among potential end users, reserves, researchers, or other interested stakeholders. An example from the discussion:

- Nikki Dix described how Christine Angelini, a new professor at a nearby university, approached the GTM Reserve and initiated a conversation about the reserve's current management needs. After that initial connection, Christine was able to work with GTM to design a three-year living shorelines project that addressed a current restoration issue and helped launch her research program. Conversely, an oyster management project in the region arose from three years of conversations with an oyster and water quality task force.

Some general advice:

- "Keep your ear to the ground" — Understand the issues in your area, and be aware of the key players who may be interested in participating.
- Be ready to seize opportunities and pursue new applications and next steps for a project or idea.
- Read the level of enthusiasm when you propose a project idea — If you don't get an enthusiastic response from a potential partner, your project idea probably isn't a good fit. If the project isn't a good fit, reassess the potential uses or end users.
- Some type of needs assessment — such as a survey, workshop, or series of phone calls — can be very helpful for designing a project around current needs, interests and research gaps.
- Establishing a shared language among collaborators is key. Be mindful that we all use jargon specific to our profession and sometimes the same words have quite different meanings. Bring humility in your efforts to communicate clearly. Create an environment where individuals feel comfortable speaking up when they don't understand something.
- Begin project planning early, and make sure potential end users see value in your project idea. Projects are more likely to be successful when community stakeholders are motivated and see value in the work.

Audience Question: **How have you balanced the need to design projects that answer specific research questions with the need to be adaptable and flexible to end user needs and feedback?**

- **A:** The need to be specific and flexible is a real tension when developing a proposal and managing a project. It helps to emphasize the overall goals and indicate some flexibility even in the project approach. We tend to believe in what we've proposed, but we have to be ready to let go of that. Be flexible and be humble; sometimes it really is for the overall good of the project to make small, and sometimes large, adjustments along the way.

Audience Question: **Do you have a preferred method for gauging needs and interests?**

- **A:** One panelist endorsed the use of "roving flip charts" to gather and prioritize ideas efficiently from a large group. During this activity, participants work in small groups, roving from one flip chart to the next, brainstorming responses to specific prompts. Participants then rotate through the flip chart stations a second time, prioritizing ideas generated during the first round. This technique has been used at many coastal workshops!
- NOAA's Office for Coastal Management has a number of tools that might be helpful for conducting needs assessments, planning projects and facilitating groups:
  - Trainings on social science basics for coastal managers, meeting facilitation and planning effective projects for coastal communities
  - And guidebooks on: Stakeholder participation, risk communication and conducting needs assessments

DESIGNING AND PLANNING A SUCCESSFUL PROJECT

Prompt: **How do you decide who to involve in a new project?**

An effective collaborative research project requires engaging the right people; projects can quickly become unwieldy if they involve everyone who may be interested in a project or idea. Project teams should carefully determine who needs to be involved, what expertise is needed, and the appropriate level of involvement for each person to ensure the success of a project. An example from the discussion:

- Jen West uses a needs assessment to gauge the interest of different people and guide the development of a project team or advisory group. For the thin-layer sediment placement project, the team relied on the eight participating reserves and a needs assessment to determine who was interested, and whose expertise would be most beneficial to what parts of the project. Layering levels of engagement for different participants - e.g., an implementation team, advisory committee, and extended project mailing list - enabled the project team to gain insight from a broad group of people and make the collaborative process more manageable.

Some general advice:

- Keep the number of collaborators to a manageable size — Having too many people involved in a project can make the process unwieldy, which hinders effective and meaningful collaboration.
- Identify "network nodes" — Know the key players in your area for specific areas of interest. Figure out the people who are connected to the groups you want to involve, and enlist their help early in your project planning.
- Don't just approach people you like or who you know are easy to work with — the right technical experts and people who understand specific needs in an area increase the impact of collaborative research projects.
- Make sure to give enough funding to the collaborative lead and for outreach activities and materials.

Audience Question: Can reserve staff serve as both end users and collaborators for a project? How do you handle cases where stakeholders might have conflicting views on what role a reserve should play?

- **A:** In some cases a reserve can readily put project findings into application and can naturally serve as an end user and collaborator for a project. For example, Nikki described how a living shorelines research project is influencing her reserve's land stewardship activities and helping shape outreach programs for other coastal land managers. For a different project, Nikki relies on an established group, the Oyster and Water Quality Task Force, to gather diverse input and help her represent a range of stakeholders as she collaborates with a research team tackling some potentially controversial oyster management questions.

Prompt: When and how have project partners and intended users been involved in ways that particularly benefited the research and its products?

As one panelist explained, coordination is not the same as collaboration, but collaboration requires coordination. Effective collaborative research involves the intended end users throughout the process and includes mechanisms for gaining insight and feedback from those end users. An example from the discussion:

- Alison Watts' project team knew that successful collaboration, both among the team and with potential end users down the road, would require effective communication for a topic as specialized as eDNA. To address this need, their partners included communications personnel that could develop content for their website, newsletters, and other products, help them coordinate, manage, and improve their internal discussions and develop external communications around eDNA methods and results.

Some general advice:

- Take advantage of a project's field sites — Workshops and meetings don't have to take place in offices or board rooms. Taking end users and stakeholders on field visits, enlisting help in field work, and letting partners see field experiments firsthand can be an effective means of building productive working relationships among collaborators, energizing supporters, and reminding people of the value of the work.

- Take advantage of existing working groups and look for ways these groups can serve in an advisory capacity for a new project.
- Consider developing a project advisory committee to provide critical insights on a topic area and the policy landscape. Committee membership can help fill needs for a project, such as providing permitting expertise or connections to key state agencies.

Audience Question: **Often academic knowledge is prioritized over other types of knowledge in research. How do you combine multiple types of knowledge?**

- **A:** Nikki shared her experience using local oyster harvesters as sounding boards for "gut-checking" results. Their firsthand experience making a living from harvesting oysters means they provide valuable ground-truthed knowledge that can give additional context to research.

Audience Question: **What if an agency is the funder and one of several users of project results?**

- **A:** Any time you have an end user or stakeholder who's also funding the project, you just have to be crystal clear about the rules and expectations, and make sure you give equal weight to all stakeholders. Be open and disclose the situation and make sure the collaborative process is balanced. Formal documents such as Memoranda of Understanding (MOUs) could be developed to explicitly clarify roles.

Prompt: **What do you know now that you wish you had known when you started with collaborative science?**

- Be thoughtful and deliberate about actions, time frames, and planning for a project. Explicitly and transparently communicate about roles, responsibilities, commitments, and expectations. This example of a team charter could be a useful model for other collaborative research projects.
- Recognize the needs and constraints of your end users as well as research collaborators. For example, timely data sharing is especially important for collaborative science, but it can be challenging to implement. Create templates for data sharing and quality assurance/quality control. Whenever you can, work with graduate students because they're often the ones collecting and managing data; more generally, know up front who you need to talk to in order to get things done.
- As you're designing and launching a project, start thinking about an end-of-project transition plan. When a collaborative project is going well, it can be tempting to think that it will keep going because it has enough momentum. In reality, once funding goes away, most projects can't continue on their own. Think about how and where important elements of a project should exist so that they continue to ensure the work has the desired impact.