

Welcome! We're warming up and networking..



Meet and greet others,
Learn a bit about their
research interests –

*- and share some of your
own.*

Work your way around
the room!



RUTGERS

Climate and Energy Institute

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The Rutgers Climate and Energy Institute seeks to contribute to a resilient, equitable, and sustainable climate future. RCEI connects faculty, staff, and students through transformative climate change research, innovation, education, and outreach.

Welcome *from* Dr. Marjorie Kaplan, RCEI

Rutgers Climate and Energy Institute seeks to contribute to a resilient, equitable and sustainable climate future. RCEI connects faculty, staff, and students through transformative climate change research, innovation, education, and outreach.



Julie Lockwood, Interim Director

	Focus Areas		
	 Earth System Science	 Human Dimensions of Climate Mitigation, Adaptation, and Resilience	
	 Renewable Energy, Technology and Energy Conservation	 Climate Change Communication and Environmental Humanities	

Signature Initiatives

Wind Energy Test (W.E.T.) Center Project

Center on Sustainability and Governance in the Anthropocene (C-SAGA)

Rutgers Climate and Energy Convergence Cafés

- Informal Gatherings
- Research Theme
- Transdisciplinary Connections & Partnerships

Groundwork Grants

Curriculum

Student Support Program

 Katherine Cann Ph.D. Candidate, Geography Travel Years: 2023, 2022	 Lois Anderson Ph.D. Candidate, Oceanography Travel Year: 2023	 Mashun Oti Ph.D. Candidate, Anthropology Travel Year: 2023	 Manasa Bollempalli Ph.D. Candidate, Global Affairs, Rutgers Newark Travel Year: 2023	 Laurian Rosa Rosa Ph.D. Candidate, Geography Travel Year: 2023
 Frederic Traylor Ph.D. Candidate, Sociology Travel Year: 2023	 Kassia Symstad Ph.D. Candidate, Atmospheric Science	 Alexis Faulborn Ph.D. Candidate, Plant Biology	 Amanda Sie Ph.D. Candidate, Sociology Travel Year: 2023	 Dhruv Gangadharan Ph.D. Candidate, Geography Travel Year: 2023



rcei.rutgers.edu

Welcome to the Workshop

The logo for ARIS consists of the letters 'A', 'R', 'I', and 'S' in a bold, teal, sans-serif font. Each letter is split horizontally into two parts, with a white gap between the top and bottom halves. The 'A' and 'S' are on the left and right respectively, while 'R' and 'I' are in the middle. The letters are closely spaced but distinct.

ARIS

Advancing Research Impact in Society

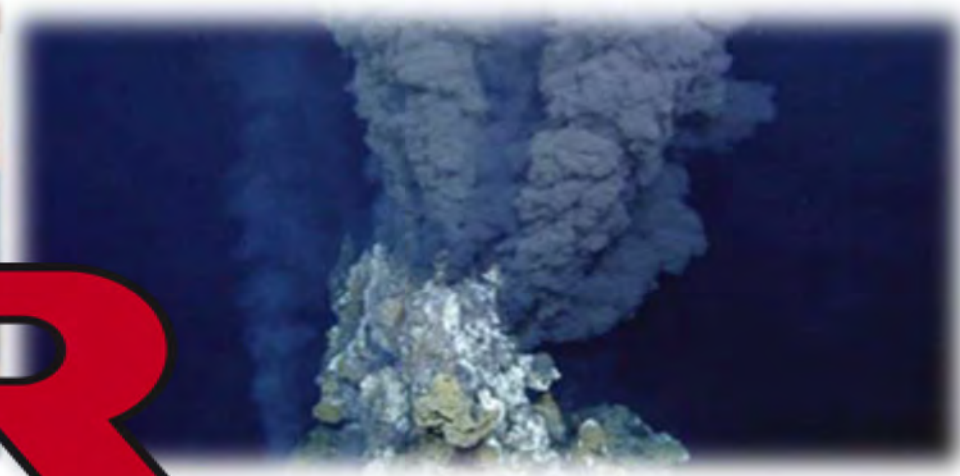
ARIS Mission

Amplify the impacts of research for the benefit of society.

- Serves as the hub for expertise in and the promotion of research impacts.
- Advances scholarship, builds and stewards a growing field of practice and community of professionals,
- Supports investigators from diverse fields and the professionals and partners who collaborate with them to achieve societal impact.
- Partners with the NSF and other U.S.-based and international organizations, to prioritize research impacts for societal benefit.

ARIS





R

Fun Facts

I have been writing Broader Impact sections of proposals since 1995



This is my 20th presentation to faculty on Broader Impacts since 2018.



Examples

Michigan State
(2018) 122 faculty

Arizona State (2019)
45 faculty

University of
Arkansas (2019) -
110 faculty

CUNY (2024) 91
faculty



Agenda

Part I: Broader Impacts... the Foundations

- What are our assumptions about BI?
- What is BI?
- Five things you need to know about Broader Impacts (BI)
- Creating a BI plan with a WOW factor:
Introduction to the ARIS toolkit
- Local heroes/examples in BI

Rankings by total R&D expenditures

Historical rankings based on the total R&D expenditures are provided in the table below. Data may be sorted by rank within each year.

To view selected data for a specific institution, click on the institution name.

[Download in Excel Format](#) 

Institution 	2022			2021			2020			2019		
	Rank 	Percentile	R&D expenditures	Rank 	Percentile	R&D expenditures	Rank 	Percentile	R&D expenditures	Rank 	Percentile	R&D expenditures
Total R&D expenditures	97,836,406			89,833,464			86,440,092			83,643,222		
Johns Hopkins U. ^[1]	1	99.9	3,420,312	1	99.9	3,181,385	1	99.9	3,110,494	1	99.9	2,917,436
U. California, San Francisco	2	99.8	1,805,950	2	99.8	1,710,036	3	99.7	1,651,073	3	99.7	1,595,098
U. Pennsylvania	3	99.7	1,791,311	4	99.6	1,631,950	4	99.6	1,579,364	4	99.6	1,506,285
U. Michigan, Ann Arbor	4	99.6	1,770,708	3	99.7	1,639,645	2	99.8	1,673,862	2	99.8	1,675,805
U. Washington, Seattle	5	99.4	1,559,708	5	99.4	1,488,645	5	99.4	1,456,902	5	99.4	1,425,601
U. California, Los Angeles	6	99.3	1,536,197	6	99.3	1,454,880	7	99.2	1,392,941	7	99.2	1,306,376
U. California, San Diego	7	99.2	1,533,357	7	99.2	1,425,499	6	99.3	1,403,735	6	99.3	1,353,763
U. Wisconsin-Madison	8	99.1	1,523,513	8	99.1	1,380,075	8	99.1	1,363,931	8	99.1	1,297,331
Duke U.	9	99	1,390,538	11	98.8	1,237,686	11	98.8	1,196,638	10	98.9	1,226,517
Stanford U.	10	98.9	1,384,555	9	99	1,274,483	10	98.9	1,203,950	11	98.8	1,204,116
Ohio State U., The	11	98.8	1,363,388	12	98.7	1,236,111	24	97.4	968,260	25	97.3	929,250
U. North Carolina, The, Chapel Hill	12	98.6	1,361,028	13	98.6	1,205,883	13	98.6	1,159,725	12	98.7	1,153,773



R&D Expenditures, financed by the National Science Foundation, ranked by NSF R&D expenditures, FY 2022

(Dollars in thousands)		
Institution	Rank	NSF R&D expenditures
All Rutgers Campuses	40	48,406
Rutgers, State U. New Jersey, New Brunswick	46	42,275
Rutgers, State U. New Jersey, Newark	178	5,008
Rutgers, State U. New Jersey, Camden	323	1,123

Intellectual Merit & Broader Impacts



INTELLECTUAL MERIT – The potential of a project to advance knowledge and understanding within its own field or across different fields.

BROADER IMPACTS – The potential of a project to benefit society or advance desired societal outcomes.

Broader Impacts Basics

- Your research **CAN BE** the broader impact
- Can be directly related to your project
- Can be supported by or complementary to the project



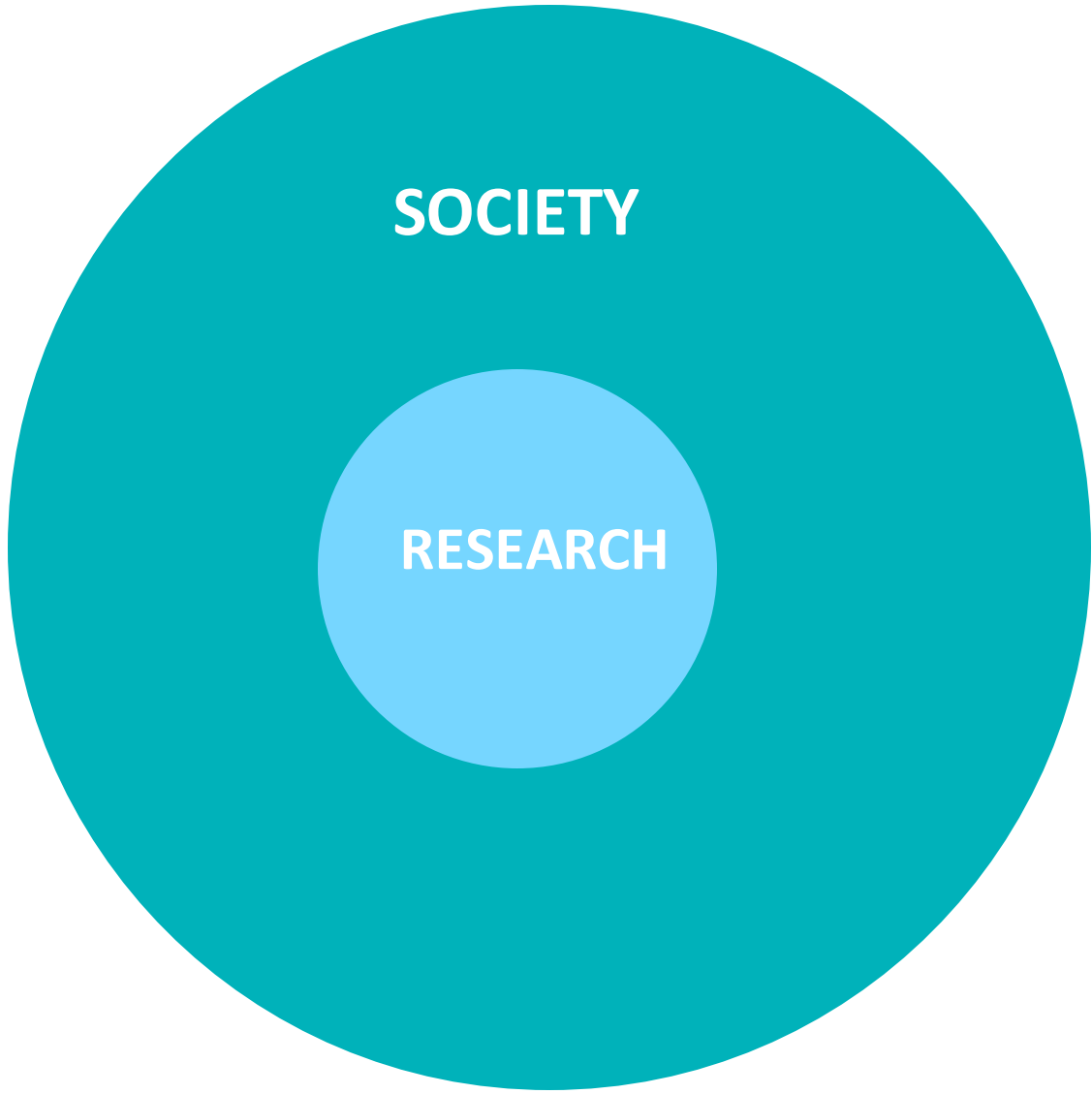
The **BEST** broader impacts plans are seamlessly integrated into the research.

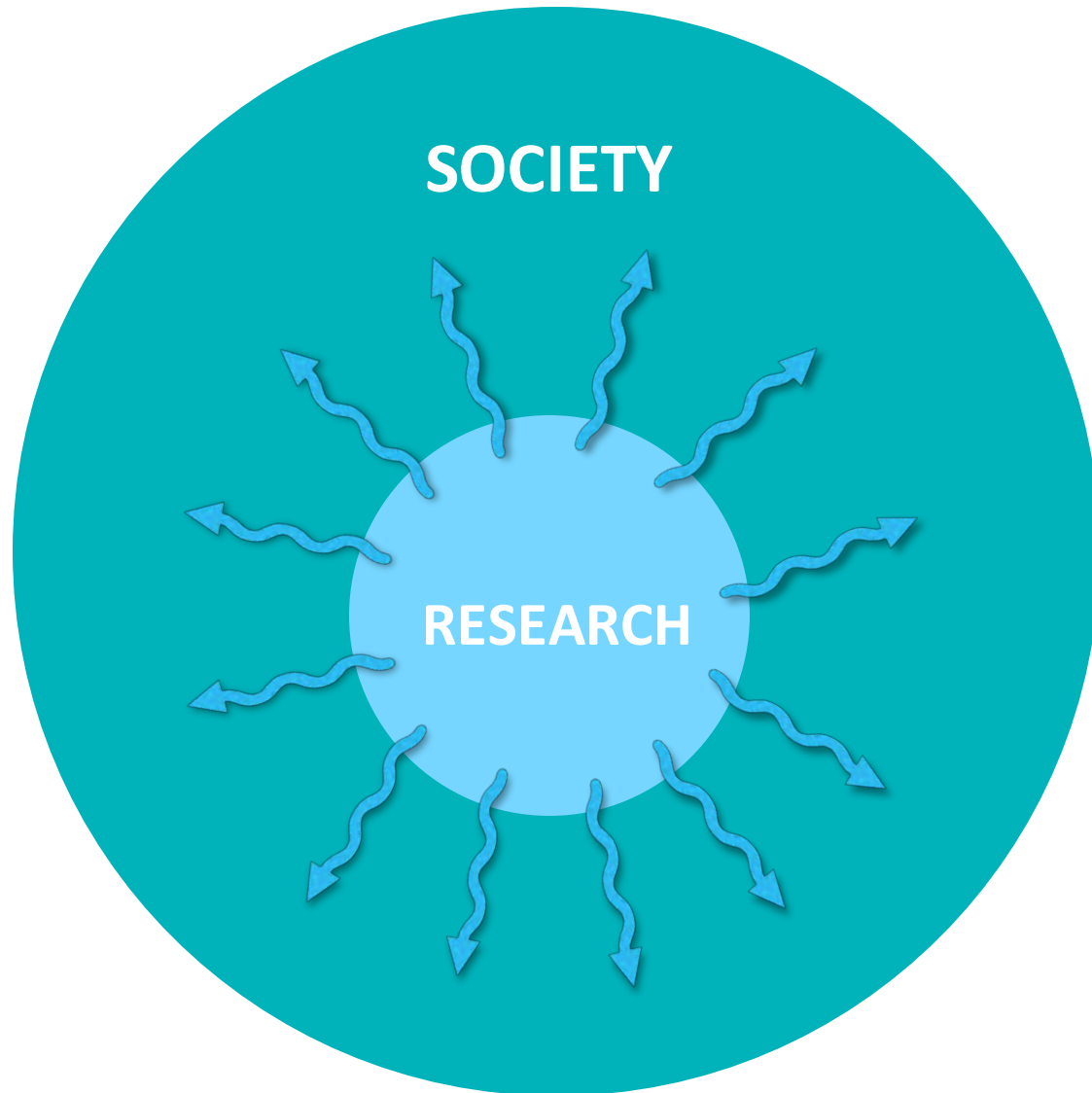
National Science Foundation grant reviewers urged to think more about 'societal benefits'

Agency's governing board expected to recommend renaming one of two criteria used to judge research proposals

23 FEB 2024 • 12:15 PM ET • BY [JEFFREY MERVIS](#)

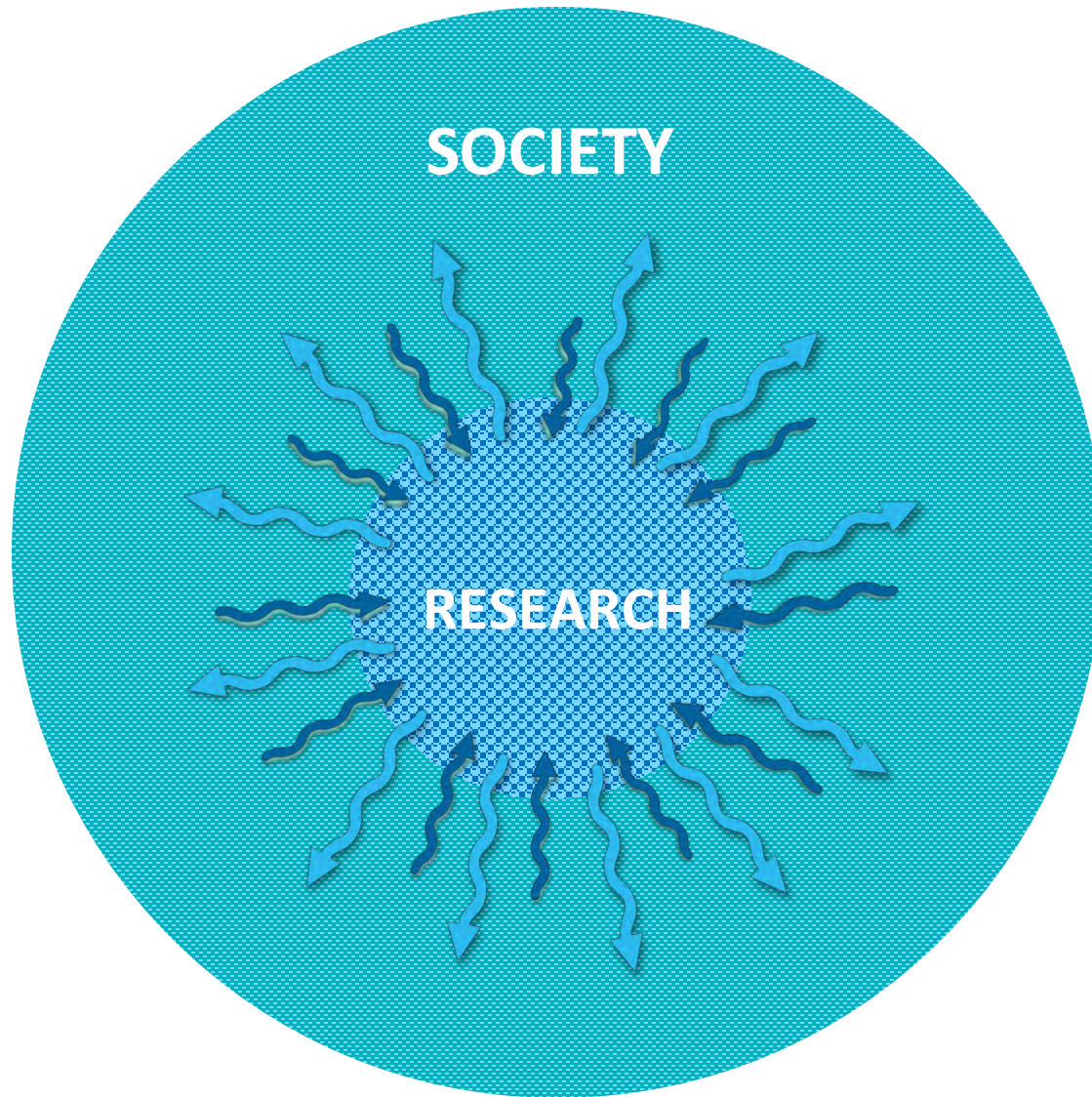






**Impact is
a social process**

Impact is a social process

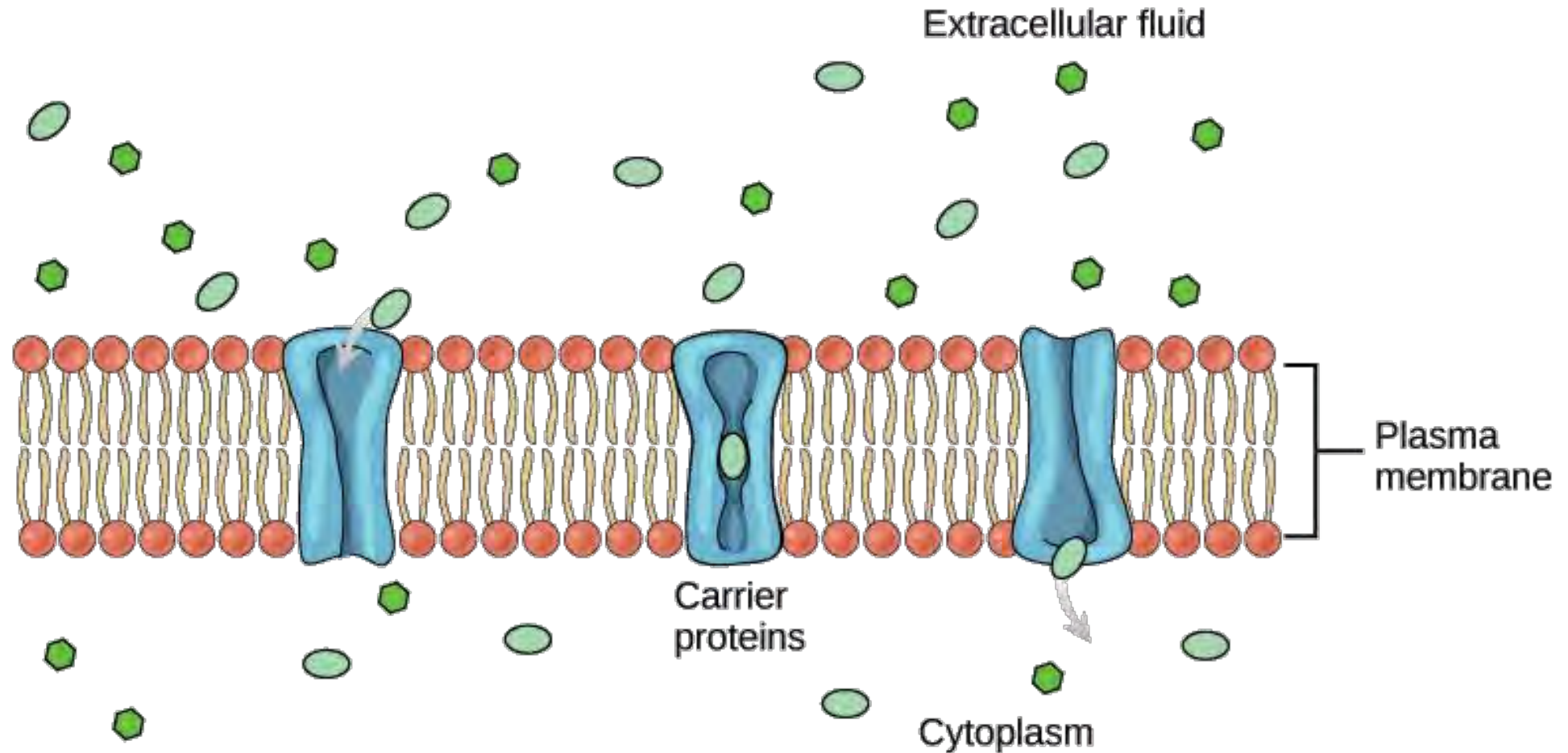


But also . . .

- ✓ Provable
- ✓ Effects/benefits
- ✓ From the research!
- ✓ *Real world*

Impact is a social process

Rutgers
Collaborative
Center and
other
partners!



What are your assumptions about Broader Impacts?



Determining the Societal Relevance of your Research

How can you convert the scientific questions you propose into messages relevant to your audience (beyond your peers)?

Goal: Understand which aspects of your research are most relevant and what you should prioritize as you share your research beyond your peers.



NSF-Suggested Areas of Impact



1. Full participation of women, persons with disabilities, and **underrepresented** minorities **in STEM**
2. Improved **STEM education** and **educator development** at any level
3. Increased public **scientific literacy** and **public engagement** with science and technology
4. Improved **well-being of individuals** in society
5. Development of a diverse, globally competitive STEM **workforce**
6. Increased partnerships between **academia, industry**, and others
7. Improved **national security**
8. Increased **economic competitiveness** of the United States
9. Enhanced **infrastructure** for research and education
10. Use of science and technology to inform **public policy**

The Big Challenge

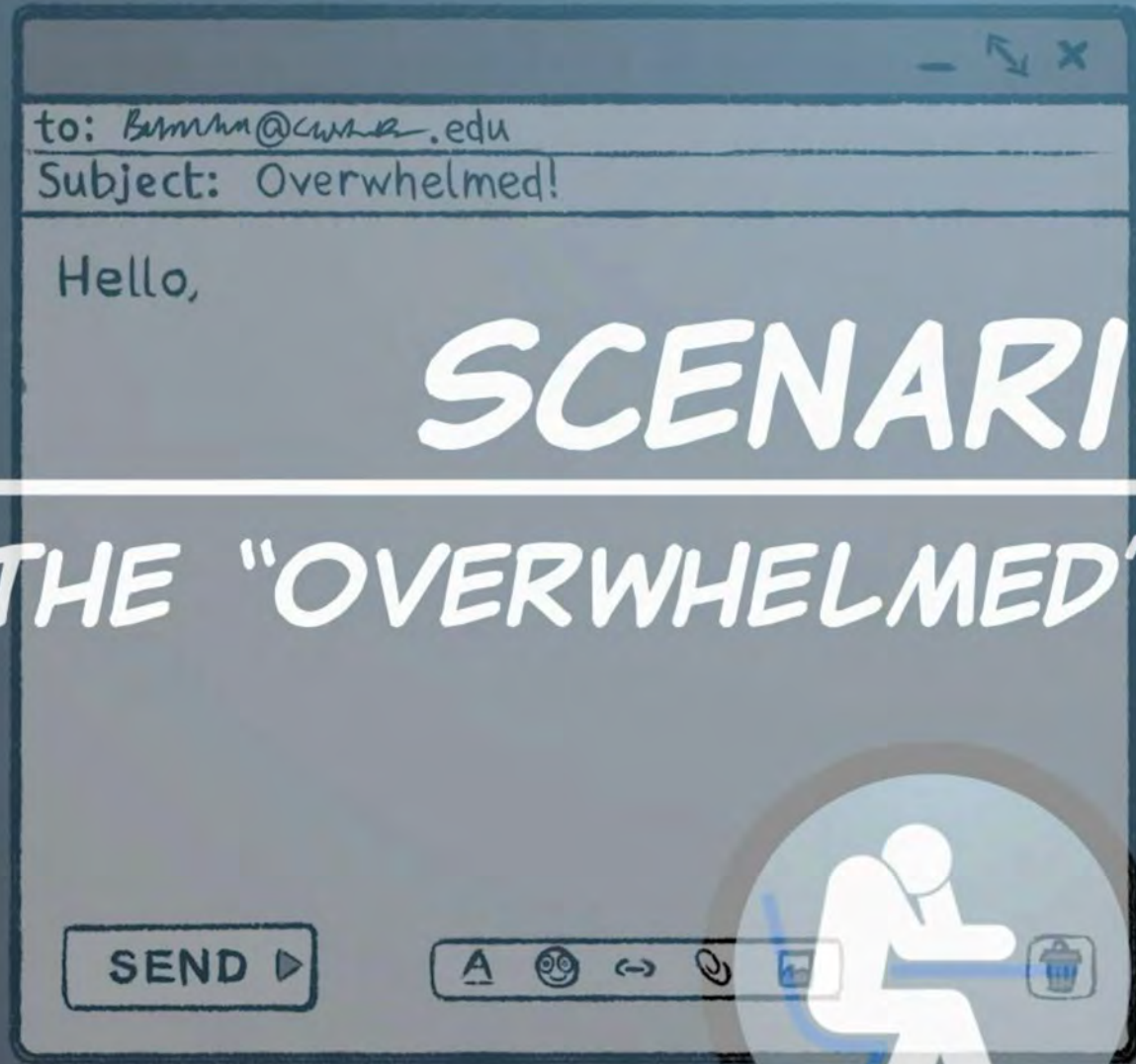
DESIRE

to create innovative, impactful and evidence-based broader impact activities with strong evaluation plans.



REALITY

- Small budgets
- Resources
- Lack of expertise
evaluation
education
outreach
- Lack of time



SCENARIO #1

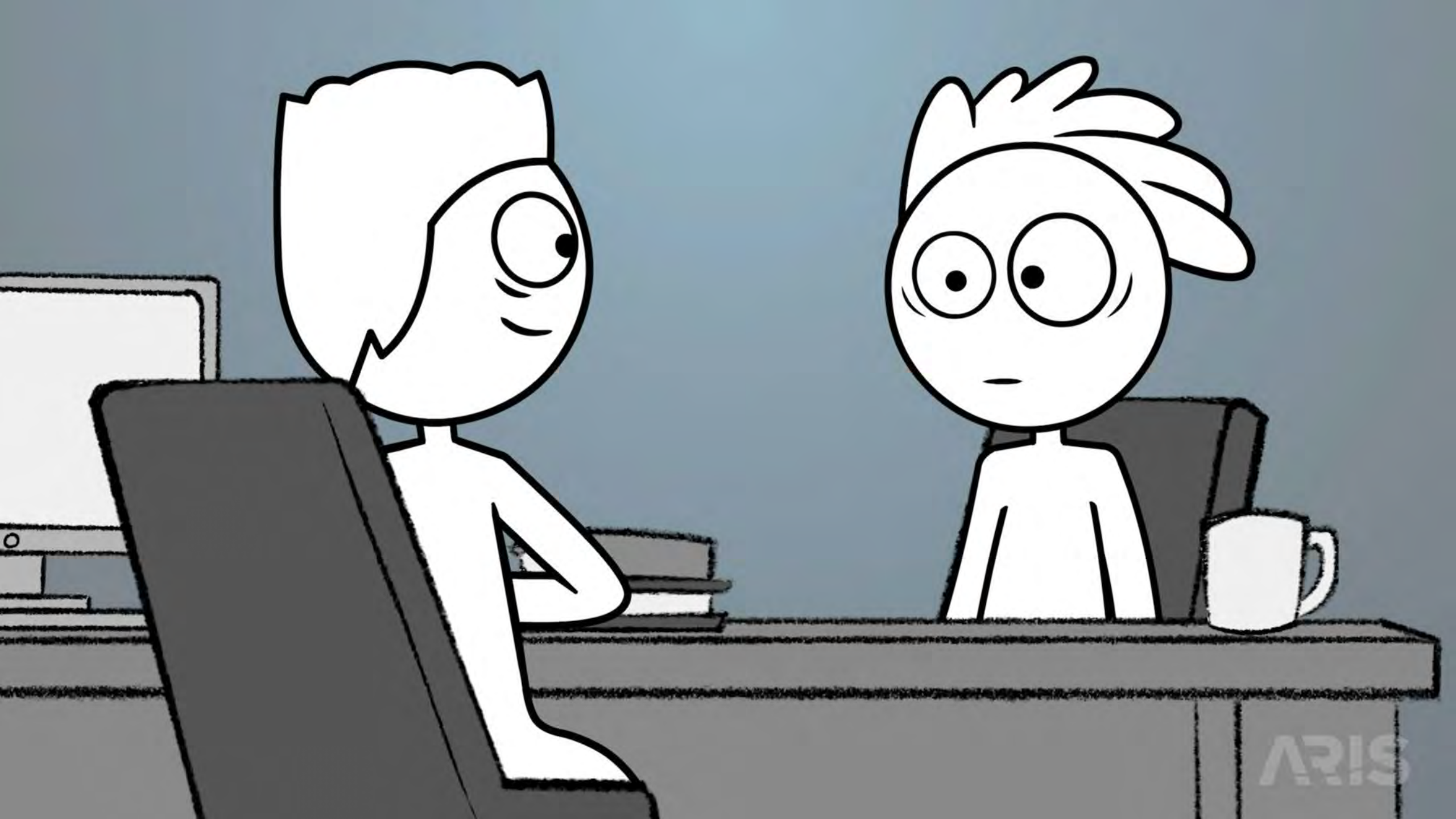
THE "OVERWHELMED" RESEARCHER



Ask yourself these four questions:

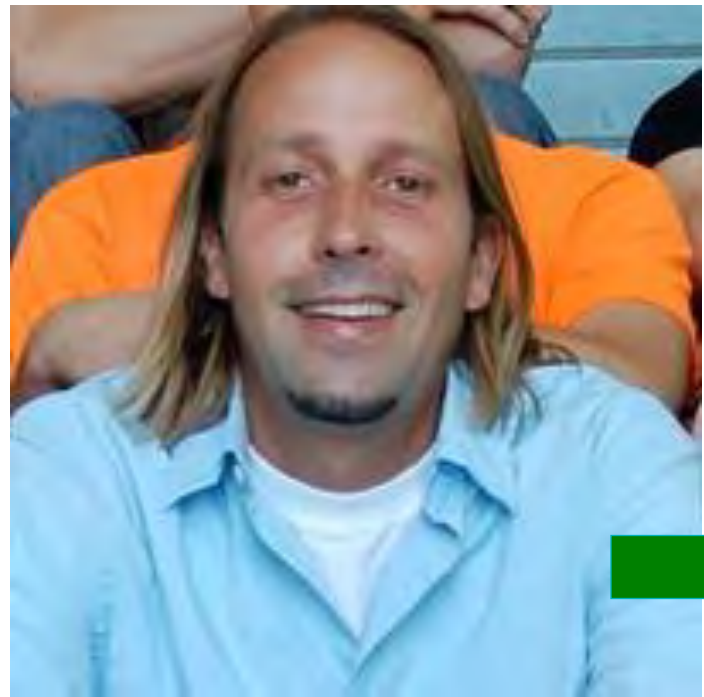
1. What parts of my research do I really want to share?
2. What are my hobbies?
What do I like doing?
3. What do I hate doing?
4. What things are I juggling?





ARIS

Dr. Kay Bidle, Rutgers University

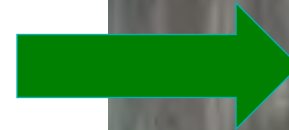


K-12 Teacher Professional Development

Talk Pulse of the Planet series at Liberty Science Center



Tools of Science begins...!



Tools of Science expands!

Teacher engagement and data literacy



Tools of Science Project-

<https://www.youtube.com/@ToolsofScience/videos>



Tools of Science: Creativity

267 views • 1 month ago



Tools of Science Case Study:
E•NIG•MA

6.8K views • 3 years ago



Tools of Science: Data as a Tool

17K views • 4 years ago



Tools of Science: Modeling

90K views • 5 years ago



Tools of Science: Testable
Questions

41K views • 5 years ago



Tools of Science: Proxies

2.3K views • 5 years ago



Tools of Science: Sampling

5.4K views • 5 years ago



Tools of Science: Collaboration

4.6K views • 5 years ago

Case Study #2

Dr. Oscar Schofield, Rutgers University



COOL Classroom



Feature documentary films



Two National curricula reaching
10,000 + youth



YOU'RE THE EXPERT





ANTARCTIC EDGE

70° SOUTH

WATCH THE TRAILER



MASON GROSS SCHOOL OF THE ARTS PRESENTS A FILM BY DENA SEIDEL

EXECUTIVE PRODUCER RICK LUDESCHER CO-PRODUCERS STEVE HOLLOWAY XENIA MORIN AND CHRIS LINDER

CINEMATOGRAPHY BY CHRIS LINDER AND DENA SEIDEL EDITED BY STEVE HOLLOWAY DENA SEIDEL AND RYAN HARRIS

POLAR EXPLORER ADVENTURES

Data to the Rescue – At Home Adventure

Pack your bags and head off to the Western Antarctic Peninsula with Dr. Megan Cimino! Use data to understand how the Adélie penguin population is changing with the climate. Get creative and communicate science with a Data Jam!



[Start your own Penguin Adventure](#)

Data to the Rescue – Club Version

Educators and Club Leaders: Download our Facilitator's Guide, Student Research Journal and more to use our hybrid *Data to the Rescue Club* program in your class or afterschool club activity.



[Data to the Rescue Club Version](#)

Other Polar Scientist Adventures

Check out our additional Polar Scientist Adventures to learn more about science in the Arctic and Antarctic regions. You'll meet the young scientists who work there and the tools they use. Earn a digital Polar Explorer badge for each adventure you complete!

Ice Moves



Glaciers in Greenland



Ancient Antarctica



Fire in the Arctic



People in the Arctic



Streams in the Dry Valleys



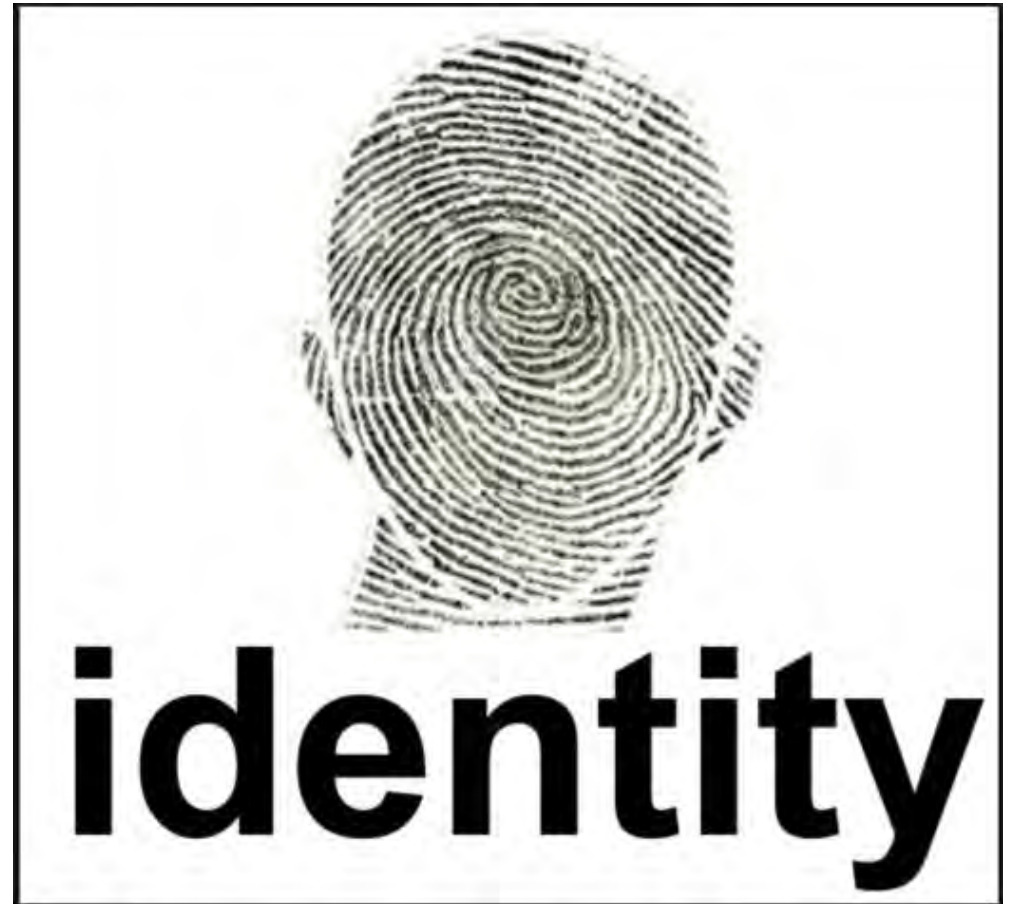
Lakes in the Dry Valleys



Build your Broader Impact Identity

Ask yourself:

- *How will I engage others*
- *How will they benefit*
- *What is my legacy in my research, teaching, and service.*



Getting Started: The Process for Articulating your BI Identity

3 minutes to jot down your personal thoughts on one/more question

5 minutes to talk at your table with a partner



1. What parts of your research do you really want to share?
2. What are your hobbies?
3. What do you NOT like to do?
4. What things are you juggling?

ARIS Broader Impacts 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.

<http://aris.marine.rutgers.edu>

This site is brought to you by the [Center for Advancing Research Impact in Society \(ARIS\)](#) and [Rutgers University](#).



Guiding Principles

What does NSF require?

Get a high-level overview of societally relevant outcomes and review criteria specified by NSF



Planning Checklist

What elements are needed in a BI project?

Use this list to review the key elements of an effective BI project proposal



BI Wizard

How to I develop my BI project proposal?

Our wizard will walk you through all of the key steps to building partnerships and an effective project



BI Project Rubric

How to I assess my project's potential?

Use this rubric to help you evaluate a Broader Impact project plan

Broader Impacts Guiding Principles

The ARIS Community has put together a [Broader Impacts Guiding Principles](#) for National Science Foundation Proposals.

This new version is designed to assist National Science Foundation (NSF) program managers, proposal reviewers, and review panels, in evaluating the broader impacts (BI) component of NSF proposals and to assist proposers with developing their BI plans. This document also creates an opportunity for proposers to think critically about how their BI activities will incorporate into their research portfolio over time and begin to develop their *impact identity*.




Get the Guiding Principles Document

<https://aris.marine.rutgers.edu/principles.php>

Objective





Develop Effective Broader Impacts that are:



 BROADER IMPACTS
WIZARD

PLANNING GUIDE

Introduction

 Who will I engage? Partners Target Audiences How much will this cost? How is my research relevant to society? Building a BI Identity How will I know if my BI project is successful?

PROJECT PLANNING TOOL

Introduction

 Relevance Audience

An Introduction to Planning Broader Impact Projects

The BI Wizard provides support in defining the key elements of your BI plan. The Wizard will help researchers answer these important questions:

- Who will I work with?
- How and where will I work with them?
- What effective practices support my proposed approach?
- How will I know if I have been successful/effective?
- And how much will all this cost?

The BI Wizard provides guidance based on the experience of ARIS BI professionals. Please watch the video above for information about the BI Wizard and an introduction to constructing effective BI projects.



New Version 2.0! In response to feedback from the community, the ARIS BI Wizard was fully redesigned and updated on March 15, 2023. Please [let us know](#) what you think.



THE WIZARD

Pitfalls in Broader Impacts



How do you document and tell the story of your success?



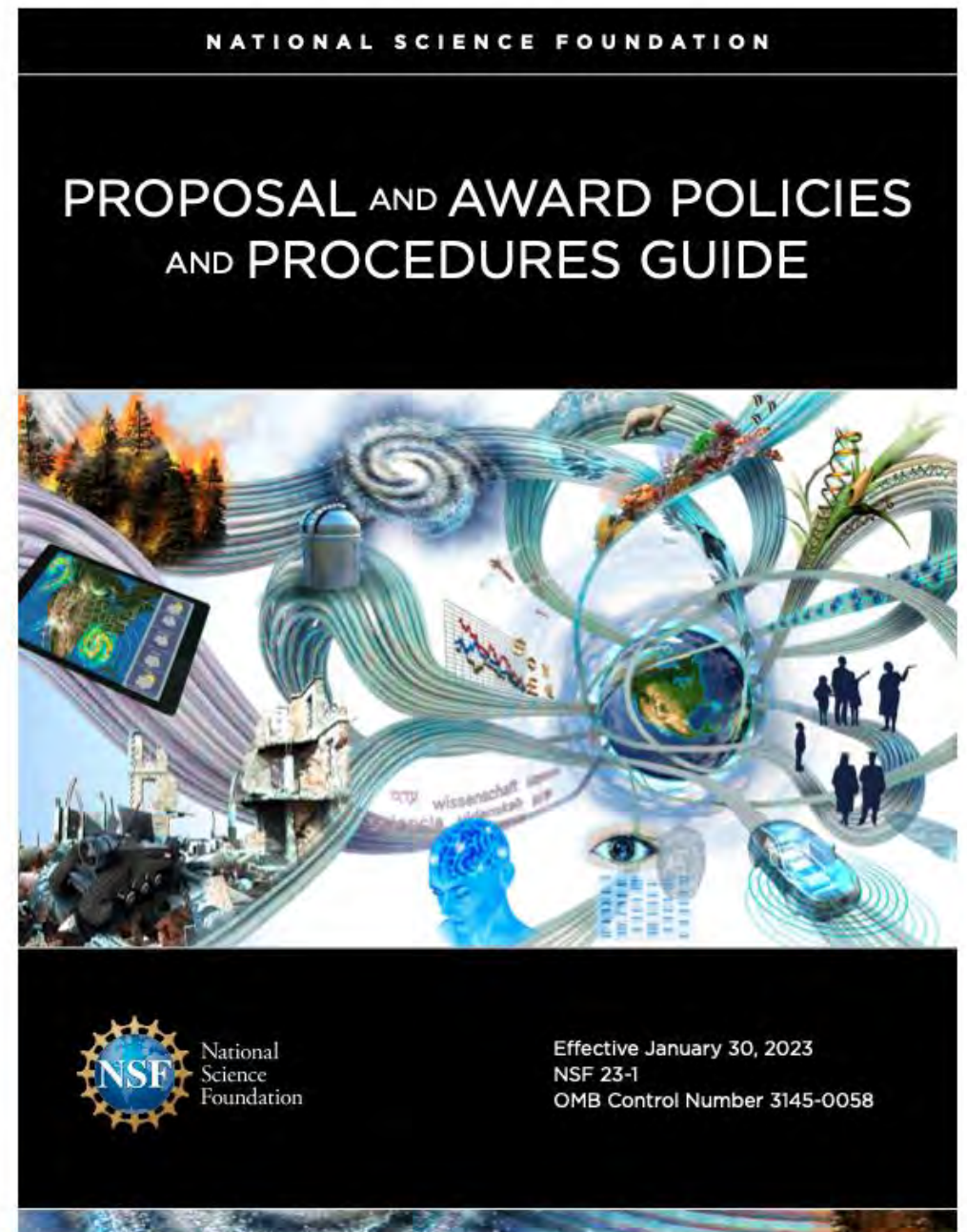
Collect data to support your claims

Can be simple or sophisticated based on your needs

Work with an evaluation expert in-house or consultant

Evaluation *per the NSF*

Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects.



Broader Impacts Plan Checklist

This checklist was developed from the [NABI Guiding Principles document](#) as a quick assessment to help you gage the completeness of your BI Plan.

You can use this checklist to check off the items you have addressed in your plan. Then, review the items you have not addressed, and consider adding text to your proposal to address them.

1) Does the BI project address one/more of the target outcomes for BI activities outlined by NSF (check all that apply)

- Full participation of women, persons with disabilities, and underrepresented minorities in STEM
- Improved STEM education and educator development at any level
- Increased public scientific literacy and public engagement with science and technology
- Improved well-being of individuals in society
- Development of a diverse, globally competitive STEM workforce
- Increased partnerships between academia, industry, and others
- Improved national security
- Increased economic competitiveness of the United States
- Enhanced infrastructure for research and education

2) What is the potential for the proposed activity to benefit society and contribute to achievement of specific desired societal outcomes?

Participants/Audience

- Is the audience defined?
- Are the needs of the audience described?
- Is the size of the audience (# engaged participants) articulated?

BI Project Benefits to Society

- Does the project address a societal need?
- Are the benefits to the participant/audience described?
- Is the length of engagement with the participant/audience described and adequate?
- Is there a mechanism described for reaching the participant/audience?

3) To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?

Potential to be Transformative

- Does the proposed BI project utilize evidence-based principles, practices, and methods (and if so, to what degree)?
- Does the project transform knowledge of the PI's science for the

4) 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?

BI Project Description

- Are the goals and objectives of the BI project clearly defined?
- Is the justification for the BI project clearly articulated?

ARIS Tool Kit

Broader Impacts Plan Rubric

Question 1: What is the potential for the proposed activity to benefit society or advance desired social outcomes?

Excellent Job!	Very Good Job!	Good - You are headed in the right direction.	Fair - Reconsider your approach?	Poor - Needs Work?
Target audience characteristics: The characteristics of the target audience, including who they are, where they are located, and how many will be engaged are clearly described. The target audience is well-aligned with project objectives.				
Participants are clearly described. The description includes strong details about who participants are and how many will engage in the project. The target audience is very well-aligned with project objectives. There are strong letters of collaboration.	Participants are described. The description includes details about who participants are and how many will engage in the project. The target audience is generally well-aligned with project objectives. There are letters of collaboration.	Participants are somewhat clearly described. There is some information on who participants are and how many will engage in the project. The target audience is somewhat well-aligned with project objectives.	Participants are not well described. There is little information on who participants are and how many will engage in the project. It is unclear if the target audience is well-aligned with project objectives.	Participants are not described. There is no information on who participants are and how many will engage in the project.
Target audience engagement: The mechanisms for engaging the target audience are clearly described and well-aligned with project objectives.				
Mechanisms for engaging participants in the project are very clearly described and well-aligned with project objectives.	Mechanisms for engaging participants in the project are described and generally well-aligned with project objectives.	Mechanisms for engaging participants in the project are somewhat clearly described and somewhat well-aligned with project objectives.	Mechanisms for engaging participants in the project are not well described and not well-aligned with project objectives.	No information is provided on the mechanisms for engaging participants in the project.



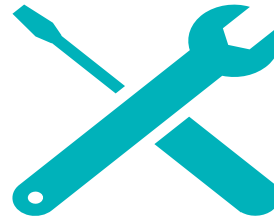
Summary: Five things to know...



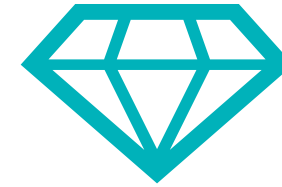
BI is an opportunity to positively impact society with your research.



BI is one of two required criteria by NSF. BI can give you an advantage in the review process.



The ARIS toolkit can help you construct a fun and well received BI plan.



NSF is not prescriptive as to what “counts” as BI. Use the 10 investment areas as a guide.



Chose an activity that is fun, rewarding and achievable to you!
Make sure you have a **BUDGET**.

Reflection and Share

- How will you apply this knowledge discussed today?
- What new ideas extended or broadened your thinking in a new direction?
- What still seems challenging or confusing? What questions or wonderings do you still have?
- What are two ways you can use these tools?



**Build Effective Partnerships
and Make an Impact**

Building a Better Broader Impact: Partnerships Part II

- Characteristics of a productive partnerships – thought exercise & share out!
- Defining a partnership (w/video and activity)
- Building an effective partnership with panel discussion



Broader Impacts require team effort...

Key is to engage with partners from the start

Quick Write (2-3 minutes)

Think about a time you collaborated with someone professionally.

What were you trying to accomplish?

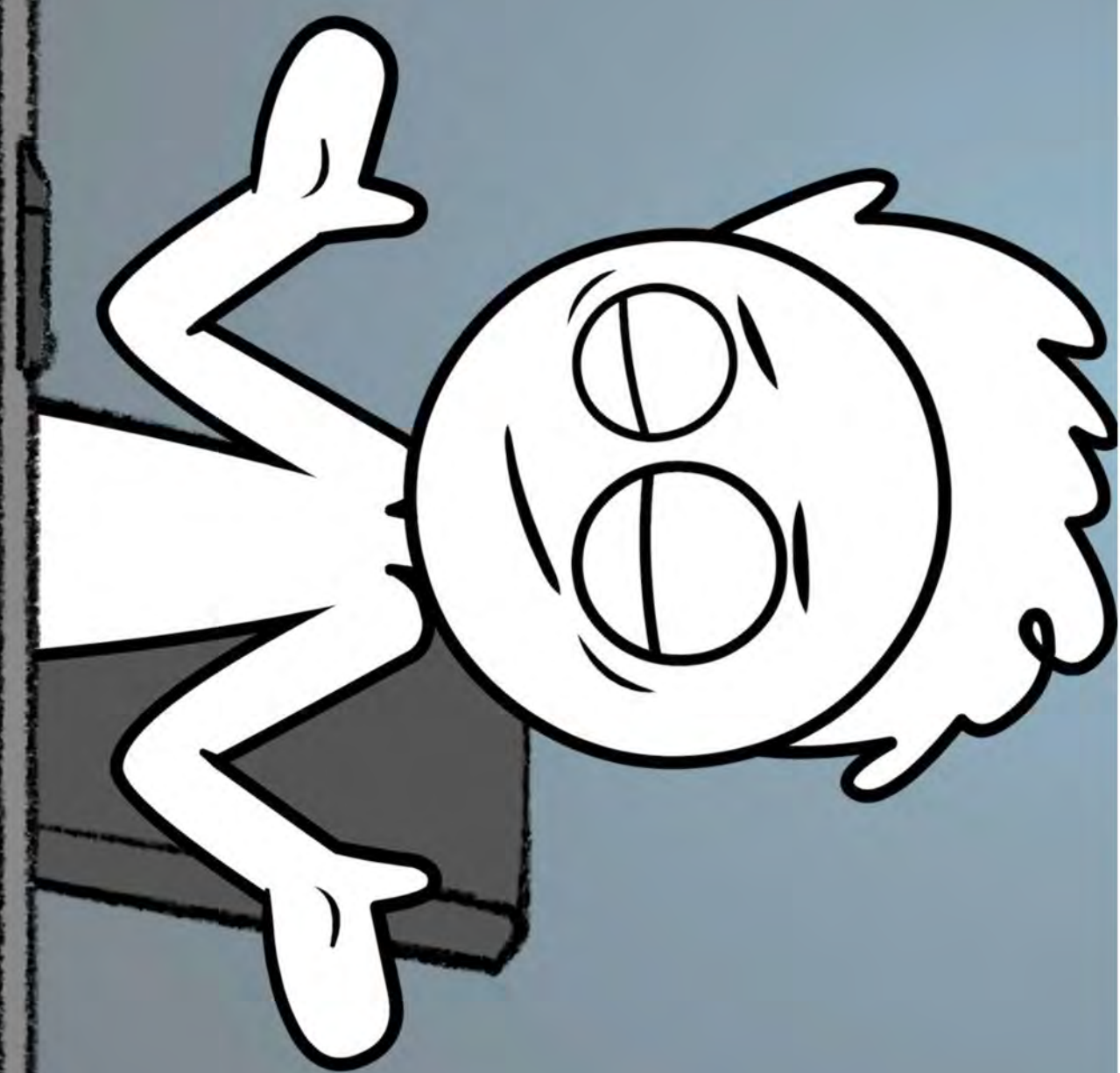
What about that partnership was positive/productive?

What was challenging about the partnership?





Share Your Story



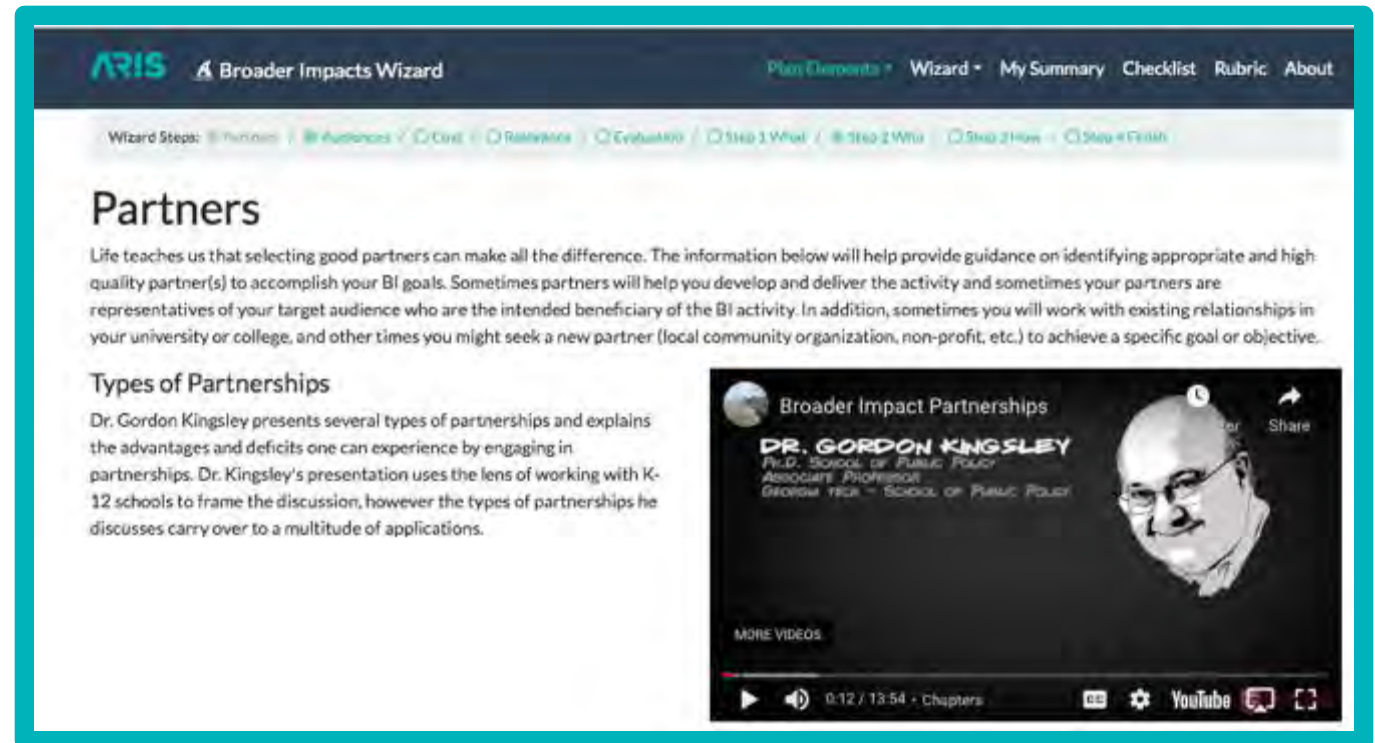


What is a partnership?

Partnership Definition

“A form of inter-organizational relationship where the participants engage in reciprocal patterns of **communication** for the purposes of identifying shared vulnerabilities, **developing shared goals** and a **shared understanding of how they will pursue and achieve these goals**”.

(Kingsley, 2000)



The screenshot displays the ARIS Broader Impacts Wizard interface. The top navigation bar includes the ARIS logo, the title 'Broader Impacts Wizard', and links for 'Plan/Defaults', 'Wizard', 'My Summary', 'Checklist', 'Rubric', and 'About'. Below the navigation bar, a progress indicator shows the 'Wizard Steps' with 'Partners' highlighted as the current step. The main content area is titled 'Partners' and contains the following text:

Life teaches us that selecting good partners can make all the difference. The information below will help provide guidance on identifying appropriate and high-quality partner(s) to accomplish your 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.

Types of Partnerships

Dr. Gordon Kingsley presents several types of partnerships and explains the advantages and deficits one can experience by engaging in partnerships. Dr. Kingsley's presentation uses the lens of working with K-12 schools to frame the discussion, however the types of partnerships he discusses carry over to a multitude of applications.

Below the text is a video player for 'Broader Impact Partnerships' featuring Dr. Gordon Kingsley. The video player includes a play button, a progress bar showing 0:12 / 13:54, and a 'Chapters' button. The video player also has a 'Share' button and a 'More Videos' link.



**COLLABORATIVE
PARTNERSHIPS**

Commonalities in Definitions of Partnerships

1. **Mutuality** in exchange
2. **Enhancement** of the stand- alone identity of partner
3. **Collaborative** processes





1. Determine the Purpose of the Partnership.

Working Together

Partnership Purpose

	Strategic	Learning	Transformation
Coordinate			
Cooperate			
Collaborate			



McDonnell, Hotaling, and Kingsley 2019

Finding the right fit

Partnership Purpose

Strategic

Learning

Transformation

Coordinate

Cooperate

Collaborate

Coordinate: Each partner contributes work, resources, and activity to accomplish their part in support of a mutual objective, but the partnership does not necessarily create anything new together.

Cooperate: Individuals exchange relevant information and resources in support of each other's goals, rather than a shared goal. In cooperative partnerships something new may be achieved as a result, but it arises from the individual, not from a collective team effort.

Collaborate: Partners jointly develop a structure for commitment to shared goals, shared responsibility, mutual authority and accountability for success, and the sharing of resources, risks, and rewards.

Finding the right fit



Partnership Purpose

Strategic

Learning

Transformation

Working Together

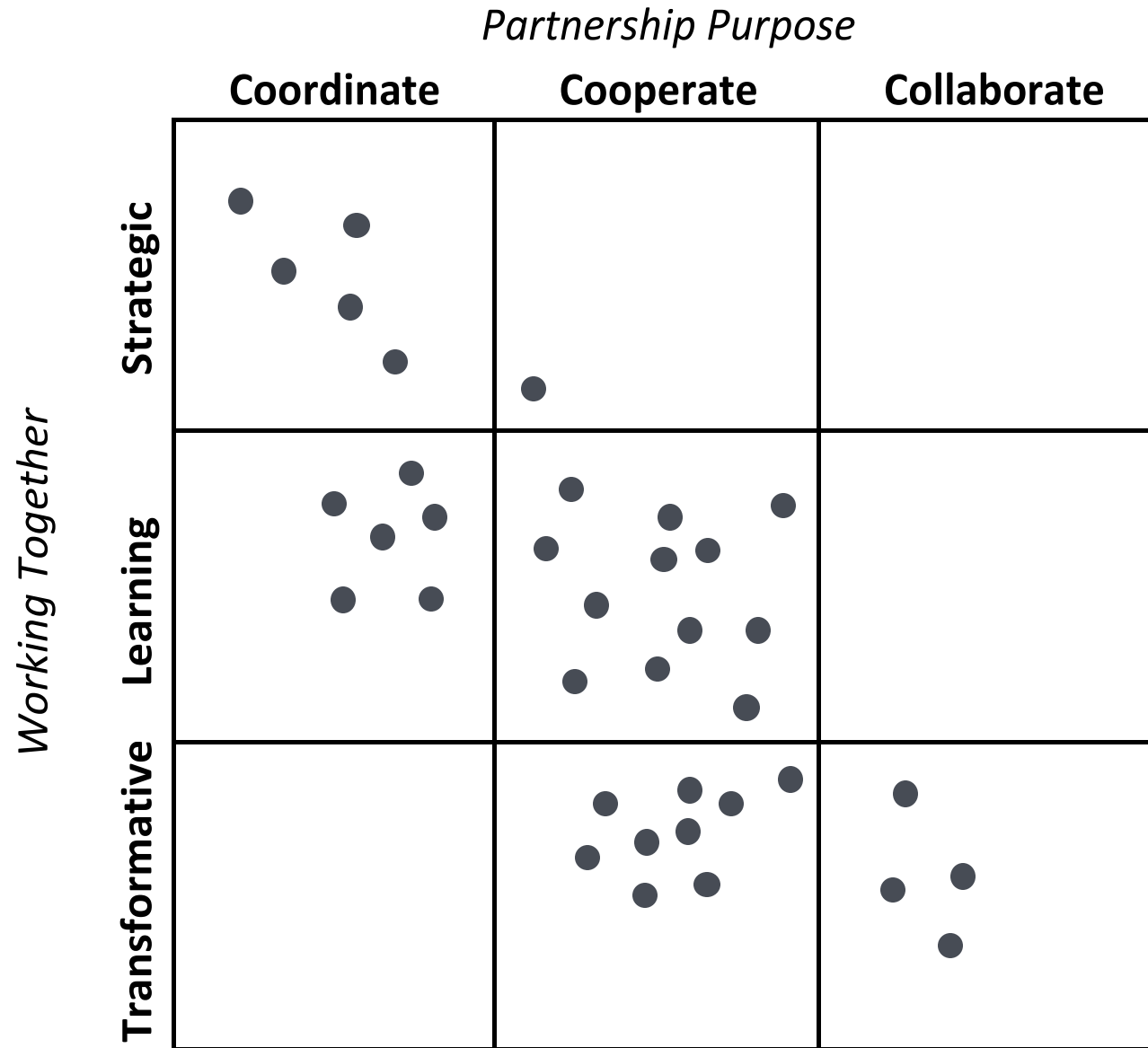
	Strategic	Learning	Transformation
Coordinate			
Cooperate			
Collaborate			

Strategic: Reduce time and energy lost in duplicative efforts. Partners are mutually dependent on one another in some way, but can function with limited trust and interaction.

Learning: Help partners gain new insights and knowledge from each other; co-produce new tools or opportunities; inspire each other or innovate together. Partners help one another to achieve their goals, but may not *rely* on each other to do so.

Transformational: Energize social innovations through advocacy, capacity building, and tools development. The partnership bolsters each partner's possibility of realizing their vision – the whole is more than the sum of its parts!

Finding the right fit





2. Strive to be a model partner.

Some Tips for a Good Partnership

1. Have a clear understanding for the motives for parties in the partnership
2. Clarify the goals and objectives for the partnership (what we will do together – both at the individual and institutional level)
3. Research and “know” your partners
4. Make sure you manage the partnership (time and attention)
5. Listen to each others needs and goals/objectives
6. Build awareness and continuity of roles in the partnership
7. Practice equitable and fair budgeting
8. **Keep the fun in the relationship!**

A screenshot of the ARIS Broader Impacts Wizard website. The page is titled "Partners" and contains text explaining the importance of selecting good partners. Below the text is a video thumbnail for "Collaborative Partnerships" featuring a handshake icon and the text "COLLABORATIVE PARTNERSHIPS". The video is hosted on YouTube. The website header includes "ARIS Broader Impacts Wizard" and navigation links like "Wizard", "My Summary", "Checklist", "Rubric", and "About".



3. Determine the metrics for success in your partnership. How will you know you are successful?

Metrics for successful partnerships

What are the impacts of the partnership? What is the ability of the partnership to produce results and add value?

It is important to:

- Articulate tangible results for the partnership.
- Have clear metrics of success.
- Strive for lasting or sustainable outcomes.
- Determine how will you sustain/adopt elements (programs, strategies, etc.) from the partnership.



The screenshot shows the ARIS Broader Impacts Wizard interface. The page title is "How will I know if my BI project is successful?". The content is organized into sections:

- Metrics for Success**: 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.
- How do you document and tell the story of your success?**: Just as you collect data in your scientific research, you need to collect data on the efficacy of your BI project which means you need to plan for a project evaluation. Depending on your needs and budget, an evaluation can be simple or sophisticated and you can do it on your own, or work with evaluation consultants within your institution (if your institution has in-house expertise), or hire a professional evaluator to help you. For your proposal, you will not need in depth detail about your evaluation plans but you should demonstrate that you have considered how you plan to evaluate the BI component of your project. The evaluation results will help you share the success and/or offer guidance for future iteration.
- How much is enough evaluation for my project?**: The available budget is often the driver. If you have access to "in-house expertise", that can be useful for internal cost connecting between existing efforts and partners, but also to save on overhead and/or subcontract fees. It can be a helpful exercise to conduct a survey of which metrics your institution or your partners already gather to determine if there are data already collected or adjacent to metrics you wanted to measure which can save time and money. The project evaluator can help guide this process. If you are not planning to hire an external project evaluator, perhaps a partner organization can co-develop the evaluation plan utilizing parameters of value to their organization.

An image on the right side of the page shows a group of people, including a child, gathered around a table, looking at a large sheet of paper, possibly a project plan or evaluation document.



4. Be intentional about writing your BI plan with your partner.

Companies as Collaborators

Some Basic Principles:

- **All core characteristics of partnerships apply here** (mutuality, enhancement, collaborative processes)
- **Alignment** with a company's business interests, budget allocations, and fiscal timeframe is *essential*
- **Play the long-game**: smaller initial collaborations can become more substantial over time
- **Think outside the box**: beyond research, how might your project help their own interests in training and talent recruitment?



Partner Panel



Each panelist will present one slide that describes their project/center/program (2 minutes each!)

Speed dating at tables:

Discuss

- What are the grand challenges we can work on together related to RCEI?
- What are the mutually beneficial outcomes of working together in climate change and energy themes?



- Tomorrow's Innovators (4-7th), STEM Explorers (7-8th), STEM Ambassadors (8-12th)



RUTGERS UNIVERSITY
Cooperative Extension
New Jersey Agricultural Experiment Station





In School



After School



Summer Time

K-12 Outreach

- Opportunities for graduate and undergraduate students to teach and serve as mentors
- Opportunities for faculty to share their work with youth audiences
- Opportunities to co-collaborate on community outreach programs



Bluepoint Wind (OCS- 0537):

Project Statistics:

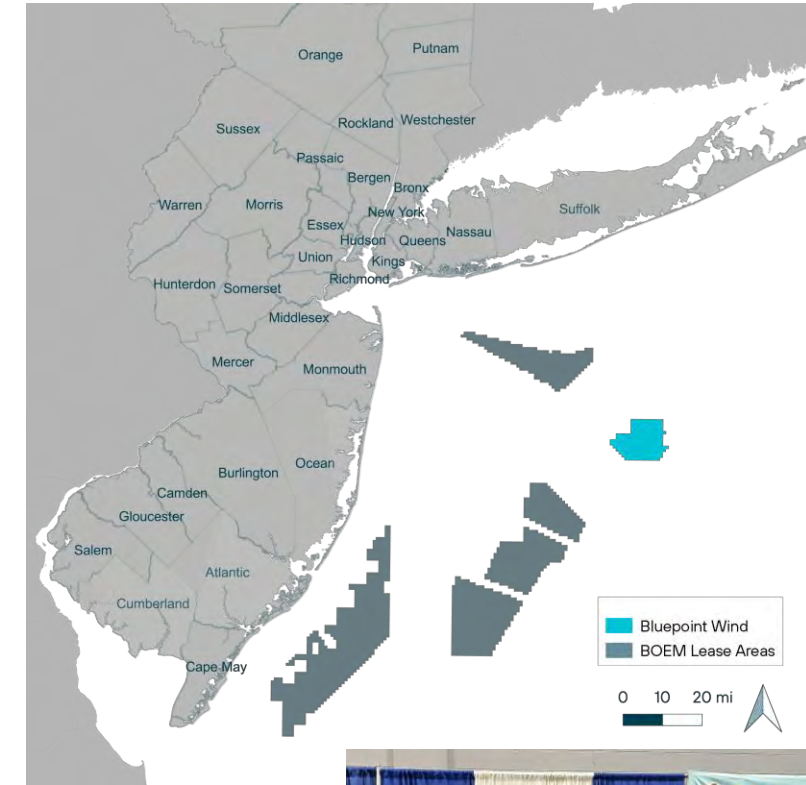
- Anticipated Capacity: 1.7 gigawatts (enough to power 900,000 homes)
- Estimated emissions reduction: 5.07 metric tons annually (the amount produced by 1.09 million gas powered cars)
- Distance from shore: 53 nautical miles (nm) from NJ, 38 nm from NY

Community Outreach in New Jersey:

- Investments in local organizations through memberships, event sponsorships, and funding in support of programs.
- Partnering with KidWind and Students 2 Science on renewable energy programming, working with multiple NJ chambers of commerce and trade organizations to prepare for opportunities in the OSW industry and beyond.

Marine and Fisheries:

- Fisheries team works with the commercial and recreational fishing communities to identify priorities of each sector and determine best practices that ensure shared use of the marine environment.
- Fisheries team maintain relationships with the industry through attendance at port hours, fishing expos, research events, management body meetings, meetings with captains and owners, etc.
- Offshore Wind developers in New Jersey are required to conduct pre and post construction ecological monitoring as well as contribute to a Research and Monitoring Initiative which will provide opportunities for collaborative science.



Rutgers Science Explorer

Share the excitement of your research with youth across NJ



Our 40-foot long mobile lab travels throughout NJ engaging middle school students in STEM activities based on Rutgers research and grounded in state standards.

We also provide opportunities for middle and high school students to visit us here at the Math & Science Learning Center on Busch Campus.

How To Get Involved

- Collaborate with us on a new activity or program to share your science with students in Grades 4-12
- Become a graduate student educator on the bus. Our graduate students present students with real-life problems allowing them to explore career opportunities in STEM and participate in standards-based, hands on activities.



sciencebus.rutgers.edu

For questions or to collaborate, email Carrie Ferraro at ferraro@sas.rutgers.edu

The Center for Mathematics, Science, & Computer Education

- Our goal is to enhance the learning and teaching of mathematics and science in K-12 schools, and to show how technology can contribute to these goals
- We have worked with over 2/3rds of NJ school districts
 - K-12 students & teachers
 - In-districts PDs, workshops, & coaching
 - Camps, after school programs, & clubs
- CMSCE works in the following areas:
 - STEM/STEAM
 - Climate Change
 - Maker Education
 - Design Thinking



New Jersey Climate Change Resource Center

Established by law in 2020 to carry out collaborative and interdisciplinary research, analysis, and outreach activities that will help NJ adapt, mitigate, and prepare for a changing climate.

1 Research & Analysis







2 Tools & Technical Guidance



NJ ADAPT

 Climate Dashboard New Jersey climate trends in moderate and high emissions scenarios	 Climate Planning Tool A guide to using coastal flooding data in climate change planning	 Climate Snapshots Climate risks summarized by municipality, county and statewide
 Local Planning Navigator A decision support tool for building community resilience	 NJ FloodMapper An interactive flood exposure data mapping tool	 NJ Forest Adapt A data mapping tool for forest management
 NJ HazAdapt Data and resources for hazard mitigation planning	 NJ Public Health Adapt Climate planning for improved health outcomes	

Climate Corps

 Trenton-Resilient New Jersey Trenton's Response to Climate Change	 Pennsville Coastal Vulnerability Assessment
 NJ Health and Medical Lifelines Flood Hazard Analysis	 Historic Preservation and Climate Change NJ Inland and Coastal Flood Risk

Transformative Climate Communities

 Gateway CAP ENRAC positive pilot program	 Groundwork Elizabeth Community solar grant program	 Hudson County Complete Streets Safe and sustainable transportation
 Raritan Bay Area YMCA Affordable green housing	 South Ward Environmental Alliance Air quality monitoring and advocacy	

3 Outreach & Education




Climate Academy



Trainings and Forums



Resources

- K-12 
- NJ Climate Stories 
- Climate Change 101 





RUTGERS

Edward J. Bloustein School
of Planning and Public Policy



Center for Urban Policy Research

The Center for Urban Policy Research (CUPR), at the Edward J. Bloustein School of Planning and Public Policy at Rutgers University New Brunswick, is internationally recognized for decades of community-engaged research on the most critical issues facing community members.



**Built Environment &
Green Building**



**Infrastructure
Networks**



**Environmental
Analysis &
Communications**



Urban Policy



**Local Government
Research**

Jennifer Senick, PhD, Sr. Executive Director



RUTGERS-NEW BRUNSWICK

**Edward J. Bloustein School
of Planning and Public Policy**

John J. Heldrich Center for Workforce Development

John J. Heldrich Center for Workforce Development

The Heldrich Center provides an independent source of analysis for reform and innovation in policy-making and employs cutting-edge research and evaluation methods to identify best practices in workforce development, education, and employment policy.

Mission

- Assess and identify workforce best practices
- Empower job seekers through technology and information
- Transforming the workforce through research

Carl Van Horn, Ph.D., Director and Distinguished Professor of Public Policy

Andrea Hetling, Ph.D., Professor and Associate Director

Laurie Harrington, Acting Executive Director

CCICADA Center (Command, Control, and Interoperability Center for Advanced Data Analysis)

- *DHS university center of excellence*
- Faculty from all over Rutgers as well as external partners
- **Climate Change/Energy as a Homeland Security Challenge:**
 - Effect of drought on Mississippi River, Panama Canal
 - Wildfires leading to power failures in Port of LA/Long Beach
 - Risk of disruptions to offshore wind farms
 - Effect of sea level rise on Alaskan indigenous communities
 - Opportunities/risks for “green vessels”
 - Combined cyber & physical attacks on electric power stations
 - Effect of climate change on supply chains
 - Changing ice conditions on the Great Lakes
 - Flood warning systems at the Hoboken Terminal of NJ Transit
- **Selected Other Areas of Expertise/Success**
 - Stadium and large venue security, crowd management
 - Transportation facility security, marine transp. system
 - Maritime cybersecurity; digital forensics
 - Supply chain disruptions
- **Homeland Security Education:**
 - Educational modules
 - “Reconnect” workshops for 2- & 4-year college faculty



Fred Roberts, Director
froberts@dimacs.rutgers.edu



RUTGERS-NEW BRUNSWICK

**Division of Diversity, Inclusion,
and Community Engagement**

Collaborative Center for Community Engagement

- Focused on connecting students, faculty, staff with on and off-campus partners to do community engagement
- Help present on Community Engagement Best Practices from both the co-curricular lens and the curricular lens (with the School of Graduate Studies)
- Help oversee the RCommunity and leading the 2026 Rutgers New Brunswick Reclassification application for the Carnegie Classification Community Engagement designation
- Programs within the Collaborative include: Bonner Leaders program, Advancing Community Development, and Community tours focused around Art/Architecture, Food, and Culture

Partner Panel



Speed dating at tables:

Discuss

- What are the grand challenges we can work on together related to RCEI?
- What are the mutually beneficial outcomes of working together in climate change and energy themes?

Reflection and Share

- How will you apply this knowledge about partnerships?
- What new ideas extended or broadened your thinking in a new direction?
- What still seems challenging or confusing? What questions or wonderings do you still have?

Conclusion

- Collaboration is a journey, not a destination
- Develop trust, leadership, and the ability to resolve conflict
- Communication
- Listen to partners needs
- Be Patient



Long-term....

Final Tip - Develop a BI identity
and make a difference!



RESEARCH IDENTITY

Your unique identity in the research landscape based on your individual contributions to your field

It shapes the choices you make, the collaborations you seek out, the grants you target, the journals in which you seek to publish, etc.

VS.



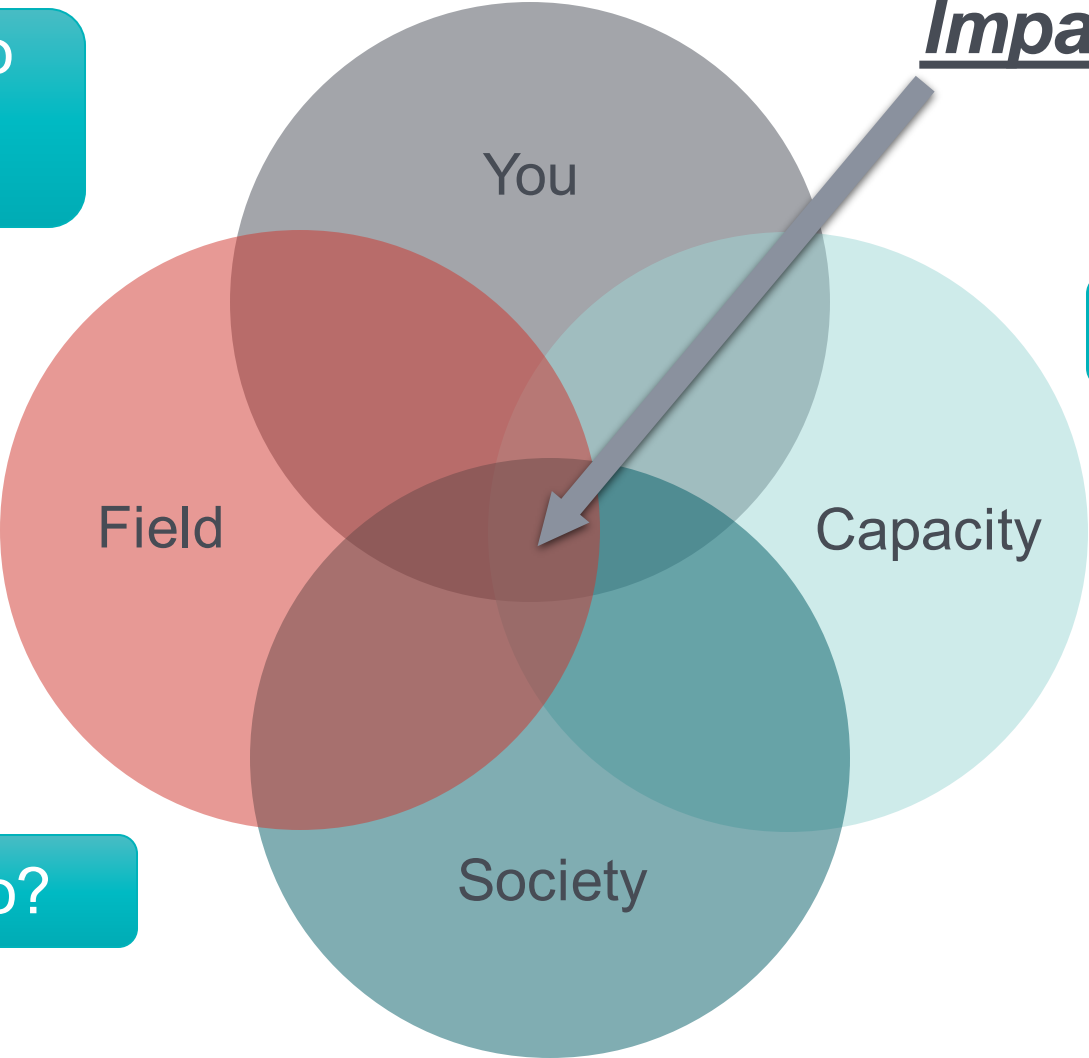
BROADER IMPACT IDENTITY

The long-term impact you could make through your BI efforts over your career.

Likewise...It shapes the choices you make, the collaborations you seek out, the grants you target, the journals in which you seek to publish, etc.

Building your BI Identity

What would I LOVE to do?



What CAN I Do?

What SHOULD I do?



www.researchinsociety.org

mcdonnell@marine.rutgers.edu