Articulating Broader Impact Statements
Maximize NSF Merit Review Scores

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Overview

1. Statement Sort
2. NSF Broader Impact Themes
3. 5 Steps to BI Statement Development
4. Sample Review & Revise

Goals

• Develop convincing broader impact statements
• Develop statements that specify a plan to achieve the broader impact
- Advance discovery while promoting teaching, training, and learning.
- Broaden participation of underrepresented groups.
- Enhance research and education infrastructure.
- Broadly disseminate results to enhance understanding.
- Provide benefits to society.

Broader Impact Themes
A well-written broader impacts section should include activities that are:

- Clearly described;
- Have a well-justified rationale; and
- Demonstrate creativity or originality, or have basis in established approaches.

The proposer should have:

- A well-organized strategy for accomplishment of clearly stated goals;
- Establish the qualifications of those responsible for the activities;
- Demonstrate sufficient resources for support.

A plan should be in place to document the results.
Overview of Steps

- Audience
- Budget
- Activities & Partners
- Project Description
- Evaluation Plan
Who is the audience?
- Government, Teachers, Students, Industry, Public, Underrepresented Groups

Why is it important to work with this audience?
- Teachers/Students:
  - Foster a scientifically literate population
  - Enhance the future workforce
  - Increase the ability to solve future challenges
  - Increase America's global competitiveness

How will you deliver your message to your audience?

1. Determine Audience
READ, REVIEW, & REVISE

Sample Statement
Decide what portion of your proposal's total research budget to allocate for BI activities.

- Factors to consider include whether
  - Full funding is required
  - Utilize in-kind funding,
  - Leverage an existing program

2. Identify Budget
READ, REVIEW, & REVISE

Sample 1
3. Select Activities

- Grounded in the literature
- Involve partners
  - Professionals with expertise in translating and presenting your science to target audience.
  - Established program at Tech
  - Individuals who specialize in education or mass communication
  - Organizations with broad networks targeting your audience
READ, REVIEW, & REVISE

Sample Statement
4. Project Description

**What does success look like? How you will demonstrate success in BI?**

<table>
<thead>
<tr>
<th>Specific</th>
<th>Observable Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurable</td>
<td>Quantifiable Indicator(s)</td>
</tr>
<tr>
<td>Audience-Based</td>
<td>Identifies the Audience</td>
</tr>
<tr>
<td>Relevant</td>
<td>Meaningful &amp; Realistic</td>
</tr>
<tr>
<td>Time-Bound</td>
<td>Specific Time Frame</td>
</tr>
<tr>
<td>Examples</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>Specific</strong></td>
<td>incorporate educational materials on aquatic invasive species</td>
</tr>
<tr>
<td><strong>Measurable</strong></td>
<td>70% of participants will report increased awareness 500 unique users to website each month</td>
</tr>
<tr>
<td><strong>Audience-Based</strong></td>
<td>workshop participants, community members</td>
</tr>
<tr>
<td><strong>Relevant</strong></td>
<td>given needs assessment trends, literature etc.</td>
</tr>
<tr>
<td><strong>Time-Bound</strong></td>
<td>at the conclusion of the workshop, three months after receiving outreach materials</td>
</tr>
</tbody>
</table>
READ, REVIEW, & REVISE

Sample 1
5. Evaluation

• Collect data on efficacy
• Plan for evaluation of BI
• Can be simple or sophisticated
  • STEM-CORE can help!
• In-depth detail not necessary BUT should demonstrate that evaluation of BI has been considered and integrated into project plan.
**Example 1:** Throughout the project we will measure students' knowledge of climate change and feelings about what they can do about it. Survey data collected will help inform decisions regarding improving the project for students and the final survey will determine how students have changed over time.

**Example 2:** To ensure that a correct and effective message is reaching this audience, survey data will be collected at the beginning of the project to determine the teachers' backgrounds and attitudes regarding climate change. To measure impact, teachers will be surveyed again after completion of the project to captures changes in attitudes and teaching practices.

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**BI Evaluation Statements**
READ, REVIEW, & REVISE

Sample 1
Statement Checklist

✓ Goals/Aims/Objectives
✓ Rationale
✓ Collaboration
✓ Activities-with Time Frame
✓ Evaluation Statement
READ, REVIEW, & REVISE

Sample 2
Goals

• Develop convincing broader impact statements
• Develop statements that specify a plan to achieve the broader impact

STEM CORE: http://www.depts.ttu.edu/stem/