# Outreach and Education as an Effective Component of a Research Project

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revised December 2025

## Introduction

More and more frequently, requests for research proposals require or strongly encourage the inclusion of an outreach (extension and communications) or education component. It is widely recognized that information and results that are generated within the research community may have receptive audiences beyond peers that read discipline-specific journals or attend discipline-specific conferences. The key is to assess a proposed research endeavor and its potential results to determine what other audience(s) might find the information useful, and what might be the best means for making that information or results available to that audience(s). A well- developed outreach and/or education component strengthens a good research project by showcasing its broader applicability and extending its impact. During Sea Grant's review process, extension, communications and education specialists and a panel of stakeholders are asked to provide feedback on proposals regarding relevance, appropriateness, and prospects for well-developed, effective outreach and/or education, all of which factor into the overall proposal rating.

## What makes a *well-developed, effective* outreach or education component?

In the context of Sea Grant's mandate, outreach and education are defined as those activities that extend or transfer relevant coastal and marine information to people in the community, or those that develop or improve the public's coastal and ocean science literacy. They can be stand-alone, one-time activities or sustained over a longer period of time. The overall goal is to effect change by providing individuals, groups, policy makers, resource managers, or institutions with science-based information to inform their actions. Several mechanisms are available to disseminate university knowledge, including:

- training targeted groups in the use or application of information, tools, monitoring protocols or sampling methods
- hosting a technical workshop or webinar for a targeted audience
- facilitating topical professional development of educators who will, in turn, share their new knowledge with their students
- demonstrating the relevant application of new information or invention to a particular audience
- writing articles for lay audiences for inclusion in newsletters or popular magazines
- giving public presentations to lay audiences
- mentoring a student in a science fair project
- hosting an educator or student intern in a research lab
- developing web-based materials including podcasts and video clips to relay information, and advertising the location appropriately
- working with media relations professionals to make newsworthy results widely known
- offer community science opportunities for individuals to participate in data collection activities

The key to ensuring that the outreach and/or education component of a research project is well-developed is *planning.* Don't leave it to the last minute when developing the research proposal. Just as you have acquired special expertise in your field of research, there are individuals who have acquired special expertise in developing and executing effective outreach and education programs. Seek one out early in the proposal development process (it does not have to be someone with Connecticut Sea Grant). That person can provide

advice or ideas based on their familiarity with the breadth of stakeholder needs or concerns or may be willing to formally collaborate and assume responsibility for the outreach or education component of the project. Always assume that the design, execution and evaluation of an effective outreach or education program will require funding; this is widely recognized by funding agencies. A minimum of five to10% of the research budget is a useful guideline. Keep in mind that the outreach or education component may be undertaken near the end or after the completion of the research project.

The following are critical elements in planning an outreach or education program:

1. Outline an assessment of need
2. Clearly identify outcome-based objective(s) **and** audience(s)
3. Develop strategies that will be undertaken to achieve the objectives(s) and reach the intended audience(s). This includes identification of the human and material resources needed.
4. Identify expected outputs and measurable outcomes
5. Indicate benchmarks by which the success of the effort will be measured
6. Specify the means for evaluating outcome
7. Offer opportunities for communications staff to go along on field work and observe lab work while project is ongoing to collect information and visual content needed to tell a compelling story.

Once the proposal is written and funded, if you have a formal outreach or education collaborator, keep them involved ***as the research progresses***. Invite them to project team meetings regularly so they are aware of what is going on. The more informed an outreach/education collaborator, the more effective and timelier the outreach or education component will be. If you don't have a formal collaborator, feel free to seek advice or guidance from one as needed, as you move towards meeting your outreach or education project obligations.

## Examples of Formal Outreach/Education Collaborations

- Formal education collaborator conducts an evaluation of Teacher Research Experiences in a marine biology laboratory. Evaluation consists of pre- and post-surveys for participants as well as follow–up interviews and observations of how the participants incorporated the experience into their classroom and curriculum.
- In consultation with a K-12 teacher and the research science team, formal education collaborator develops lesson plans based on content and scientific inquiry related to specific research in marine biology and notes the correlations to state and national science frameworks as well as ocean literacy principles.
- Formal education collaborator works with research science team to create a short video describing a scientific concept from your research that is based on a Next Generation Science Standard (NGSS) that can be used in a K-12 classroom.
- Extension collaborator identifies key contacts for stakeholder group prior to initiation of research effort, organizes meeting where research team shares results with stakeholders and resource managers, develops materials for ongoing dissemination of recommended actions to the stakeholders (e.g., fact sheet, newsletter, webpage or email blast summarizing research results) and initiates periodic follow-up with stakeholders to assess compliance with recommended actions.

- Extension collaborator works with research team to develop new GIS layer from data generated from project for inclusion in and enhancement of GIS-based community resource tool. Training of community decision- makers in the use and application of the resource tool is ongoing.
- Extension collaborator writes public audience article based on research results, incorporates results into web- based material and/or extension programming and develops means for sharing additional information with target group.
- Extension collaborator connects potential industry partners with researchers for participation in relevant applied research or demonstration projects.
- Communications collaborator coordinates interviews with local media so researcher can discuss results and implications; develops complementary video clip or podcast.
- Researcher collaborates with communications coordinator to provide interviews, information and access for photographs for Wrack Lines article, disseminates copies of article during public presentations and follows up with inquiries. Researchers can also work with communications coordinator to author article and provide multiple photographs, subject to editing revisions and photo requests of communications coordinator.

## Resources

Education and Outreach: A Guide for Scientists: http://www.tos.org/epo_guide/epo_guide.pdf

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