



Webinar Transcript

Rewriting the Rules: What's happening to public science?

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On July 22, 2026, the [National Academy of Public Administration](#) (NAPA), the [Center for Open Data Enterprise](#) (CODE), and the [Bridge Alliance](#) co-sponsored a public webinar on *Rewriting the Rules: What's happening to public science?* with the panelists shown above. The webinar was described as follows:

The current administration has upended the longstanding relationship between the federal government and scientific research, including through targeted cuts to research funding, dismantling advisory committees, and proposing that all research be reviewed by political appointees. This webinar will explore the impact of these changes; how scientists and the public can respond; and how the public can know what scientific information to trust when politics and science are intertwined.

The one-hour webinar recording [can be viewed here](#). CODE has also provided the following transcript, lightly edited for clarity and flow.

Alan Shark: I want to welcome everybody to this webcast. My name is Alan Shark, and I am the co-chair of NAPA's Standing Panel on Technology Leadership. I share this responsibility with Theresa Pardo, who is Associate Vice President for Research at the University of Albany. And we are delighted once again to continue our series on topics having to do with data and trust. This webinar is co-sponsored by NAPA and its Standing Panel on Technology Leadership, the Center for Open Data Enterprise (CODE), and the Bridge Alliance.

We're very happy to have Joel Gurin spearheading this effort. Let me introduce him, because he, in turn, is going to introduce our amazing panel today.

Joel is an internationally recognized open data expert with a background that combines government, journalism, and nonprofit leadership. Over the years he has focused on democratizing the use of data, and on data for equity, climate action, and improving health. His government experience includes serving as the Chief of the FCC's Consumer and Governmental Affairs Bureau, and later as Chair of the White House Task Force on Smart Disclosure, using open data to help consumers make informed choices. He is an award-winning journalist and is president of the Center for Open Data Enterprise, or CODE, which he founded in 2015. He was elected as a NAPA Fellow in 2023. I could go on, but with that, Joel, I'm going to let you introduce your panelists. We look forward to great discussion.

Joel Gurin: Alan, thank you so much. And many, many thanks to NAPA and the Bridge Alliance for supporting this whole series, and to this amazing group of panelists who we are going to start a conversation with in just a minute.

The title for this webinar is, "Rewriting the Rules: What's happening to public science?" It is very much about what's happening under the current administration, which has upended a long-standing relationship between the federal government and scientific research. This has included targeted cuts to research funding, dismantling advisory committees, and even proposing that all research be reviewed by political appointees.

We have a fantastic panel here today to talk about the impact of these changes and how scientists and the public can respond. And ultimately, because this whole series is about trust and information, we'll discuss how the public can know what scientific information to trust when politics and science become intertwined in this kind of way. So let me introduce our panelists quickly.

Going in alphabetical order, I'll start with Aaron Carroll, MD, who is the president and CEO of [AcademyHealth](#) and a passionate advocate for the use of evidence to improve health care for all. Before joining AcademyHealth, he was a distinguished professor of pediatrics and chief health officer at Indiana University and a Robert Wood Johnson clinical scholar. His research focused on information technology to improve pediatric care, decision analysis and health policy. He has written or co-authored four books on health and medicine, has been a regular contributor to The New York Times and The Atlantic, and now co-edits The Incidental Economist, which is an evidence-based health policy blog.

Our next three panelists, in addition to being brilliant national leaders in their own organizations, and in addition to all being PhD researchers, have the shared history of having worked together at the White House Office of Science and Technology Policy (OSTP). That is probably about the best possible background for the conversation we're going to have today.

Gretchen Goldman is the president and CEO of the [Union of Concerned Scientists](#). She previously served in OSTP as the Assistant Director for Environmental Science, Engineering, Policy, and Justice. She also focused on scientific integrity, indigenous knowledge, and air quality and community health. Previously, she served at the US Department of Transportation as the Climate Change Research and Technology Director, and as the Research Director at the Center for Science and Democracy at the Union of Concerned Scientists.

Next, Chris Marcum is a senior advisor for federal data policy at the [Federation of American Scientists](#), where he brings expertise on information policy and data governance to two critical projects around data preservation and data usage. One is [dataindex.us](#) and the other is [essentialdata.us](#), both worth checking out if you have not already. He is a world leader in the open science movement. He's written more than 80 scholarly articles and thought pieces. When he served in OSTP, he was the Assistant Director for Open Science and Data Policy. He also served as Senior Statistician and Senior Scientist in the White House Office of Management and Budget. He's also a Senior Fellow now in the Center for Data Policy at the Data Foundation.

Finally, Maryam Zaringhalam is the Senior Director of Policy at the [Center for Open Science](#). In that position, she leads the center's policy efforts to increase openness, integrity, and the trustworthiness of research. She previously served as the Data Science and Open Science Officer at the National Library of Medicine at the NIH. When she was at OSTP from 2022 to 24, she served as the Assistant Director for Public Access and research policy and oversaw Federal policy development around public access, open science and scientific integrity.

Welcome to all of you. I really appreciate your taking the time to have this conversation today. Let's dive into the conversation.

I'm going to start with a question I'll ask each of you to answer about the situation we find ourselves in today. Since World War II, the federal government and the scientific research community have had a very close partnership. And that has changed dramatically over the last year and a half. I'd like to ask each of you: What have you seen as the most significant changes, and how do you see what's going on now in a historical context?

Gretchen, I thought we might start with you, particularly because of some of the tracking work that you're doing at the Union of Concerned Scientists.

Gretchen Goldman: Thank you, Joel. I'll try to be brief, since I know we have lots to cover, and it's a very large question. As you said, there's been this long-standing relationship between the federal government and the science and technology enterprise in the US at large. That's led to a tremendous amount of innovation and global leadership in this country on science and technology. That's largely stayed free from political interference in the sense of allowing merit-based processes, allowing technical experts to decide research directions. And what we're

seeing now is quite a substantial break in that. We are seeing an unprecedented speed, scope, and severity of disruption to the federal science and technology enterprise, which includes both what's happening on the research and development side and also all the other ways that we use science and evidence across the federal government, across federal programs, and on all of those activities.

The Union of Concerned Scientists has been tracking what we call attacks on science since the George W. Bush administration, which is a collection of times where science is sidelined or silenced or there's a [scientific integrity](#) abuse. And [we just came out with the latest version of that](#), which is up to 576 attacks on science under this term of the Trump administration only [as of July 22, 2026] and that number 576 is more than double what we saw in the entirety of the first Trump administration, and well above all the other administrations prior that we've been tracking. And so, we've seen right out of the gate, this really high volume of attacks. This involves both political interference in what's happening in science spaces, and also some severe disruptions - clawing back grants that have already been obligated, and ignoring Congressional mandates on federal science programs. We're seeing quite a disruption as this administration goes on. I'll stop there but just note that we're tracking all of that so that we're able to both document and record what's happening as best we can, record those impacts, and also so that we can all make sense of it and decide collectively what to do about it.

Joel Gurin: Thank you, Gretchen. It's a very sobering statistic, and I think helps set the stage for what we're going to be talking about today. Chris, I thought I'd turn to you next. In a similar kind of way, you're tracking the risk specifically to data sets, including the kinds of data that is produced by scientific research, either done by or funded by the federal government. Talk a bit about what you're seeing and how the work you're doing at Data Index relates to addressing the kind of risk that we're seeing in scientific data particularly.

Chris Marcum: This is a great question, and I'll join Gretchen to thank you, Joel, for the invitation. I think it's no surprise to anyone on this call that there has been an amplification in the risk to federal data since the start of this administration. We saw very early on, as I documented [in a report I did for Funders for the Future of Public Data](#), 3FPD, that there were around 3,000 to 4,000 data sets removed from public access by this administration. Over 600 information collections have been discontinued. Some of them are high profile, like the USDA's food supplement survey, which is conducted in partnership with the Census and the Bureau of Labor Statistics.

One thing that I'm taking away from this is a strong effort to increase the friction for the public to access federal information, whether it's through removing websites or taking down data sets or removing data tools while keeping the underlying data available. And I think that it is a strategy. I don't know what the end goal is for it, but I do think it is a strategy.

From a 30,000-foot perspective, we've seen a concerted effort to concentrate a lot of power in the Office of Management and Budget, my old office. You see many of the actions coming out of the administration originating in OMB and the actions on data and science in particular. And that might be an increase in the review that some assets are undergoing or the rulemakings that agencies are experience

At dataindex.us, I'm very privileged to work with Denise Ross and Chris Dick through the Federation of American Scientists. It's a monitoring platform and also a call to action to engage in public comment on collections to amplify the importance of federal data, how it impacts daily lives, and how individuals can participate in the democratic process of notice and comment when it comes to information collections that result in federal data. So I would encourage anyone to check that out. There's a really nice tool on there called the Federal Data Health Checkup, and it gives an assessment of the state from a risk assessment perspective of individual data collections.

Joel Gurin: Thank you so much, Chris. That's great work that you all are doing. As we continue this conversation, I want to make sure that we get into things that people can do. The notice and comment process that you all have been promoting very effectively is one good example.

Maryam, I'd like to turn to you next. Your organization, the Center for Open Science, has done a lot of thinking and writing about what the administration is now calling gold standard science. I think that's a paradoxical thing, because it gets us into this question of what high-quality science is, and who gets to define it. And I know that you all have had some views and some concerns about the way that's headed as well. Talk to us about that please.

Maryam Zaringhalam: Yes, and echoing thanks for the invitation to be part of this great group. Last year, the administration issued an [executive order on restoring gold standard science](#). In the last kind of decade, I've heard an increase from the research community in this idea that the public doesn't trust science. There's a bunch of data, long-standing polling, that show that trust and confidence in researchers to act in the best interests of the public is quite strong, although it has gone down over time. If you compare that number to other professions, other disciplines, the decline is more of an erosion of trust in institutions of which the research community is part.

Trust in science is still quite high in that context, whether you're looking at Pew polling, you're looking at the general social survey that's done by NORC at the University of Chicago, or Research America, or the Association of Science and Technology Centers.

But that executive order states that trust in science is going down, and that researchers have earned this mistrust. And when that message is coming down from the head of the administration, from the executive branch, you are doing a lot to sort of poke at trust in science by saying the research community that the public funds is not trustworthy, regardless of what the data say.

And so, they outline these tenets of gold standard science. [For the Center for Open Science, reading through them](#), they're generally things that we've long advocated for, things like transparency, reproducibility, making findings subject to independent peer review without conflicts of interest, accepting negative results as positive outcomes. And yet they place adjudication of what is gold standard and what is not - what research is able to be incorporated into our evidence-making processes - in the hands of senior political officials who, by the way, are among the least trusted by the American public.

I've been thinking a lot about how perpetuating this idea - if we adopt this notion or this stance that the public doesn't trust us as the research community, we're kind of opening up space for

us not to be at the table in discussions about what meaningful research reform looks like. And the framing of that executive order also discounted all of this incredible work that has been done over the last decades in open science, in increasing public access to research outputs that agencies have been advancing for quite some time, in actually thinking critically about safeguards to scientific integrity in federal agencies and protecting research from inappropriate influence. It just kind of pretends to take away all of those efforts and says, no, we are restoring this thing that people have been putting so much energy and so much dedication and input with the research community to really think about. What does trustworthy research look like? How does the research community deliver on the social compact of science? So, I'm a little fired up about it.

Joel Gurin: Thank you, Maryam. I think that's a clear explanation and presentation of what's going on. And I want to come back in a little bit to this question of what can we do and what has the scientific community actually been doing to increase trust in science, and the point that putting science in the hands of political appointees is not only a bad idea for science, but not likely to increase trust, among other things.

Before we get into that, Aaron, I'd like to ask your view of what's been happening, particularly around health and medical research, which has been an area along with climate research that's really been impacted by this administration, and also some of the work that AcademyHealth has been doing to push back.

Aaron Carroll: A lot of it is very similar to what other panelists have said. I think from the top down there's been - it feels like sometimes an intentional erosion of trust, because that can help an agenda. But the biggest issue that we've seen across the board is that things that used to be very stable and understandable have become chaotic. You used to know that if you got a 5-year grant, it was good for 5 years, short of something going terribly wrong. You used to know that if the study section was going to meet this date and then the council was going to meet this date when you might know what's going on with a grant. You knew if you submitted your progress report you would get your next notice of award in a reasonable amount of time in order to keep work going.

None of that is true anymore. So many grants have just been canceled. This week, we've been dealing with many health services research-focused grants from AHRQ that were just summarily canceled midstream as of last Wednesday. These grants are all over the map. They're not, you know, in one area. They're not one type and all of them were given sort of the same form letter saying this is because they don't align with federal priorities and then it lists a number of priorities and many of these grants are aligned with those priorities. So it clearly doesn't make sense. It's very hard to do research when you just don't know what the rules are, and where the playing field is. In addition to this being obviously more political in actually being intentional in moving political appointees more into the process of how science works, how science is funded, how science is applied is problematic

The only thing I would add that is when it comes to health, there are immediate and real repercussions for how this goes. When the USPSTF is fiddled with, when ACIP is fiddled with, when CDC guidelines are fiddled with, how all of these things might be applied in Medicare or

Medicaid or in public health has immediate and real implications, some of which we're seeing out there with the renewed incidence and prevalence of certain infectious diseases that we used to not hear about on the news.

All of that is real. It involves real people's lives, and real people's health, and it has real implications.

Joel Gurin: Thank you, Aaron. If I could just ask you for folks who may not be familiar: You used a couple of acronyms. I wonder if you could just spell them out and say what they are and what they do. One is AHRQ, one is ACIP, and the other was USPSTF.

Aaron Carroll: AHRQ is the Agency for Healthcare Research and Quality. It is not part of the NIH. It is a standalone agency that focuses on what we would call health services research, on things about the access, quality, and cost of the healthcare system.

I like to say that everything Americans hate about healthcare is what AHRQ focuses on. You complain that it costs too much? That's AHRQ. You complain it takes too long to see a doctor, waiting times are too long? That's AHRQ. You complain that we're not getting the quality that we should? That's AHRQ. You say, why is chronic disease on the rise? Why can't we focus on nutrition? That's AHRQ! And so, it makes no sense why this administration or any administration would want to get rid of it, but that's where we are.

The United States Preventative Services Task Force is a body of primary care-focused researchers who evaluate evidence for guidelines that then get, you know, for a whole host of things which focus on prevention. How do we, you know, do better prevention of breast cancer and use mammograms? That's the USPSTF. How do we do better screening and prevention of heart disease? That's the USPSTF. How do we do better prevention and screening of mental health? Or pick anything you like, it's the USPSTF.

What also makes them also special is that they grade the evidence that AHRQ often provides, and if it gets an A or B, then all insurance in the United States has to cover it with no out-of-pocket costs. So the reason that you get a colonoscopy screening when you turn 50 that's free to you is because of the USPSTF. The reason that many women get mammogram screenings free of charge is the USPSTF. Again, it directly affects the health of hundreds of millions of Americans. But now the USPSTF has not met for over a year and has been tinkered with in any number of ways that I'm happy to discuss.

ACIP, the Advisory Committee on Immunization Practices, is a group of experts who advise the FDA and sometimes the CDC on how we should have national policy and recommend or not recommend vaccines. Last year, Secretary Kennedy summarily fired all of the people who were on the committee and then replaced them with a whole new batch of people, many of whom were not removed from ideology in ways that you would hope an organization or body like that would function. They've been mired in a bit of controversy in changing guidelines, whether it's for hepatitis vaccine for infants, or for how we talk about vaccines.

Joel Gurin: Thank you very much, Aaron. You know, people may think of scientific research as a bit ivory tower, but what those examples make clear is that we're talking about fundamental information that we need for health issues that affect every American. I think that's really

important for folks to know. I want to get to that OMB proposal that you referenced, but before I do, Gretchen, I'd like to turn to you. I think of health. and climate research and information as two of the areas that have been hit hardest in these attacks on the scientific process. The Union of Concerned Scientists has a very strong focus on climate. I wonder if you might share what you're seeing there. And then, Chris, I'd like you to lead off the discussion on OMB, which we'll tee up in a minute.

Gretchen Goldman: To start off, I personally feel devastated by the attacks on climate science. In the last administration I came in with a wave of climate and clean energy focused people who were really excited to do a lot from a federal position, and almost all of us are gone from the federal government now. We were not only robbed of that progress and potential that we had with that talent, but similar to what Aaron outlined on the health side, we're now seeing the devastation of longstanding existing activities on the climate side.

Some were things that have gone on for decades and were not at all connected to the political level, and that's been devastating to see. We've seen the gutting of the US Global Change Research Program, a lot of the National Oceanic and Atmospheric Administration's climate activities, attacks on the US Department of Agriculture's climate hubs, all of these places.

But on the climate side we've also seen an impressive number of people fighting back. My team at Union of Concerned Scientists has been doing a lot to push back on these climate attacks. We were instrumental in restoring some of the different regional climate centers and data repositories that they were looking to stop from collecting data. We've been mobilizing heavily around the attacks on the National Center for Atmospheric Research, NCAR. And we've seen a lot of people take up independent science activities, outside of government recreating some of the federal capabilities that have been decimated. This includes one that you might have seen: climate.us, which has replaced what was climate.gov, which was a federal web page. They've now recreated it outside of a federal context so that that climate-related information and resources and tools and data can still be accessible to the public. And so we're seeing a lot of people mobilize in response to the attacks on climate.

Joel Gurin: Thanks so much, Gretchen. That's a great segue to move into talking about what scientists and the public can do about all this. Chris, because I know you've been tracking the comments on this and analyzing them quantitatively, could you say a few words about what [this new OMB proposal](#) is and what the response has been from both scientists and the public as well.

Chris Marcum: Sure, Joel. I just have to point out something that Gretchen just said about climate.us and how it relates to my opening remarks, when I mentioned increasing the friction to data. In that case, the underlying data remained publicly available. And because of that, climate.us is able to do a lot of the good work that you're able to do to restore that website.

On the OMB, the proposed regulation for federal financial assistance that you were referencing, Joel, is a sort of an unprecedented revision to guidance that came out a decade ago or so for what has always been considered to be guidance for federal agencies on how to administer their research development grants. That's about \$150 billion or so in grants that the federal government hands out, both through the grant-making process, like at NIH and NSF, but also

through smaller agencies like AHRQ that Aaron had mentioned earlier. And I'd be remiss if I didn't point out that the 150 billion is just a small fraction of the roughly 1.1 trillion in federal financial assistance that is exposed to this proposed regulation.

The top line on this is that OMB is proposing to change the guidance into a regulation and the implications of that are pretty significant. It does, as I mentioned, help further concentrate power into the Office of Management and Budget, because this is an OMB regulation, and so the terms and conditions for all of the grant-making enterprise across the federal government would be effectively controlled by the director of the Office of Management and Budget rather than the political appointees at those agencies. It's also binding on the agencies, and so they have to basically comply with it once the rule is finalized.

There are a lot of things in this huge revision, and we can't go over all of them, but the big ones are proposals for having political oversight or pre-issuance review of all federal grant making. Abigail Haddad and I analyzed over 50,000 of the public comments in [an editorial in Tech Policy Press](#) right on the day that the comments closed last Monday. [Comments closed on July 13, 2026. The current count of public comments can be found at <https://omb-comments.abigailhaddad.com/>.] The number one concern was the politicization of science, and the top three were politicization of science, issues related to scientific integrity and the erosion of merit-based review. There was strong opposition: 94 percent of people that responded with comments opposed the rulemaking, and those that actually supported the rulemaking supported it in a very narrow way, mostly supporting the government's efforts to reduce waste, fraud, and abuse in sort of a form letter campaign. [Panelists shared links to analyses of the rulemaking from the [Center for Open Science](#) and [AcademyHealth](#).]

Some other subtle things are in the grantmaking regulation. There are limits on allowable expenses. Initially the Office of Management and Budget wanted to reform the facilities and administrative fees, the overhead, but the universities responded to their members of Congress. Congress basically put a stop to that, prohibiting any revisions to indirect or negotiated rates. But OMB did an end run around this by modifying what could be expended on grants.

Joel Gurin: Thank you, that gives us a really clear overview. I just want to highlight two things you said. One is to underscore that having research reviewed with veto power by political appointees in this way is, I think, pretty much unprecedented, at least for American science over the last several decades. The other thing is that 50,000 individual comments is phenomenal. For somebody to comment on a federal rulemaking, it's not like you sign a petition or just click something and you're done. You have to write something and submit it. So that's a really good indication that there's an ability now to rally the scientific community and people we might call science allies in pushing back against some of these moves. I mean, I find that. I find that 50,000 number encouraging at least.

I'd like to open it up to all of you: What are you seeing in your work that gives you hope? And how can we build on what gives you hope in terms of the growing awareness of these issues and a growing willingness to push back?

Aaron Carroll: What gives me hope is that regardless of what a small number of people think, the vast majority of people know that good science leads to better health, and that's our focus. You can say you don't care about evidence, but I promise you, pharmaceutical companies care⁹

about data and evidence and research. And I promise you, health care systems care about data and evidence and research. And I promise you, insurers care about data and evidence and research. And so do doctors and so do nurses. And so does everyone else involved in healthcare.

They all know that the major improvements we've made over the last hundred years are because of scientific endeavor, and the way that we've conducted things, and the massive engine that has been supported by the NIH and AHRQ and others in the last 50 years. They matter.

I have seen in the last year more willingness from many of those stakeholders to start to work together in ways that they might not otherwise have. And I do believe that at the end of the day, science will win because it's how we get better health and how we get rid of diseases and how we improve people's lives. There have been a lot of setbacks in the last year or two, but I've also seen a lot of people coming together in ways that I have not seen in the past.

Gretchen Goldman: I would echo that. I was so inspired by the amount of response from the scientific community on the OMB rule; [I wrote a blog post about it](#). It really was remarkable to me to see the different corners of the scientific community that stepped up and said, I'm not going to stay on the sidelines for this one, I need to say something about this. That's the kind of unity we need in this moment, and it's the kind of bravery we need from the community at large to really have a chance of [fighting this and all the other attacks we're seeing](#) on science in this country now. So I was really inspired by that, and I'm hopeful that it will be a flashpoint that will allow us to all keep going and fight some of the other attacks that we know have happened and might come in the future.

Joel Gurin: Thank you so much. Maryam, I also want to ask you to talk a little bit about open science and trust, because I want to end this conversation before we go to Q&A with the trust question. But first, anything you'd like to add on? Is this a groundswell or a potential groundswell you think we're seeing?

Maryam Zaringhalam: I'd like to underscore Gretchen's comment that it takes bravery to engage in this work and 50,000 commenters were brave enough to engage in this way. Thinking about the funding landscape that we're seeing, if you put your name forward or your organization's name forward, that could put a target on your back because you're commenting on a thing that provides a mechanism for doing that. So I do think it has been tremendously heartening to see that.

I'm an interdisciplinary person, perhaps because I get bored if I sit in one place for too long. So while I have a background in open science policy, I also have a background in public engagement and science communication and doing advocacy work for communities that have been historically excluded by research. And I see that these pieces of the puzzle that make up who I am as a person are starting to coordinate and collaborate with one another at an organizational level. So it's been really great for me at the Center for Open Science to have an opportunity to collaborate with folks on Gretchen's team at the Union of Concerned Scientists and to work with the Association of Science and Technology Centers that are thinking a lot about what trustworthy institutions and trustworthy public engagement look like. And then in

other spaces to have opportunities to work with CODE and Chris in the many hats that he's wearing, thinking about [what is a more robust, resilient future for infrastructures](#) that we care about that enable openness.

I think we've had to be really resourceful and creative in thinking about what coalitions we need in order to push back against these harms. I do find that there's been more room for collaboration. I don't know if that's the times that we're in, or scarcity of resources and trying to make the most of what we have, but that does give me some hope.

Joel Gurin: Thank you so much, Maryam. I want to segue now to that topic of trust and what does it take to really ensure that the public maintains the high trust they have in science and that they're not confused by the politicization and the intermingling of politics and science that we're seeing. Maryam and Chris, because you've worked on this issue a lot, if you might talk a bit about just what the open science movement is, and what the hope is in terms of open data publication as a basis for trust and for better science.

And then, Aaron and Gretchen, if you might talk respectively about both health and climate. The public is bombarded now with a lot of conflicting claims. I'm curious what your advice to the public might be about how to sort through that and how to know what is trustworthy and what is not, at least at a 30,000-foot level.

Maryam Zaringhalam: The open science movement has been pushing for increasing access to the products and processes underlying discovery. The first focus has been on research that is federally funded with the idea that if it's funded by the people, it should be freely and immediately available to the people. There have been a lot of inroads in thinking about access to publications, increasingly around access to data, but this also includes things like access to code, access to study plans, protocols, and all of the things that underlie discovery. And it's really been gaining traction, I think, due to some pretty major policy movements in the last administration that Chris and I had the great fortune of being a part of, along with a very robust interagency community and supporters from outside.

I think about open science as a means to an end, not an end in itself. As we're increasingly making information available, you can find all kinds of things that you want at varying levels of credibility, veracity, integrity, quality, and so on. If we're not layering on top of open research outputs, community engagement and bridge-building efforts between research institutions and the communities that we are a part of, then we can be creating more confusion and mistrust.

For example, I have a PhD in bioinformatics and molecular biology. I know a lot about RNA modification and pseudouridine. But if I were to evaluate a very technical atmospheric chemistry paper that might make perfect sense to Gretchen, I would be lost. I would need her help, her guidance, and some sort of intermediary to help me walk through and understand this.

So I think that openness is necessary to create these sorts of relationships between researchers and the communities that we exist in, but it's not in and of itself sufficient. We have to be open and publicly engaged, civically engaged, in order for us to meet these goals of trustworthiness.

Chris Marcum: Maryam articulated that so eloquently, there's very little for me to add to that. The Internet Archive has a very radical philosophy in this area of universal access to all

knowledge, and open science is one thread in that mission. I like the radicalness of that. I would add that we're trying to make open science be just science and that we like practices that improve transparency and improve replicability because those things help build trust. Those are the elements in which expertise can be clearly articulated. But you need to do that, as Maryam said, in a ground-up way, you have to involve the community. The people producing science have to be able to communicate that science transparently, and it's hard. And so, on top of Maryam's comments, I would say that there's also an element of equitability in open science, and that it does try to level the playing field between the ivory tower and where data are generated and collected in the field.

Joel Gurin: Thank you so much. Aaron and then Gretchen, let's talk about how this applies in the immediate real world of all this health information and all this contradictory climate information. Aaron, what would you advise as to how people can sort this out, and how people on this webinar, many of whom are in the science field themselves, can help explain it to folks.

Aaron Carroll: The one thing I do all the time is beg people to stop treating this as a knowledge dissemination problem. Everybody wants the single tweet or TikTok or something which is going to suddenly convince everyone else that they're right and other people are wrong. And they think that they're going to change their behavior by showing them one more study.

There was a great study done during the passage of the Affordable Care Act. You may remember death panels. It used to be the lie of the year. Well, they did a study where they gave people who were already predisposed to believe that death panels are real, corrective information showing them that death panels weren't real. That hardened their belief that death panels absolutely were real.

There was another study done, a randomized controlled trial with people who were likely to believe myths about the flu shot. And if you gave those people corrective information from the CDC about the safety of flu shots, they became less likely to immunize.

If you give people who don't trust you information, they become hardened against you. It not only doesn't work, it backfires. And yet this is how we keep responding to mistrust. One more study, one more fact. We even have a nice little phrase about it: "Follow the science." As if, you know, if we just give people the right info, they'll suddenly change their minds.

It backfires, and yet we're still trying to do this in a way that can be scalable and cheap and easy. And it's not. You build trust by listening, by having empathy, by having conversations. It cannot be done on social media. It can only be done like retail. It's going to take a huge amount of work and effort, but that's how it's done. And I worry too often that by looking for an easily cheap, scalable solution, we're making it harder. There is no easy way to do this.

Gretchen Goldman: To Aaron's point about using other tools, on the climate side we are seeing them spread climate disinformation, but we use the tool of just taking them to court about it. We sued the government over the Department of Energy report that was written by a few climate contrarians that we knew both contained bogus information on climate and also was done unlawfully, not following the Federal Advisory Committee Act. We won in court, they had to disclose lots of documents, they disbanded the committee, and their arguments on the science

were relegated to a footnote in their later actions because we had killed their ability to use it as an argument. So that was one small success story.

Joel Gurin: Thank you for reminding us that litigation is an option, and congratulations on that win. That's huge. Alan, we don't have much time for Q and A's, but do we have one question that we can tee up?

Alan Shark: One question that came up is, What can we do with our local partners? We've talked up to this point from the federal level. Every state has an environmental group, some better than others in terms of staffing and capability. Every group has a health operation. How are we leveraging this at this moment in time? Because these people are not necessarily going through the same thing that is being discussed here.

Gretchen Goldman: One thing I would recommend is if anyone is a credentialed scientist, if you have scientific training, you could [join our science network](#), which includes people around the country. We've seen 55 percent growth since the administration started, so there's a lot of efforts at that. It's 26,000 people. One thing that you get through that network is opportunities for local efforts. Often in these conversations it can be really helpful to have a local dimension when we're doing advocacy or commenting on a public rule. We're looking for people with certain expertise in certain places that have a certain angle that can be helpful for both getting the attention of people in decision-making power or in building that collective power locally. So that's one concrete thing to get involved in. Act locally.

Chris Marcum: We have the axiom that all politics are local. Just to go back to my top line comments, I'd like to modify that to say that all data are local. And I think that there's a really strong strategy in having the broader community amplify how federal data and state and local government data influence people's lives in non-trivial ways.

We have the 2030 census coming up. The very foundations of this democracy are in the robust and credible collection of data based on an actual enumeration of the population. That's how our representation is built. So I think to the extent that local organizations can get involved – first, they know and are aware that there are data that impact their lives. We have another project called [essentialdata.us](#) that amplifies stories of federal data. But many of those stories are local. They're down to the household individual impact, and engagement in that is going to be incredibly critical, I think, for the sustainability and future of this enterprise.

Maryam Zaringhalam: I was just going to put in a plug for public libraries. We all have them around us, and librarians are constantly fielding questions, concerns from community members. I feel like they have a really great pulse on what communities care about and what information they need. And so that's also an opportunity to go and understand what are the local concerns and needs of my community, and who do I have in my research network that can lend some voice or expertise to that through an event that you host in the library, and kind of give back. So not just thinking about what is it that we need from the public, but what does the public need from us? What are the questions that are top of mind for them, and help them sort of form a research agenda or some sort of advocacy agenda that we can support and lend our voices to.

Aaron Carroll: I think the only way this works is local. I mean, that's the only way you change people's minds. The idea that you can just reach across and change people's minds at a federal level is so strange to me, but that is where we seem to focus all of our time and effort. You're going to have the most influence in your community. As a pediatrician, I had the most influence in the office. Patients trusted me because I built that up over time, and by listening again, and knowing that I wasn't going to win on the first visit, but I could build up a relationship at the two-week, the one-month, the two-month, the four-month, the six... that's how you do it! And public health is improved locally, you have the most influence amongst your own community and friends groups. That's how it's done. It's harder, it takes more time, but that's where all the action is.

Joel Gurin: Thank you so much. We are right at time, but again, I want to thank you all for a phenomenal conversation. Many thanks also to folks who joined us online. This has been such an important conversation. I want to thank you all for being able to bridge from the science policy issues, which can be hard for people to get their heads around - I think you all explained them very clearly and bridged from that to why this matters in everybody's everyday life. You've all described while this is not an easy fix. It's a hard road ahead, but I at least am feeling hopeful having had this conversation. I hope you and those of you listening are as well. Alan, let me turn it to you to close us out.

Alan Shark: It was a fascinating panel. I wasn't sure if I was excited or depressed, and it was a little bit of both. I'm going to leave here hopeful. I think we need to have a national campaign: Keep politics - which is a dirty word to most of the public - keep politics out of science. If we all had that tagline, maybe we'd get some traction. But you all did a fantastic job.

Again, this is recorded. Please share this recording with others. The message here is important. There are things we can do. There are comments we can write. There's litigation we can be part of. There are organizations we can join. But we've got to work together. So thank you, Joel. Thank you, everyone, on behalf of the Academy. Have a great rest of your day.