



The Research!America Microgrant Program:

Exploring its Impact on Early Career Scientists



On the cover page, top left: University of Florida Emerging Leaders of Science Policy and Advocacy Group. On the cover page, bottom right: Colorado State University Sustainability Leadership Fellows Program.

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Introduction

Research!America has a long history of advancing civic science. Connecting scientists to citizens and citizens to scientists to foster understanding and further shared goals has been central to Research!America's mission since it was founded in 1989 and it continues to be a vital focus for the organization today.

A core component of our civic science work is the **Civic Engagement Microgrant Program**, supported by the Rita Allen Foundation. Since 2018, our Microgrant program has worked directly with groups of STEM graduate students and postdoctoral researchers (post-docs) from across the country to **provide small grants** to support civic engagement projects. The program provides training and **hands-on experience** for grantees in the areas of public policy, communications, community outreach, and program planning.

At this juncture, having supported **65 microgrants over the past four years**, it is beneficial to take a deep dive into the initiative. We want to:

1. Highlight key learnings to benefit the Civic Engagement Microgrant Program and other early career civic engagement initiatives.

2. Utilize our experience with the Microgrant program towards broader efforts to build a culture of civic science – the ultimate goal Research!America shares with many partners.

This report is a synthesis of our learnings to date based on a close examination of the **65 surveys** completed by micrograntees at the end of their grants, **15 in-depth interviews** with micrograntees and faculty advisors, and our own observations.

Defining “Civic Science”

Research!America is passionate about normalizing civic science, as are many of our partners. It’s helpful to clarify the terms “civic science” or “civic scientist.” Neal Lane, PhD, while serving as director of the National Science Foundation, used the term “civic scientist” in a [1996 lecture before an international assembly at the National Academy of Sciences](#).

He said, **“In the past several months, I have spoken to many groups of my colleague-scientists here in America about a new, additional role that, I believe, scientists must play in society. I termed this role the ‘civic scientist’ — civic meaning concerning or affecting the community or the people. In this new capacity, scientists step beyond their campuses, laboratories, ministries, and institutes and into the center of their communities to engage in active dialogue with their fellow citizens.”**

He further articulated, **“ ... to engage in dialogue is to listen as well as to speak,”** declaring that

“ ... while there is great need for the public to have a better understanding of science, and we should promote this in every way possible, there is as great a need for scientists to have a better understanding of the public.”



The innovative [Civic Science Fellows](#) program discussed in the next section defines civic science as “an approach to connecting science and society that emphasizes meaningful collaboration between scientists conducting research and the people whose lives could be impacted by it.”

Civic science is centered on replacing the traditional, unidirectional “deficit model”^{*} – wherein scientists see their charge as filling the gaps in knowledge of non-scientists – with opportunities for dialogue and meaningful collaboration between scientists and non-scientists.

^{*} For more on the “deficit model,” see a [2020 article in EMBO Press](#), a [2017 NASEM report](#), and a [2016 essay in the Public Understanding of Science Journal](#).

The Rise of Early Career Civic Science Programs

The desire for training in civic science appears to be growing among early career scientists. Applications to our Microgrant program have **more than doubled in the past two years**, and we've also seen an increase in civic science and science policy fellowships.

Public Policy Fellowships Emerge

Training programs to involve early-career scientists in public policy, a facet of civic science, first emerged in the early 1970s, when the American Association for the Advancement of Science (AAAS) unveiled its [Science & Technology Policy Fellowships](#) program. Today, the program places more than 250 PhD-holders each year in all branches of federal government with the goal to foster a network of science and engineering leaders who understand government and policymaking.

Another well-known and longstanding early career policy fellowship is the National Academy of Sciences, Engineering, and Medicine's (NASEM) [Christine Mirzayan Science and Technology Policy Graduate Fellowship Program](#), which takes a different approach. It brings early career individuals to NASEM in Washington D.C. for 12 weeks to learn about "science and technology policy and the role that scientists and engineers play in advising the nation... to obtain the essential skills and knowledge needed to work in science policy at the federal, state, or local level."

There are also a number of state-based fellowships. [The California Council on Science & Technology \(CCST\) Fellowship](#), started more than a decade ago, is modeled on the AAAS program. In 2017, with foundation support, CCST administered start-up grants to nine states to plan similar programs. Our University of Missouri micrograntee has initiated Missouri's science policy fellows program.

Research!America Microgrant participants shared that their experience in the program assists their chance of securing competitive fellowship programs such as those above.

Graduate Students Initiate Campus Groups

In recent years, graduate students and postdocs across the country have identified a need for campus-based resources to learn skills and develop hands-on experience in public policy and other aspects of civic engagement. In the late 2000s, the first student science policy group was formed at MIT, and the number of campus groups across the U.S. has grown rapidly. Groups affiliated with the umbrella organization, the [National Science Policy Network](#) (NSPN), started in 2018, number over 70 as of 2022. NSPN has evolved to provide year-round programming, becoming a hub for early career civic engagement activities.



"... this grant allowed us to organize scientists and state representatives to come together and discuss ways to better engage scientists in civic activities."

— Adaeze Egwautu, Event Organizer, University of Massachusetts Amherst

While the campus-based organizations are typically called “science policy groups” many are involved in a broader range of civic science programming. If registered as an official “club” the group may receive some funding from the university. However, students commonly need to fundraise in order to put on programs.

Research!America’s Microgrant funding has supported the civic engagement initiatives of many of these campus-based groups. We have also helped to **launch an average of two new campus-based groups each year** such as #BlackInSciPol at Morgan State University and University of California Irvine’s Science Policy and Advocacy Network.

In addition, the Microgrant program supports civic engagement initiatives of non-campus based groups like the American Physician Scientists Association and March for Science NYC along with efforts to unite students across a geographic area such as the Twin Cities Science Policy Network and the Houston Science Policy and Advocacy Group.

The Civic Science Fellows program – launched in 2020 – is important to mention as well. Supported by a network of foundations, including the Rita Allen Foundation, the Civic Science Fellows are hosted by a wide array of organizations working to build civic science opportunities with diverse communities. The program is geared towards “emerging leaders” with participants further established in their careers than those participating in the Microgrant and other early career programs mentioned above.



“We started [our science policy program] in 2018 ... But we’ve kept it going because there is a huge interest from students ... This generation really, really wants to see the social impact of the work that they are doing.”

*— Dr. Susan Hackwood,
Professor of the Graduate
Division and Edward A. Dickson
Emeritus Professor at University
of California, Riverside, Faculty
Advisor to the Science to Policy
(S2P) program at UC Riverside*

Overview of the Research!America Microgrant Program

Research!America has supported four annual cohorts of micrograntees since 2018.

Year One

The 2018-2019 program aimed to give early career scientists a better understanding of government through bipartisan candidate forums. Opportunities to learn about government have continued in subsequent years but through engagement with elected and appointed officials as opposed to those running for office.

Year Two

The pandemic required many of our micrograntees to pivot their planning and execution, with half of the 2019-2020 cohort completing their projects virtually. We learned how to adapt programs to be accessible remotely and learned which program models worked best in a virtual environment.

Year Three

With the pandemic in full-swing, the entire 2020-2021 cohort developed virtual projects from the start, and we provided appropriate training and support. When conceived and planned in the context of the pandemic landscape, the virtual programs exceeded our expectations in terms of impact.

Year Four

Many in the 2021-2022 cohort pivoted to in-person events. We have used the lessons of the pandemic to support hybrid events, help micrograntees broaden engagement, and become more creative in their outreach and promotion. The normalization of remote presentations has broadened the opportunities for students to secure high-level public officials and scientists for their events.

In our Microgrant program, specific project ideas as well as execution are student-driven. Once the micrograntees are selected, they receive assistance in executing their project, but the inspiration is theirs. In some cases, potential applicants have reached out to Research!America for a brainstorming session to help identify projects – we've been happy to have those conversations, but the applications and ideas must be student-led.

Over the four years, projects have fallen into 10 categories (see table on page 10) with each group's proposal reflecting their members' specific interests as well as the interests of their local communities. They have ranged from op-ed writing workshops to "flipped poster sessions" in city hall to local community conversations about water quality. Some micrograntees conduct more than one project during their grant term.

| Program Year | Applications Received | Grants Awarded |
|---------------------------|-----------------------|----------------|
| 2018-2019 | 20 | 10 |
| 2019-2020 | 32 | 15 |
| 2020-2021 | 50 | 19 |
| 2021-2022 | 75 | 21 |

Virtual Programming

For both the 2019-2020 groups forced to pivot to virtual projects and the 2020-2021 cohort whose only option was to propose virtual projects, we provided a few ideas such as data visualization and podcasts. Graduate students at Yale successfully pivoted to an online format in the spring of 2020 when they took their "Flipped Science Fair" for middle-school students online, sharing poster presentations during the family dinner hour. The families voted on the best presentation followed by a question and answer session about careers in science.

Specific Training and Mentorship Provided by Research!America

For the past three cohorts, we have provided skill-building webinars focused on project management, media relations, and public policy. For the past two years, we have also offered an in-depth, multi-session, public policy course taught by the Federation of American Societies for Experimental Biology (FASEB).

The Research!America skill-building webinars have been well-received by program participants, with students from Virginia Tech stating that **"the webinar topics were very interesting and informative ... The webinar on planning events was ... particularly helpful in our planning of the Health Science Career Panel. It helped us think of details that improved the event."** Another micrograntee from the University of Wisconsin mentioned that the webinars particularly helped with their professional development.

The FASEB training was also enjoyed by program participants. According to students at Baylor College of Medicine, **"The FASEB Science Policy course was ... incredibly beneficial and a wonderful perk to being awarded the microgrant. I learned a lot about the federal government and how scientists can be involved in shaping policy from experts in the field. I also enjoyed networking with other groups and learning about their microgrant projects."**

Micrograntees also appreciated the opportunity to connect with each other through our networking virtual “coffee hours.” A micrograntee from Virginia Tech stated that, **“I particularly enjoyed the coffee chats where we could learn what others are doing and establish connections.”**

A student from Boston University credited these meetings with helping them make new connections that allowed them to spearhead a parallel project after moving to a new state.

A Rockefeller University student echoed what we have heard from many of our micrograntees stating that **“... our team benefited greatly from the funding, networking opportunities with other microgrant awardees and potential mentors, and educational resources. All of us were able to grow professionally, primarily through engagement with Research!America”.**

Mentorship is a valued component of the program. Micrograntee leaders engage with the Research!America program manager on a regular basis. These interactions serve as opportunities to provide guidance and assistance throughout the duration of the project and even afterwards. Newer groups seek frequent and regularly scheduled meetings while established groups appreciate e-mail check-ins. Importantly, the microgrant program provides mentorship to students and postdocs who may not otherwise have contact with peers, faculty and other professionals familiar with civic engagement and science policy.

Science Meets Science

As part of our application materials in 2019, we described a project option called “Science Meets Science” to bring together graduate students in the basic sciences with their counterparts in the social sciences.

According to graduate students at University of California Berkeley, the Science Meets Science track was pivotal to their work. **“For our GMO (genetically modified organisms) program, we were able to consider GMOs from both a science/research point of view and an economic one. Furthermore, we believe that we were able to attract a more diverse audience because of the diversity in our speakers’ experiences ... these forums seemed to attract more members of the legal/policy communities at Berkeley and members of the public.”**

The need to move to all virtual programs in the 2020-2021 grant cycle made it challenging for students to find one another across schools within a given university. We are restarting this model to encourage interdisciplinary projects across the range of STEM disciplines as well as between the physical and social sciences.

“Completing our microgrant project was incredibly successful for attracting new members to our group, and in particular for identifying leaders.”

— Vetri Velan, Science Policy Group Leader, University of California at Berkeley



Types of Projects Among Research!America Grantees

| | |
|---|--|
| Community Outreach/Education: Engaging with the public around a specific event project such as Oklahoma Medical Research Foundation's – "Ask us anything," poster sessions and flipped science fairs, often in a fun location. | New Group: Establishment of a new science policy/civic engagement group. |
| Competition: Op-ed or policy memo contests between graduate students and postdoctoral researchers. | Podcast: Shows developed by micrograntees to bring scientific issues to the public through interview and discussion formats, such as Virginia Tech's Big Lick of Science. |
| Data visualization: Developing digital tools to share scientific information to non-scientists in a creative and impactful way. | Policymaker Outreach and Education: Interactions with policymakers to discuss science policy issues such as the University of Texas Medical Branch Galveston group's invitation to city officials to attend an elementary school science fair in order to discuss the importance of STEM education. |
| Demonstration/Tour: Showcasing labs to members of the community around a given topic. | Workshop: Educational sessions where participants learn tangible skills like how to write a policy brief or learned about an array of topics related to civic science. These can involve community members. |
| Forum (Public): Discussion between a group of academics and community leaders in front of an audience. | Bipartisan Candidate Forum (funded only in 2018–2019 cycle): Events for candidates for public office around science topics. |

Submission and Approval Process

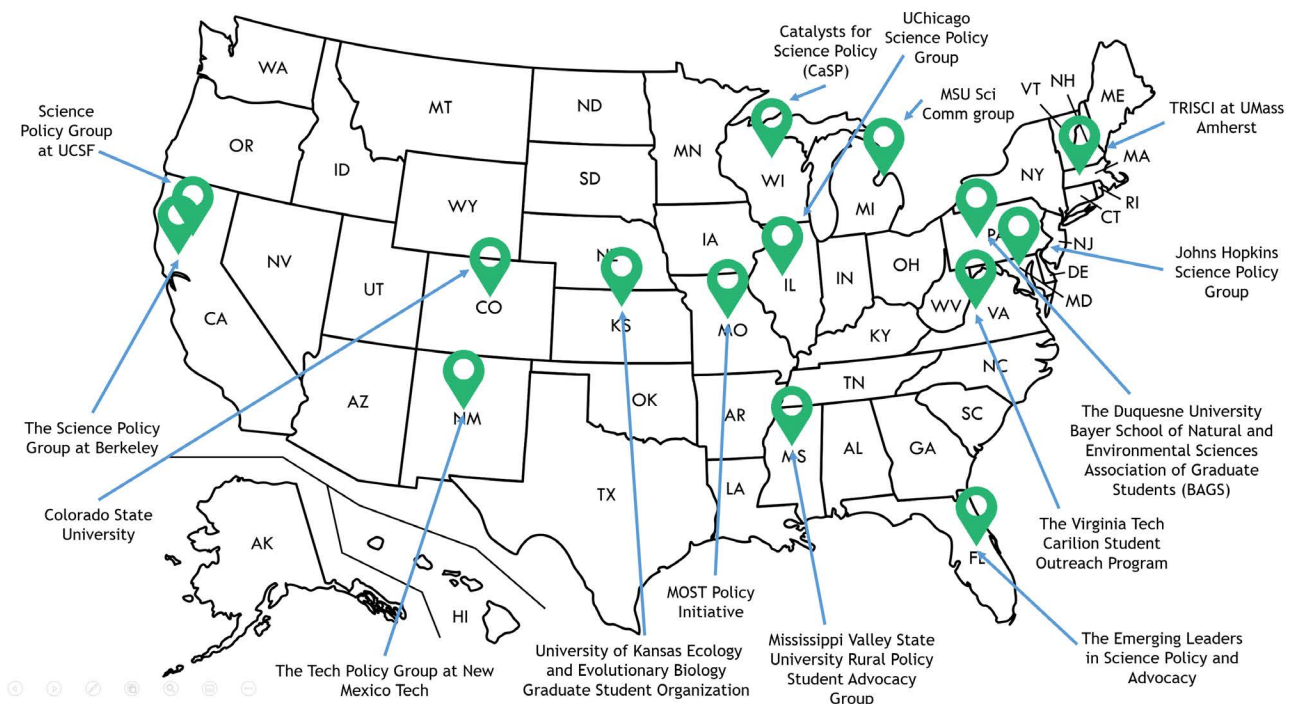
Requests for applications, typically in late summer/early fall, have been publicized extensively via early career science policy networks as well as through graduate school deans and geo-targeted Facebook advertising. To date, **grants have been given to groups across 26 states**. Applications are scored by a team of Research!America staff and grantees are typically notified in October.

Microgrant Locations By Year

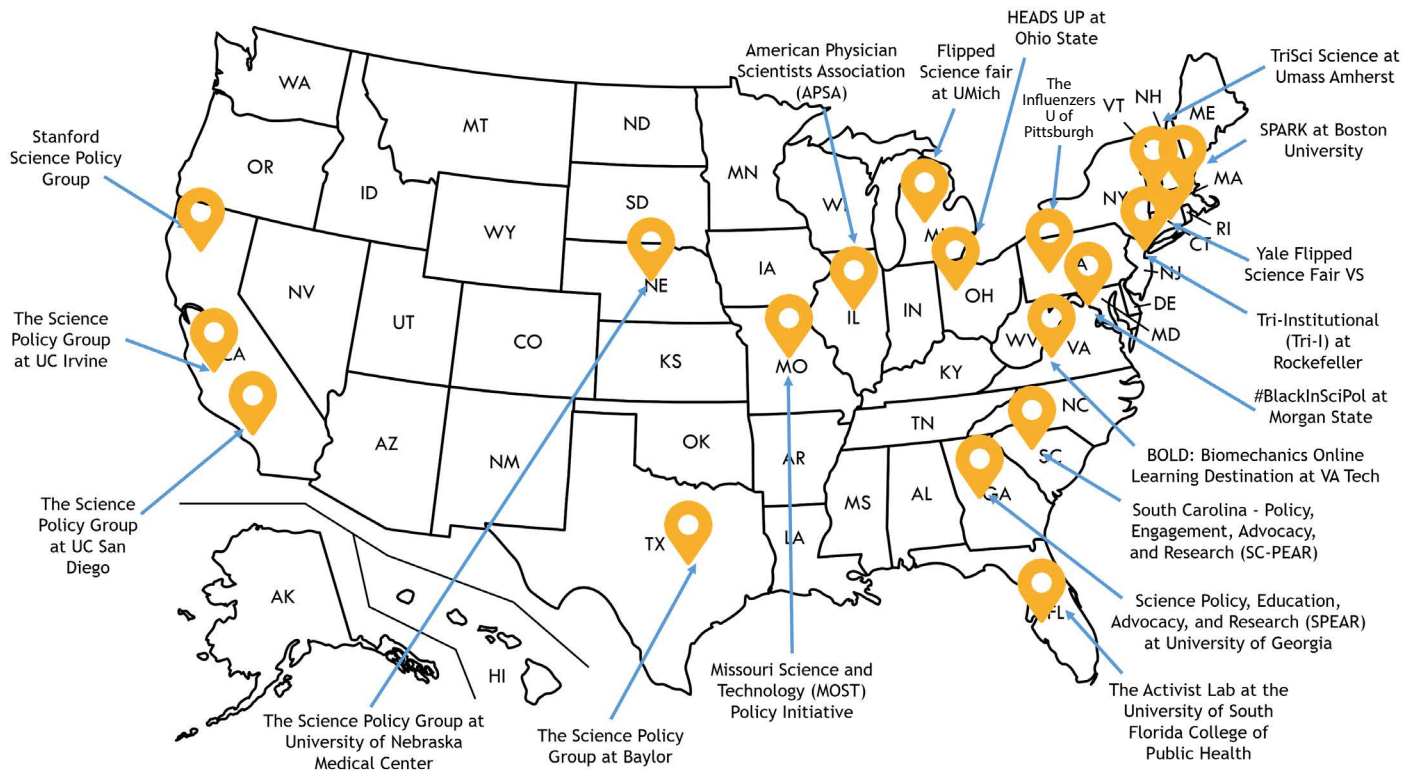
2018-2019 Microgrant Recipients



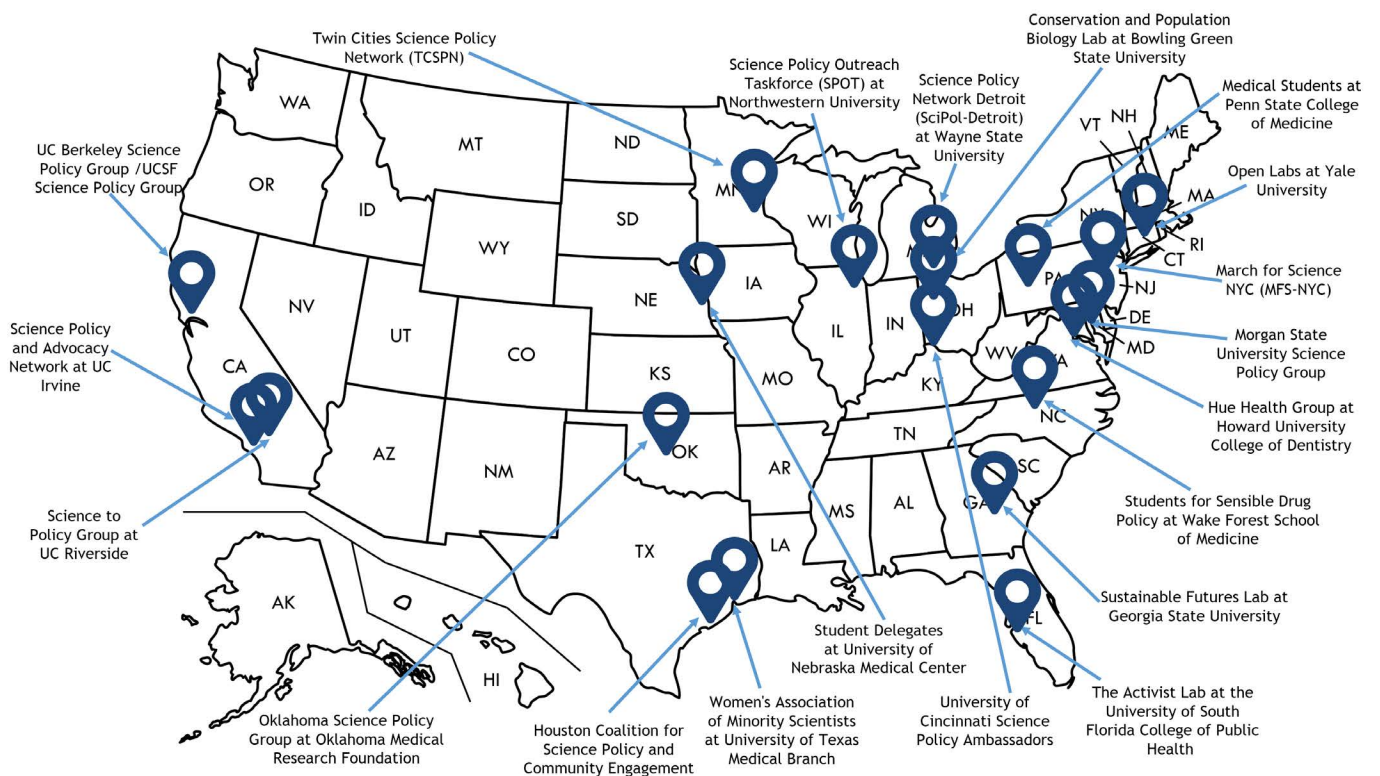
2019-2020 Microgrant Recipients



2020-2021 Microgrant Recipients



2021-2022 Microgrant Recipients



Key Learning: Developing New Skills

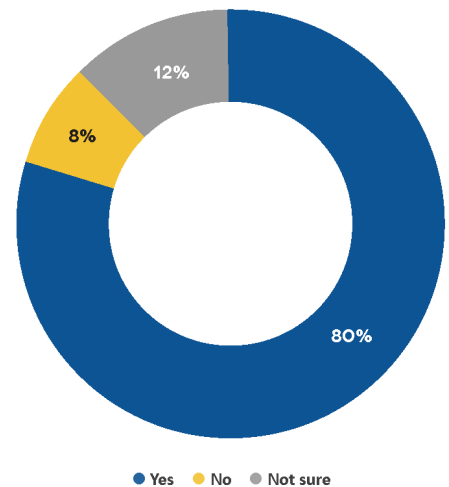
Micrograntees report that being part of the program helped them to develop new skills across a breadth of areas. Improving the communication skills of scientists is at the heart of civic engagement. Strengthened communication – both in speaking with non-scientist audiences as well as with peers – was the most common growth area reported by micrograntees. As one micrograntee stated, ***“It’s not enough to do the research and the data, you must communicate with society.”***

Earlier this year, we commissioned a national survey that found **80% of Americans say scientists should consider it part of their job to inform the public about their research and its impact on society.**

Another essential component of improving communication skills is learning to assess and disseminate accurate information. One participant noted the Microgrant program instilled a new sense of responsibility to make sure they were sharing accurate information and not inadvertently spreading misinformation.

Micrograntees reported learning other important skills for civic science engagement, including project management, collaboration, leadership, and mentorship skills. Project management skills were further broken down and identified as: how to find co-sponsors, event advertising, partnership building, event logistics, and networking.

Should scientists consider it part of their job to inform the public about their research and its impact on society?



“I regard [PhDs] as essential features for our ability to have a healthy society moving forward. . . It’s really exciting to see students acquire skills that they maybe didn’t know they had; whether it is public speaking, writing, or writing an op-ed, we have this great workshop. They have to be able to understand an issue in ways that they can then convey it very clearly to a non-expert audience... They realize they also need to be able to talk about their research in ways that non-scientists can understand.”

— Keith Yamamoto, PhD, Vice Chancellor for Science Policy and Strategy, Professor of Cellular and Molecular Pharmacology, Director, and Faculty Advisor at UCSF Precision Medicine at University of California, San Francisco

Through their projects, micrograntees created various experiences to practice communicating to audiences of non-scientists including live poster sessions, op-ed writing contests, podcasts, and data visualization projects.

- **Flipped science fairs** – where graduate students make poster presentations which are usually assessed by non-scientists – have been a popular project-type among micrograntees. The format forces graduate students and post-docs to focus on making their work accessible to a variety of audiences outside academia, providing real-world practice in science communication.

“Science doesn’t have to be lost in translation,” said a student from the Medical University of South Carolina’s “Policy, Engagement, Advocacy, and Research” (SC-PEAR) group who presented during her group’s flipped science fair, a virtual poster presentation for graduate students to share their research, judged by three science communicators from the writing center and one research post-doc.



“I feel like my public speaking skills have [grown] a million times since participating in the microgrant program,” an SC-PEAR micrograntee shared.

Other flipped science fair examples include the University of Wisconsin-Madison’s “Science Fair for Adults” and Johns Hopkins University’s “Baltimore City Hall Poster Session.”

- **Podcasts** have been another way for micrograntees to hone communications skills for non-scientific audiences.



The [Politics Under the Microscope](#) podcast, developed by graduate students of the Tri-Institutional Campus in New York City, produces content at the intersection of science, politics, and society. Established with a Microgrant in 2020, the show continues to be produced (and airs on Spotify and YouTube) with listeners across age groups and countries.

Virginia Tech’s [Big Lick of Science](#) podcast captures the goal in its tagline: “Connecting Community, Sharing Science.” Launched in 2019 with support from a Microgrant, the podcast has continued to grow.



[In the SPOTlight](#), a podcast produced by the Science Policy Outreach Taskforce (SPOT) of Northwestern University, aims to explain the intersection between the research of graduate students and postdoctoral fellows and how it relates to the world around them: “What problems are they trying to solve? What should we all understand about their work? What policies may be needed to support this research?”

- **Writing competitions** among graduate students have been another popular communication skill-building exercise, such as the University of Florida's "Science Matters Policy Memo Competition" and the University of Massachusetts Amherst's "TriSci Science Policy Memo Triathlon."



One participant in the TriSci Science Policy Memo Triathlon said, **"it was really interesting and refreshing to see such a diverse body of work from my peers. The poetry, videos, [and] images were all fantastic! I am so happy you all put on this event. Please do so again!"** Other participants expressed interest in engaging in science policy writing through other avenues in the future (e.g., blog posts).

- **Data visualization projects** enabled several grantees to present information to non-scientific audiences in a creative and virtual way during the pandemic. One micrograntee said, **"a lot of us have trouble communicating the things we know in our field and disseminating that information to the public. It wasn't until we started the data visualization competition and creating infographics that I realized how difficult some of these things actually are to relay to the public."**



**UNIVERSITY OF
SOUTH FLORIDA**

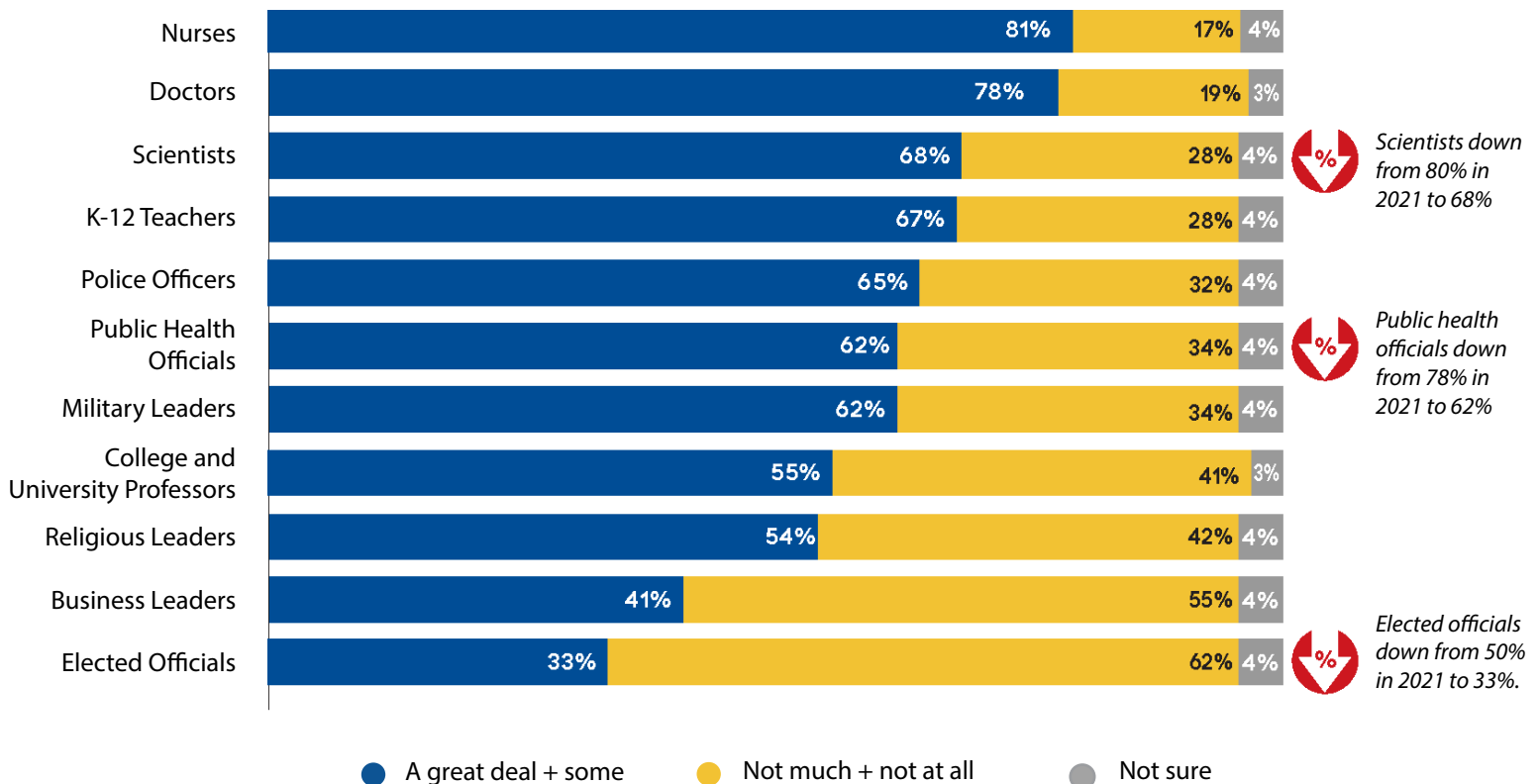
Several participants also noted that the process of applying for a Microgrant was valuable, in improving grant writing skills. One participant said the process of narrowing their perspectives and ideas from a large view down to a written grant application was a helpful exercise. Another noted that writing a grant, from the drafting to completion stage, allowed for them to **"frame [their] results so that [they] can actually showcase the hard work that [they] do,"** noting that **"data is only data until you create a narrative around it"** (University of South Florida).

Key Learning: Connecting With the Community

Instilling in early career researchers the importance of building connections and engaging in their local communities is one of the top priorities of the Microgrant program. There are several reasons why. Community members are taxpayers and since much of academic research is funded by taxpayer dollars, there needs to be a sense of accountability to the public. With communications training, scientists can humanize complex ideas, give personal answers to questions, and can be one of the strongest bulwarks we have to limit – and correct – the spread of misinformation.

There is no substitute for personal connections to build trust. As we have found in our survey work, scientists have one of the most trusted professions in society although that trust has shown troubling signs of erosion during the COVID-19 pandemic. A survey we commissioned earlier this year found 8 in 10 Americans consider scientists trustworthy spokespersons for medical and health research.

How much confidence do you have in each of the following to act in your best interest?



Micrograntees have engaged with their local communities in various ways, everything from partnering with local charter schools to reach K-12 students to partnering with area non-profits to reach adults. A few examples:



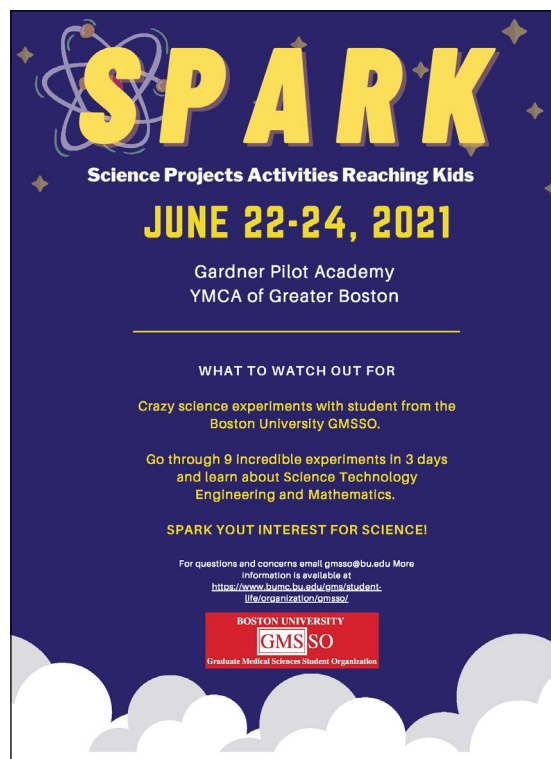
University of Chicago

For their community event, students worked with science education nonprofit Illinois Science Council whose staff was able to **"... guide with best practices, warn us of likely difficulties, and inform us of what to expect when running the event,"** said a micrograntee.

Finding an affordable, convenient location accessible by public transit was important. The micrograntees sought a **"... relaxed atmosphere which suited the diverse audience of the event and the nature of the panel topic. We achieved one of our primary goals of attracting attendees from many different areas of Chicago through digital advertising."** The event, focused on water quality in Lake Michigan, attracted a fisherman, a plumber, and a scuba diver, among other community members.

Boston University

In the midst of the pandemic, the Graduate Medical Sciences Student Organization, proposed a virtual hands-on experience for elementary school children called "SPARK Science." For the experience, students would receive science kits at home and be guided through experiments online. When the pandemic landscape changed, the micrograntees pivoted to an in-person, multi-day event at a public charter school where children took part in experiments such as "Lemon Volcano" and "Balloon Chemistry," to help spark their interest in science.



Why are Vaccine Boosters Important?

Boost your body's defense

- "Booster" - follow up vaccine for added immunity
- First dose may not be enough
- Can leave body open to infection
- Second and following doses improve defense
- Now body can fight off infection



Immune response can weaken over time

- Vaccines can be single-dose or in a series
- Certain vaccines require regular booster shots
- Reduce chances of catching a serious disease later in life
- Boosters can help ensure you remain safe from future infection



Vaccines aren't just for you

- Protects those close to you from catching infections you could spread
- Keeps loved ones who cannot get vaccinated safe
- Ensure safety of those who are very young, very old, or very ill
- Improves the health of your community and neighborhood



Talk to your doctor

- Know what vaccines are right for you and your children
- Discuss which vaccines need a booster and when
- Stay up to date on boosters to keep yourself and your loved ones safe



For schedules and more information check out:
<https://www.cdc.gov/vaccines/schedules/index.html>

University of Pittsburgh

The "Influenzers" student science policy group learned about the Microgrant program just as its members were thinking about how they could assist in vaccine education. **"We recognized the gaps in our own vaccine education and the fact that we wanted to be more equipped to help the public,"** said a medical student. **"We wanted to build our knowledge, but also to find ways to better communicate, distribute, and share the knowledge we already had to people who aren't in medicine."**

Though directly connecting with the community was difficult due to pandemic restrictions, the Influenzers reached out through clinics, the county health department, and centers serving refugee populations to distribute vaccine education materials.

University of Michigan

The micrograntees' "Flipped Science Fair for Public Policy" focused on discussing cutting edge research in psychology and cognitive neuroscience with non-scientists in the community. Poster presenters talked about **"... how to interpret scientific research, how to think scientifically, how people reason about COVID-19, and machine learning with the aging brain. Our goal was to increase public engagement with science by demystifying the scientific research process. We facilitated discussions about how science and society can fruitfully engage with one another."**



Flipped Science Fair for Public Policy

The UM Flipped Science Fair Team is a student-led organization at the University of Michigan funded by Research!America. Our goal is to increase public engagement with science by demystifying the scientific research process.

We are hosting a virtual outreach event on **April 15th 3-5pm EST** aimed at the local Ann Arbor community: researchers, undergraduates, community leaders, and the general public. We hope to facilitate discussions among all attendees about how science and society can fruitfully engage with one another.

The event will consist of two parts:

- 1. 3-4:30pm:** A 1.5-hour "flipped science fair" where several UM scientists present cutting-edge research in psychology and cognitive neuroscience. Attendees will leave with a better understanding of what scientific research entails, why it is relevant to our daily lives, and how it can inform public policy.
- 2. 4:30-5pm:** A 30-minute community discussion on the societal implications of the presented research. Community members and leaders at all levels are welcome to join us in discussing the potential of scientific research and exploring avenues to better apply these findings within our community.

Attendees will receive a free t-shirt while supplies last!
 Available in unisex sizes XS-4XL.

All attendees can enter a free raffle for a conversation and virtual shadowing experience with a current graduate student.

Registration link: <https://myumi.ch/1pEqV>





Oklahoma Medical Research Foundation

The brand new group, Oklahoma Policy Engagement Network (OPEN) hosted "We are Oklahoma's Scientists: Ask Us Anything!" An estimated 70 community members, ranging in age from 3 to 70 years, attended the event which included a forum and hands-on activities.

University of Texas

The Women's Association of Minority Scientists (WAMS) at the University of Texas, Galveston, organized the "Scientists Among Us Youth Program." Graduate students and post-docs mentored teams of third and fourth grade students on a weekly basis. At the end of the project, WAMS also hosted a mini-STEM Career Fair and met with community leaders to discuss how to improve STEM education for K-12 students.

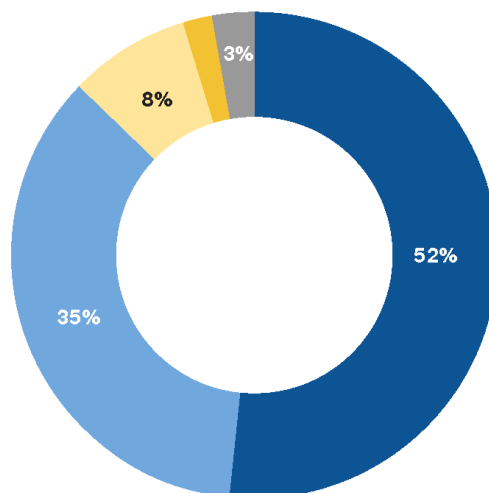


Key Learning: Understanding the Intersection of Science and Public Policy

Central to the work of civic science is familiarizing scientists with the public policy process and how they can and should engage. This involves understanding how government works (including its vital role in research funding, especially at the federal level) and how to contribute to the policymaking process. Importantly, the public strongly agrees that scientists should engage in this way.

In a 2022 national survey commissioned by Research!America, **87% of Americans say it's important scientists inform elected officials about their research**. As shown by the growth in campus science policy groups, many early career scientists are keen to learn how to effectively inform public officials. Many microgrants reflect this interest and provide real world opportunities to build such skills.

How important is it for scientists to inform elected officials about their research and its impact on society?



● Very Important ● Somewhat Important ● Somewhat Important ● Not at all Important ● Not Sure



"So many students have come back and told me, 'You know, in that job interview, one of the things I was asked is: 'What do you know about policy?'' And [because of their involvement in the Microgrant program], they have a very strong base to answer that question."

— Karen Liller, PhD, Professor in the College of Public Health, University of South Florida, Faculty Advisor for The Activist Lab at USF

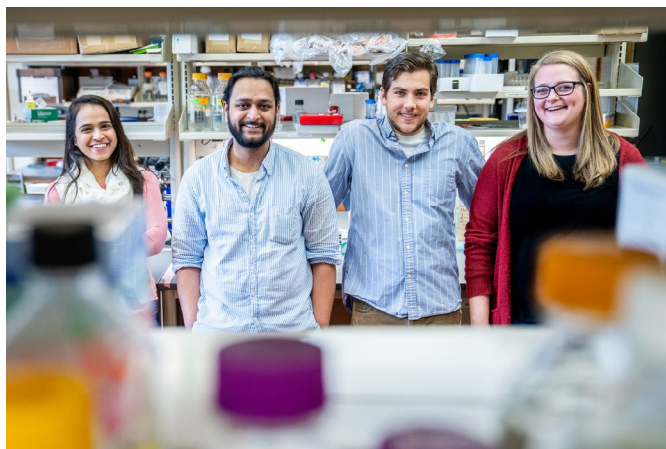


University of South Florida

“Something that came up a lot for micrograntees is how they never understood policy before the program ... and that understanding of policy allows them to feel more confident and competent... to integrate policy in what they do ... it just instilled in me even more the [importance of] how do we, as researchers, take on the responsibility to be citizens and to be policy advocates and to get involved in the policy development process.”

Virginia Tech

Micrograntees commented that the program enabled them to perceive how their scientific training and current research could be used to impact policy. **“I work in the aging realm ... now I think I have a bigger understanding of how the research I’m doing could impact policies surrounding Medicare and Medicaid.”**



PFIZER VACCINE THE FACTS

- ✓ The ingredients break down quickly, so it has to be stored at **-80 degrees C**, and then thawed and mixed with saline (salt water) shortly before it is given to patients
- ✓ It is administered in **2 doses at least 21 days apart**
- ✓ Each dose is **0.3 mL**.

Ingredients

- 1** **Growth material.** The vaccine contains copies of highly-purified, single-stranded messenger RNA (mRNA). This mRNA holds the genetic code for a specific part of the coronavirus, known as the spike protein. The Pfizer vaccine targets that spike protein directly by teaching your body to make antibodies against it.
- 2** **Lipid (oil) bubbles.** Tiny bubbles of lipid (oil) surround and protect the mRNA so cells in your body can pick it up. Four types of lipids are used in the Pfizer vaccine: ALC-0315, ALC-0159, 1,2-distearoyl-sn-glycero-3-phosphocholine, and cholesterol. ALC-0315 is the main lipid ingredient. The others are used in smaller amounts to stabilize the bubbles.
- 3** **Saline (salt) solution.** The liquid part of this vaccine contains: phosphate buffer solution (PBS), sucrose (sugar), and water. Salt water works better than plain water for injections because it holds the pH and salt levels of the mixture close to that of our bodies, so the injection will be more comfortable when we receive it.

University of Pittsburgh

A cross-disciplinary team of students in the medical and life sciences collaborated on the “Influenzers,” a vaccine education and outreach project. PhD students reported a better understanding of the difference between lab research and research applied to solving societal problems. **“I did not realize how siloed science was from decision making,”** said one student.

University of Missouri

The MOST group provided briefings to state legislators at the request of elected officials. **“We held one in-person briefing focused on gene editing technologies in agriculture. After the pandemic hit, we recorded three additional virtual briefings that were released in May, July, and August covering Missouri’s COVID-19 response efforts, election and voting security, and precision health.”**

Making the MOST of Science: Using Your Expertise for Civic Engagement

A three-part virtual workshop 12-1:30 PM CT

| | | |
|------------------|---------------------------------------|---|
| 4/16 | 4/23 | 4/30 |
| Science & Policy | Advocacy & Professional Opportunities | Science Communication, Policymaker Engagement, & Interactive Workshop |

For Missouri-based STEM and Social Science Graduate Students, Postdoctoral Fellows, and Researchers

REGISTER AT: mostpolicyinitiative.org/science-policy-workshops



SUMMARY OF EVENT AND PRESENTATIONS

**STATE OF THE SCIENCE
LOOKING TO 2030 AND BEYOND**

| | |
|---|--|
| <p>EVENT DETAILS</p> <p>Date: February 19th, 2020 4-7pm Location: New Belgium Brewery, Fort Collins, CO Format: Poster networking session</p> <p>GOAL To foster connectivity between student researchers at Colorado State University and local community leaders</p> <p>OUTCOMES</p> <ul style="list-style-type: none"> Students practiced and applied science communication training and techniques to interact with local policy makers and community leaders Students learned to craft a direct message suitable for policy outcomes and public engagement Local government has increased connections with local university experts to help inform policy related to sustainable planning | <p>STUDENT PLANNING COMMITTEE</p> <p>Jakob Lindaas Courtland Kelly Molly Butler Hyeyoon Park Cibi Chinnasamy Hailey Summers Wayne Chuang Kelsey Bilsback Kim Fewless Sam Houghteling</p> <p><small>SCHOOL OF GLOBAL ENVIRONMENTAL SUSTAINABILITY Colorado State University COLLABORATION. INNOVATION. CHANGE.</small></p> |
|---|--|

Colorado State

Micrograntees held a workshop with Fort Collins city council members and the mayor's staff. Graduate students gave presentations on the impact of climate change locally. The exchange was so productive, the mayor's office offered to present to the students at a future get-together.

University of California San Francisco

"Scientists need to engage in policy. It is not beneficial to science, politics, or the public for scientists to keep their knowledge to themselves ... Any scientist who wants to do this work can do it."

*science
now
more
than
ever*

Taking Science to Sacramento

The second event in the Science Policy Group's
California Science Advocacy Series
Featuring **Michael Bedard, PhD**
Legislative Director for the President of the University of California

Join SPG to learn from Dr. Bedard about the California legislature and how to be an effective science policy advocate.

Participating in this event will lead to an all-expenses-paid trip to the California Statehouse in January to advocate for a science position of your choice.

Tuesday, December 10, 4:00 p.m.
Dinner to be served
Mission Hall 1402 | Mission Bay

co-sponsored by the ASGD and supported by Research!America

RSVP: bit.ly/spgsac210

Key Learning: Exploring Career Options

Career exploration is a priority of many graduate students and post-docs. Micrograntees have expressed the value of the program for narrowing their interests and identifying or trying out potential new career paths. Because the program provides an immersive way to learn more about science communication, science policy, and engagement with policymakers, it enables graduate students and post-docs to make more informed career decisions based on their interests and values.

A recent micrograntee mentioned she had not been exposed to science policy or science communication as possible career paths. Through her Microgrant participation, she learned about both fields and developed a strong interest in program planning and project management, skills she wants to pursue after graduation.

Former Microgrant program participants share their sentiments about how participation shaped and refined the direction of their careers:



New Mexico Institute of Mining and Technology
Tech Policy Group at New Mexico Tech



University of Wisconsin-Madison
Catalysts for Science Policy

The Science Policy Group HTX
cordially invites you to

Effective Data Communication for Science Policy
Infographics Presentation & Website Launch

Science Policy Group HTX
Empowering Scientists to Effectively Communicate Data for Public Policy

Nov 2020
Secured Research!America Civic Engagement Microgrant

Dec 2020
Call for Applications & Participant Selection

Jan - Apr 2021
Data Analysis & Visualization Skills Training on Codecademy

Jan - May 2021
Biweekly Coding Happy Hours to Discuss Ideas and Troubleshoot

Apr - May 2021
Policy Submission, Data Analysis & Infographic Design

May 2021
Website Design & Launch

Final Presentation, May 24, 11:30AM CT
YOU'RE INVITED!

Topics:
COVID-19 vaccine access in Harris County
Healthcare access for Trans Youth
Policy Implications of a Soda Drink Tax
Racial Differences in Early STEM performance
Public Policy Implications of Ageing

Website (online May 24, 2021):
www.scipolhtx.com

Monday, May 24, 2021
11:30AM - 1PM CT

Zoom link
Meeting ID: 973 3949 6028
Passcode: 986016

Generously funded by

RESEARCH!AMERICA
DISCOVERY. INNOVATION. HEALTH.

RITA ALLEN FOUNDATION

[@SciPolGroupHTX](https://twitter.com/SciPolGroupHTX)
sciencepolicygrouphtx@gmail.com

The Science Policy Group HTX does not represent Baylor College of Medicine, the Texas Medical Center (TMC), any TMC institution, or our funding source Research!America and the Rita Allen Foundation. The views and opinions expressed may or may not reflect those of aforementioned institutions.

Baylor College of Medicine

"I love science, but I want to be involved in science in ways that are bigger picture and more impactful on a larger scale. And so [being part of the Microgrant program] is when I decided I wanted to pursue science policy."

University of Massachusetts Amherst

"If it wasn't for Research!America, I wouldn't be able to even verbalize why I wanted to do what I wanted to do ... It always seemed a little bit abstract or not quite tangible enough to know 'is this just an interest of mine? Or is this something I can really pursue?' I think [the Microgrant program] really solidified [civic science] as something I could pursue."

The Civic Scientist: Translating Your Research Training to Broaden Your Impact

Want to learn how your research training translates to public engagement and policy development, or possibly even take your career in that direction? Panelists will discuss the critical intersection of science and policy and help researchers understand how they can effectively engage in science advocacy, communication, and policy for the public good.

Thursday, March 5th

Professional Panel, 10-11:30am
Life Science Laboratories 5330-340
Scientists and state representatives will discuss the critical intersection of science, policy, and public engagement. Pre-register using the QR code below.

Optional Networking Luncheon, 11:45am-1:15pm
A limited number of seats are available at a luncheon with the panelists. Luncheon attendance by application only. Apply using the QR code below.



Distinguished Panelists:



Rep. Michael Finn
State Representative



Dr. Jessica Tsai
STEM Advocacy Institute



Rep. Aaron Vega
State Representative



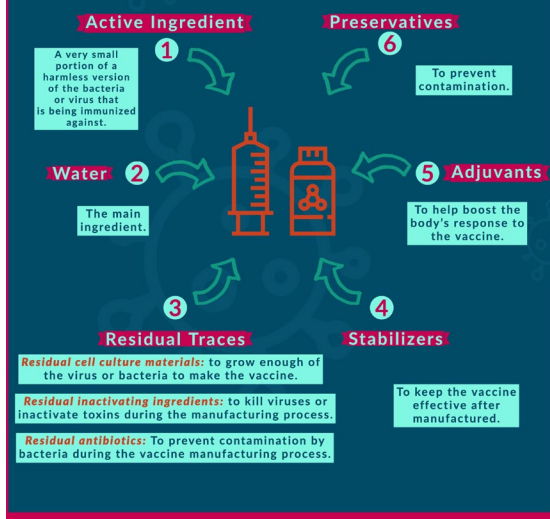
Dr. Brindha Muniappan
Discovery Museum



UMassAmherst
Graduate School
Office of Professional Development

WHAT'S IN A VACCINE?

6 MAIN INGREDIENTS TO MAKE A VACCINE

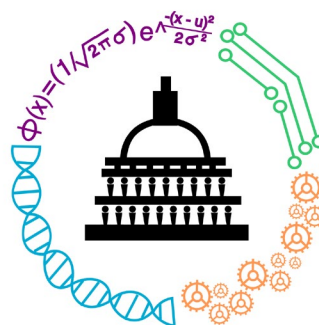


University of Pittsburgh

"I have always been interested in educational public health and policy work, but my degree does not really offer a lot of leeway in terms of taking those courses. So being around people who have more experience in [those areas] and being able to learn from them through this initiative has made me realize that I would really like to do more things like this in the future."

Houston Coalition for Science Policy and Community Engagement

The Microgrant program "allowed me to solidify my plans and to have the necessary foundation to be a really competitive applicant to a variety of different programs."



Houston
Science Policy and Advocacy Group

Making the MOST of Science: Using Your Expertise for Civic Engagement



A three-part virtual workshop

12-1:30 PM CT

4/23 — Advocacy & Professional Opportunities

In the second session of this three-part series, participants will learn more about how to engage in science advocacy, communication, and policy analysis from Jennie Luray, Senior Advisor at Research!America, and Emilee Kotnik, Co-President of the ProSPER graduate student group at Washington University in St. Louis. Attendees will also hear from current MOST Policy Fellows about career opportunities in state and federal government, and beyond.

For Missouri-based STEM and Social Science Graduate Students, Postdoctoral Fellows, and Researchers

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University of Missouri

"Due to the partnerships and connections I made through graduate school, through the Microgrant program, and other opportunities, I decided to continue working in science policy."

Medical University of South Carolina

The Microgrant program "... helped me narrow down my interests and what I want to do after my PhD. I really like patient advocacy. And I really like science policy. Those are definitely things I'll be interested in for the rest of my life, even if it's just reaching out to my local public officials with a letter or an email... [without the Microgrant program], I would not have known these options were even available to me."

Diversity & Inclusion BOOK CLUB

Collaborates with SO-PEAR!

Books are available for the first 10 participants

Email loverja@musc.edu with questions

Virtual Meetings (for now)

Teams Info upon Signup

https://linktr.ee/MUSC_GSA

SIGN UP LINK

NATIONAL HISPANIC HERITAGE MONTH

Introduction: 9/8/21 85:30pm

Book Discussion: 10/6/21 85:30pm

MY TIME AMONG THE WHITES

Notes from an Unapologetic Librarian

JENNINE CAPÓ CRUCET

Recommendations For The Future

As this report demonstrates, the Microgrant program has delivered a range of experiences and training opportunities to early career scientists that are directly related to civic science competency, from communication skills to community engagement to a greater understanding of the intersection of science and public policy.

1.

Modify Training Modules and Increase Peer Support to Enhance Benefits of the Microgrant Program

Every year, we've evolved the Microgrant program to better meet its goals and refine how we support students. Our planned areas of improvement for the 2022-2023 cohort:

- **Provide skill-building opportunities in bidirectional communication** to help micrograntees avoid the traps of the "deficit model." Without this training, micrograntees are more likely to focus on imparting information rather than finding ways to learn from non-scientists. Micrograntees are learning how to share information in clear and accessible ways – the next step is to support their dialogue skills.
- **Add monthly, structured professional development sessions** to facilitate networking among each microgrant cohort. We have an organic opportunity to help micrograntees build peer relationships early in their careers to support continued civic science engagement later in their careers.
- **Front-load current training provided by Research!America on practical skills** like program and event planning, marketing, and social media management to occur earlier in the grant cycle. Such training enables grantees to create roadmaps and timelines, effectively promote their projects, and raise questions early to ensure they receive the proper support.
- **Increase one-on-one or small group mentoring** by the Microgrant program coordinator. We observed that micrograntees who participated in regular check-in meetings (or worked with an engaged faculty sponsor at their university) were better able to set realistic timelines and more successfully achieve and even exceed their program goals.



"I have spoken to all the faculty who are the advisors to the students who are in our program, and I've seen over the three and a half years since we started: faculty are beginning to get it. The 'penny has dropped' that this is a very public face of [our students'] research. It gets them lots of kudos."

— Dr. Susan Hackwood, Professor of the Graduate Division and Edward A. Dickson Emeritus Professor at University of California, Riverside



2.

Increase University Support of Microgrant Program and other Early Career Civic Science

The Microgrant program could be an even stronger experience for students if colleges and universities prioritized their institution's engagement.

Faculty advisors provide a tangible source of support. We found that those science policy groups who work with engaged faculty advisors face fewer bureaucratic hurdles from their administration. This is not only critical in the disbursement of the grant but also increases the group's visibility on campus. A faculty mentor can also help micrograntees think through their ideas, make connections to speakers and community organizations, and act as a sounding board. A workshop for would-be faculty advisors of civic science groups could be something offered as an outgrowth of the Microgrant program.



3.

Work to Change the Culture of Science

The Microgrant program and other early career civic science opportunities are currently adjunctive to graduate and post-doc training. Students squeeze these activities into their jam-packed schedules with typically little to no support from their universities.

Greater university support, both financially and administratively, is needed to build and sustain civic science engagement such that it becomes an intrinsic part of graduate STEM training. This includes experiential models like the Microgrant program as well as incorporating coursework relevant to civic science.

Skills needed for civic science such as how to communicate with non-scientists, are generally not taught in graduate programs. The responsibility lies on the student to seek out this training outside of their formal education.

To address this gap and grow a culture a civic science within academia, the "Public Context of Science" course has been proposed. The course is recommended in the report "[Beyond 2020: A Vision and Pathway for NIH](#)," (note: Research!America President and CEO Mary Woolley was a member of the report committee) and further detailed in a paper written by Research!America staff and published by the Day One Project, "[Modernizing the Relationship Between Science and the Public](#)."

The Microgrant model could serve as the experiential counterpart of this course. Combined, the course and the Microgrant program would ground early career scientists in their larger role in society and provide the initial skills and perspective to propel them towards a lifelong embrace of and engagement in civic science.

Appendix: List of All Micrograntees

| Schools and Associations 2018–2019 | | |
|---|---|---|
| School/Association | Project | Project Type |
| Johns Hopkins University | Baltimore Science Policy Bipartisan Candidate Forum | engagement with elected officials, workshop, poster session |
| University of California, San Diego | Increasing Science Policy Awareness in CA-49 Ahead of Midterm Elections | outreach/education, lab tour, public forum |
| University of California, San Francisco | Writing for an Impact | workshop series |
| University of Illinois Urbana-Champaign | Illinois 13th Congressional District Candidate Town Hall | public forum |
| University of Missouri | Missouri Science Policy Cafes | outreach/education |
| University of South Carolina | Coffee with Candidates | advocacy |
| University of Virginia | Science Policy in the Home of Jefferson | public forum |
| University of Washington | Connecting Candidates to Community Health | public forum |
| University of Wisconsin, Madison | Science Policy Bipartisan Engagement Initiative | workshop, panel |
| Vanderbilt University | Town Halls to Engage the Scientific Community of Tennessee | public forum |

Schools and Associations 2019–2020

| School/Association | Project | Project Type |
|---|---|---|
| Duquesne University | A Fact Finding Symposium for Improving Our Community's Water Quality | public forum |
| Johns Hopkins University | Baltimore City Hall Poster Session | poster event/flipped science fair |
| Colorado State University | Schmoozing with Scientists: connecting graduate student expertise with Fort Collins policy issues | poster event/flipped science fair, networking |
| Michigan State University | Spring 2020 Science Policy Series | workshop |
| Mississippi Valley State University | Deliberative Community Forum | public forum |
| New Mexico Institute of Mining and Technology | Roundtable discussions on cybersecurity with public officials and young scientists | policymaker outreach and education |
| University of Kansas | Bridging the gap between science, policy, and community in Kansas | demonstration/tour, public forum |
| University of California, Berkeley | Scientific Ethics: We Can, but Should We? | public forum |
| University of California, San Francisco | Scientists in Sacramento | workshop |
| University of Chicago | Chicago Water Science & Policy: From the Great Lakes to Our Taps | public forum, demonstration/tour |
| University of Florida | Science Matters Policy Memo Competition | competition, workshop |
| University of Massachusetts Amherst | The Civic Scientist: Translating your Research Training to Broaden your Impact | policymaker outreach and education |
| University of Missouri | Science Briefings on the Missouri Hill | policymaker outreach and education |
| University of Wisconsin-Madison | Science Fair for Adults | community outreach and education, panel |
| Virginia Tech | Big Lick of Science Podcast | podcast |

Schools and Associations 2020-2021

| School/Association | Project | Project Type |
|---|---|---|
| American Physician Scientists Association (APSA) | Virtual Policy Panel | workshop |
| Baylor College of Medicine | Empowering scientists to become effective communicators using data science tools | data visualization |
| Boston University | SPARK - Science Projects Activities Reaching Kids | community outreach and education |
| University of Pittsburgh School of Medicine | The Influenzers | community outreach and education |
| Stanford University | Science Policy Hill Day 2021 | workshop |
| The Rockefeller University, Weill Cornell Medicine Center, and Memorial Sloan Kettering Cancer Center | Politics Under the Microscope | podcast |
| Yale University School of Medicine | Yale Flipped Science Fair VS | community outreach and education |
| Medical University of South Carolina | South Carolina - Policy, Engagement, Advocacy, and Research (SC-PEAR) | community outreach and education |
| Morgan State University | #BlackInSciPol | new group |
| The Ohio State University College of Medicine | Columbus City Schools High School Mentorship Program with OSU Department of Surgery | mentorship |
| University of California, Irvine | Data Science & Art in Science Career Cohort | workshop, data visualization |
| University of California San Diego | National City Restorative Education About Plants (REAP) | outreach/education, roundtable |
| University of Georgia | Science relevant issues at the local and state levels | policymaker outreach and education |
| University of Massachusetts Amherst | "TriSci Science Policy Memo Triathlon: Learn, Write, Advocate" | workshop, competition |
| University of Michigan | "Flipped Science Fair for Public Policy" | community, policymaker outreach and education |
| University of Missouri | Using Your Expertise for Civic Engagement | professional development |
| University of Nebraska Medical Center | Health and Science Policy Seminar Series | workshop |
| University of South Florida College of Public Health | Environmental Health, Climate Change, and Advocacy to Improve Health!" | podcast |
| Virginia Tech | BOLD: Biomechanics Online Learning Destination | community outreach and education |

Schools and Associations 2021-2022

| School/Association | Project | Project Type |
|---|--|--|
| Houston Science Policy and Advocacy Group (HSPAG) | Hot Topics in #SciPol | new group, workshop |
| Howard University | Hue Health Group | outreach/education |
| March for Science NYC (MFS-NYC) | March for Science NYC | workshop, community and policymaker outreach and education |
| Northwestern University | Science Policy Outreach Taskforce (SPOT) | podcast |
| Oklahoma Medical Research Foundation | Oklahoma Science Policy Group | community outreach, education |
| Sustainable Futures Lab | The Sustainable Futures Lab | mentorship |
| Twin Cities Science Policy Network (TCSPN) | TCSPN | workshops |
| Wake Forest School of Medicine Chapter | Students for Sensible Drug Policy | community outreach and education |
| Women's Association of Minority Scientists | Virtual Science Fair | community outreach and education |
| Yale University | Open Labs | community outreach and education |
| Bowling Green State University | Conservation Speaker Series | community outreach and education |
| Morgan State University | #BlackInSciPol | new group, webinar/seminar, roundtable, workshop |
| Pennsylvania State University | Medical students at Penn State College of Medicine | community outreach and education |
| UC Berkeley and UCSF | Science Ethics and Policy Symposium: From Plants to Privacy: Science Ethics for the Modern Era | workshop |
| University of California, Irvine | Science Policy and Advocacy Network | new group, workshops |
| University of California, Riverside | Policy Pitch and Poster Session | competition, policymaker outreach and education |
| University of Cincinnati | University of Cincinnati Science Policy Ambassadors | workshop |
| University of Nebraska Medical Center | Health and Science Policy Seminar Series | workshop |
| University of South Florida | The Activist Lab | workshop, podcast |
| University of Texas Medical Branch | Women's Association of Minority Scientists | community and policymaker outreach and education |
| Wayne State University | Environmental and Community Health Focus Groups | community outreach and education |