

Outreach and Education as an Effective Component of a Research Project

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Connecticut Sea Grant / University of Connecticut
2009 rev. December 2014

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; or
- working with media relations professionals to make newsworthy results widely known.

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. 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 to ten percent 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

Once the proposal is written and funded, if you have a formal outreach or education collaborator, keep him/her involved **as the research progresses**. Invite him/her to project team meetings regularly so he/she is aware of what is going on. The more informed an outreach/education collaborator, the more effective and timely 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.
- 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 signage and stickers for ongoing dissemination of recommended actions to the stakeholders, drafts fact sheet summarizing research results for inclusion on web page noted on signs/stickers, 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 complementary signage to share message link to additional information with target group.
- Communications collaborator coordinates interviews with local media so researcher can discuss results and implications, and develops complementary video clip or podcast.
- Communications collaborator develops PowerPoint presentation with researcher for public presentations.
- Researcher writes article on research results and implications for inclusion in Sea Grant magazine, *Wrack Lines*, disseminates copies of article during public presentations, and follows up with inquiries.

Resources

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

The National Academy of Science's Resources for Involving Scientists in Education
<http://www.nationalacademies.org/rise>