Welcome to the Toolkit!

The resources and tools on this site are designed to help Researchers and BI Professionals develop projects and partnerships that will satisfy the Broader Impact requirement of National Science Foundation (NSF) proposals, and help you fulfill your interest in communicating your science.

Let’s get started: Join us at https://aris.marine.rutgers.edu/wizard/index.php

Our tools address several needs:

- Learning about Broader Impacts (BI Wizard)
- Writing BI plans (Checklist & BI Wizard)
- Reviewing proposals (BI Rubric & tutorial)
Learning about Broader Impacts

Let’s use the FAQ QuickStart page as a brief tour of what the Toolkit can do. Let’s imagine you are consulting with a researcher and they ask:

**What do you mean by societal benefits of my research? How is my research relevant to society?**

The BI Wizard offers examples of NSF’s 10 areas of investment in BI. Access the BI Wizard program elements page – It provides examples of NSF projects and how they map to the 10 investment areas. See [https://aris.marine.rutgers.edu/wizard/relevance.php](https://aris.marine.rutgers.edu/wizard/relevance.php)

**Is there a guidance document that better explains what NSF means by BI?**

Yes, the ARIS Guiding Principles (GP) document provides details on the five questions BI plans should address. It breaks down each of the five criteria NSF reviewers are instructed to use to review the BI portion of a proposal. It includes principles and questions to consider when developing a plan to address the criteria. See the GP [https://aris.marine.rutgers.edu/wizard/principles.php](https://aris.marine.rutgers.edu/wizard/principles.php)

**Can the ARIS toolkit provide a basic description of what Broader Impacts are and how to write a BI plan?**

The BI Wizard provides support in defining the key elements of an effective BI plan and provides guidance based on the experience of ARIS BI professionals. Use the 4-minute introduction video for more information about the BI Wizard and an introduction to constructing effective BI projects. See: [https://www.youtube.com/watch?v=Lvta88_ZO2k&t=12s](https://www.youtube.com/watch?v=Lvta88_ZO2k&t=12s)

**I have no idea how to work with a partner on my BI work. Is there a tool that will help me understand my partnership options?**
The partnership section of the Wizard will help provide guidance on identifying appropriate and high-quality partner(s) to accomplish BI goals. Sometimes partners will help you develop and deliver the activity and sometimes your partners are representatives of your target audience who are the intended beneficiary of the BI activity. In addition, sometimes you will work with existing relationships in your university or college, and other times you might seek a new partner (local community organization, non-profit, etc.) to achieve a specific goal or objective.


How do I select an audience that will benefit from my research?

One of the most important things to consider is the needs of the audience you are engaging. Understanding the audiences' needs and motivations for working with you will not only make a more compelling case (rationale) for funding your BI project, it will make for a positive connection and experience when funded. The video reviews some of the characteristics of target audiences and how you might think about the contact time and audience size when choosing a project. See: [https://aris.marine.rutgers.edu/wizard/audiences.php](https://aris.marine.rutgers.edu/wizard/audiences.php)

I would like to strengthen the rationale for my BI choices. Are there suggested references I can include to ground my BI statement in scholarship?

To assist researchers and project proposal writers develop effective Broader Impact projects, we have compiled a number of relevant references to assist you in your planning. These literature connections align with general [Target Audiences](https://aris.marine.rutgers.edu/wizard/audiences.php). See: [https://aris.marine.rutgers.edu/wizard/references.php](https://aris.marine.rutgers.edu/wizard/references.php).

**Literature Connections for BI Projects with Government/Policy Makers**

References for rapid or on-the-ground engagements with key audiences include:

   [https://doi.org/10.13334/memsci.2020.0264](https://doi.org/10.13334/memsci.2020.0264)

   This guide offers 10 practical steps for scientists who want to engage in science policy efforts, with a focus on state and federal policy in the United States.

   [https://www.aaas.org/sites/default/files/AAAS_Writing_with_Congress.pdf](https://www.aaas.org/sites/default/files/AAAS_Writing_with_Congress.pdf)

   Working with Congress: A Scientist’s Guide to Policy, produced by the AAAS Office of Government Relations, provides detailed information on congressional procedures and history. Now in its 3rd edition, the guide emphasizes practical advice on developing and maintaining constructive relationships with lawmakers, their staff members, and other science policy advocates in Washington, DC.
I have no idea how much I should budget for my BI work. Is there a tool that can help me?

In this section of the Wizard, you will find three examples of commonly conceived BI activities. These items are meant to be examples to help provide perspective on budgeting for Broader Impacts. See: https://aris.marine.rutgers.edu/wizard/cost.php

I need a way to share the impact of my BI project but I have no idea where to start.

A truly successful BI project engages people outside your field to understand the relevance of your research. BI activities are an excellent mechanism to not only engage the public, but also to demonstrate accountability with public funds. In this section of the Wizard, you can find evaluation resources that help tell the story of the impact of your BI project. See https://aris.marine.rutgers.edu/wizard/evaluation.php

Writing BI plans

I am ready to start writing my BI plan but need a little help getting started. Do you have a tool to help me draft an outline?

The BI Wizard will walk you through the development of an outline for your plan in five steps. The information is saved in your browser but not on our server to protect your IP. See https://aris.marine.rutgers.edu/wizard/wizard.php

I have a draft plan ready. Is there an easy way to check to see if I hit all the major points in my BI plan?

Use our BI Checklist to see if you included all the major components of a great BI project in your proposal.
Demonstration of BI Wizard

- Not a wizard so much as it is an interactive notebook
- There are two parts – Plan Elements + Wizard Steps
- Designed to be a note collector to support plan/proposal writing and outlining

1. Go to “Pulling it all together” like a researcher who just wants to get started!
Note, information is only saved locally in your web browser and is not shared with our server. You can only work on one BI project at a time, currently. Hope to add reset button. When you are done, you can copy all your work from the summary page. This will give you the notes you need to continue your work on the BI elements of your actual proposal. This guidance is not university or funding agency specific (though focus is NSF). Note that even different directorates and RFPs at NSF differ.

Step 1 – Relevance: Start with the end goal first (Backwards Design).

This page allows you to articulate what is important about your research and how it might be relevant to the audience you have selected.

Step 2 – Who will you engage?

You can click on audience link to select audience type and then go back to Summary to see literature link.
Step 3: How will you do it?

In this section, you will write about how you will accomplish your project, which includes identifying the resources you need, budgeting for them, and making sure your project is successful by having an appropriate evaluation plan or partner. Use the SMART tool to make sure your objectives are Specific, Measurable, Action-based, Relevant, and Time-bound.

Step 4 & 5: How will you know you have done it? Summary Page!

In this step, you are encouraged to re-read your BI Plan and ask yourself these important questions:

- Does the BI project address one/more of the target outcomes for BI activities outlined by NSF?
- What is the potential for the proposed activity to benefit society and contribute to achievement of specific desired societal outcomes?
- To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
- Is the plan for carrying out the proposed activities well-reasoned, well organized, and based on a sound rationale?
- Does the plan incorporate a mechanism to assess success?
- How well qualified is the individual, team, or institution to conduct the proposed activities?

Reviewing proposals

I have been asked to be a red team reviewer at my university for a large scale proposal to NSF. Do you have a tool that will help me provide substantive review of the BI?
Access our BI Rubric to benchmark and review your proposal. If you are not familiar with BI, use the Guiding Principles document to get familiar with the questions.

I have been asked to be a reviewer on an NSF panel. Do you have a tool that will help me provide substantive review of the BI?

Use the BI rubric tutorial to help learn how to apply the rubric in preparation for a panel review.