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!
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
- Renewable Energy, Technology and Energy Conservation
- Human Dimensions of Climate Mitigation, Adaptation, and Resilience
- 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)

Student Support Program

Groundwork Grants
Curriculum

Informal Gatherings
Research Theme
Transdisciplinary Connections & Partnerships

rcei.rutgers.edu
Welcome to the Workshop

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.
I have been writing Broader Impact sections of proposals since 1995.

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

**Examples**

|-----------------------|----------------------|--------------------------------------------|-----------------------|
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.

#### Table

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Johns Hopkins U.</td>
<td>3,420,312</td>
<td>3,181,385</td>
<td>3,110,494</td>
<td>2,917,436</td>
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<tr>
<td>U. California, San Francisco</td>
<td>1,805,950</td>
<td>1,710,036</td>
<td>1,651,073</td>
<td>1,595,098</td>
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<tr>
<td>U. Pennsylvania</td>
<td>1,791,311</td>
<td>1,631,950</td>
<td>1,579,364</td>
<td>1,506,285</td>
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<tr>
<td>U. Michigan, Ann Arbor</td>
<td>1,770,708</td>
<td>1,639,645</td>
<td>1,673,862</td>
<td>1,675,805</td>
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<tr>
<td>U. Washington, Seattle</td>
<td>1,559,708</td>
<td>1,488,645</td>
<td>1,456,902</td>
<td>1,425,601</td>
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<tr>
<td>U. California, Los Angeles</td>
<td>1,536,197</td>
<td>1,454,880</td>
<td>1,392,941</td>
<td>1,306,376</td>
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<tr>
<td>U. California, San Diego</td>
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<td>1,425,499</td>
<td>1,403,735</td>
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<tr>
<td>U. Wisconsin-Madison</td>
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<td>1,380,075</td>
<td>1,363,931</td>
<td>1,297,331</td>
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<tr>
<td>Duke U.</td>
<td>1,390,538</td>
<td>1,237,686</td>
<td>1,196,638</td>
<td>1,226,517</td>
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<tr>
<td>Stanford U.</td>
<td>1,384,555</td>
<td>1,274,483</td>
<td>1,203,950</td>
<td>1,204,116</td>
</tr>
<tr>
<td>Ohio State U., The</td>
<td>1,363,388</td>
<td>1,236,111</td>
<td>968,260</td>
<td>929,250</td>
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<tr>
<td>U. North Carolina, The, Chapel Hill</td>
<td>1,361,028</td>
<td>1,205,883</td>
<td>1,159,725</td>
<td>1,153,773</td>
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</tbody>
</table>
R&D Expenditures, financed by the National Science Foundation, ranked by NSF R&D expenditures, FY 2022

(Dollars in thousands)

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
<th>NSF R&amp;D expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Rutgers Campuses</td>
<td>40</td>
<td>48,406</td>
</tr>
<tr>
<td>Rutgers, State U. New Jersey, New Brunswick</td>
<td>46</td>
<td>42,275</td>
</tr>
<tr>
<td>Rutgers, State U. New Jersey, Newark</td>
<td>178</td>
<td>5,008</td>
</tr>
<tr>
<td>Rutgers, State U. New Jersey, Camden</td>
<td>323</td>
<td>1,123</td>
</tr>
</tbody>
</table>

Slide courtesy of Dr. Marika Dunn
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
SOCIETY

RESEARCH
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 in evaluation education outreach
- Lack of time
to: Bamm@cwru.edu
Subject: Overwhelmed!

Hello,

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?
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
Case Study #2
Dr. Oscar Schofield, Rutgers University

COOL Classroom

Feature documentary films

Two National curricula reaching 10,000 + youth
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
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 aftershock 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 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 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:

Achievable
Substantive
Assessable
Personal
An Introduction to Planning Broader Impact Projects

The BI Wizard provides support in defining the key elements of the 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.
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 gauge 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?
**Broader Impacts Plan Rubric**

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

<table>
<thead>
<tr>
<th>Excellent Job!</th>
<th>Very Good Job!</th>
<th>Good - You are headed in the right direction.</th>
<th>Fair - Reconsider your approach?</th>
<th>Poor - Needs Work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>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.</td>
<td>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.</td>
<td>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.</td>
<td>Participants are not described. There is no information on who participants are and how many will engage in the project.</td>
</tr>
<tr>
<td><strong>Target audience characteristics:</strong> 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.</td>
<td><strong>Target audience characteristics:</strong> 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 generally well-aligned with project objectives.</td>
<td><strong>Target audience characteristics:</strong> The characteristics of the target audience, including who they are, where they are located, and how many will be engaged are somewhat well-aligned with project objectives.</td>
<td><strong>Target audience characteristics:</strong> The characteristics of the target audience, including who they are, where they are located, and how many will be engaged are not well described at all. There is no information on who participants are and how many will engage in the project.</td>
<td><strong>Target audience characteristics:</strong> The characteristics of the target audience, including who they are, where they are located, and how many will be engaged are not described.</td>
</tr>
<tr>
<td><strong>Mechanisms for engaging participants in the project are very clearly described and well-aligned with project objectives.</strong></td>
<td><strong>Mechanisms for engaging participants in the project are clearly described and well-aligned with project objectives.</strong></td>
<td><strong>Mechanisms for engaging participants in the project are somewhat clearly described and somewhat well-aligned with project objectives.</strong></td>
<td><strong>Mechanisms for engaging participants in the project are not well described and not well-aligned with project objectives.</strong></td>
<td><strong>Mechanisms for engaging participants in the project are not described at all. There is no information on the mechanisms for engaging participants in the project.</strong></td>
</tr>
</tbody>
</table>
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)
COLLABORATIVE PARTNERSHIPS
Commonalities in Definitions of Partnerships

1. **Mutuality** in exchange

2. **Enhancement** of the stand-alone identity of partner

3. **Collaborative processes**

- McDonnell, Hotaling and Kingsley 2019
1. Determine the Purpose of the Partnership.
<table>
<thead>
<tr>
<th></th>
<th>Strategic</th>
<th>Learning</th>
<th>Transformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Together</td>
<td>Coordinate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborate</td>
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<td></td>
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McDonnell, Hotaling, and Kingsley 2019
**Finding the right fit**

<table>
<thead>
<tr>
<th>Partnership Purpose</th>
<th>Coordinate</th>
<th>Cooperate</th>
<th>Collaborate</th>
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</thead>
<tbody>
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</tbody>
</table>

**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

**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

Partnership Purpose

Coordinate | Cooperate | Collaborate
---|---|---
Strategic
Working Together
Learning
Transformative
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!**
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.
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)
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 collaborate on community outreach programs

Marissa Staffen, Essex 4-H County Agent  Marissa.staffen@rutgers.edu
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

3. Outreach & Education

NJ ADAPT

Climate Corps

Transformative Climate Communities

Climate Academy

Trainings and Forums

Resources

K-12
NJ Climate Stories
Climate Change 101

https://njclimateresourcecenter.rutgers.edu/
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.

Jennifer Senick, PhD, Sr. Executive Director
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
- 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?

Impact sweet spot!

What CAN I Do?

What SHOULD I do?

You

Field

Capacity

Society