

# RENEWABLE RESOURCES JOURNAL



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## Conference on Science's Journey 2021

Enlisting Citizen Support for Scientific Thinking  
Advancing Science Through Presidential Transitions  
A Restorative Agenda for Science in 2021

# Conference on Science's Journey 2021

*Presented by*

Renewable Natural Resources Foundation

## **Acknowledgements:**

On behalf of the RNRf Board of Directors and staff, thanks are extended to the people and organizations that contributed to the success of RNRf's 21st national conference. Members of the Conference Program Committee are listed below. Program Manager **Stephen Yaeger** worked with our committee and speakers, and provided necessary assistance to our attendees. He also drafted this excellent report using source materials. Finally, sincere appreciation goes to the speakers and attendees who made such an informative meeting possible.

**Robert D. Day**  
Executive Director

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Chair, **John Durrant**, RNRf Chairman, American Society of Civil Engineers; **Robert D. Day**, RNRf Executive Director; **Dresden Farrand**, RNRf Board Member, American Water Resources Association; **Sarah Gerould**, RNRf Board Member, Society of Environmental Toxicology and Chemistry; **Lu Gay Lanier**, RNRf Board Member, American Society of Landscape Architects Fund; **Andy Miller**, RNRf Board Member, American Meteorological Society; **Raj Pandya**, RNRf Board Member, American Geophysical Union; **Howard Rosen**, RNRf Board Member representing the public interest; **Barry Starke**, RNRf Board Member representing the public interest; **Kasey White**, RNRf Board Member, Geological Society of America

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# Introduction

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Science faces unprecedented times. We are in the midst of the COVID-19 pandemic and are grappling with a serious climate crisis. The role of science is more important now than ever but its future is clouded by uncertainty. What is science's path forward in 2021?

Directors of the Renewable Natural Resources Foundation recognized the critical relevance of this question and other key issues and called a Conference on Science's Journey 2021. The conference brought together a select group of professionals with experience in government, nonprofit and private

sectors. Attendees met virtually through Zoom Webinars on October 6, 2020.

Conference speakers and attendees explored science's dynamic role in public policy, how the scientific community can contribute to informed science policy during presidential transitions, and an agenda of restorative actions for science that should be taken in 2021.

This report is a synthesis of information and professional judgments presented over the course of the conference.

## Renewable Natural Resources Foundation

The Renewable Natural Resources Foundation (RNRF) is a nonprofit, public policy research organization. Its mission is to advance the application of science, engineering and design in decision-making, promote interdisciplinary collaboration, and educate policymakers and the public on managing and conserving renewable natural resources. Member organizations are:

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*Editorial Staff:* Robert D. Day, editor; Stephen Yaeger, assistant editor.

## Science's Essential Role in Our Democracy

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On Earth Day 2017, scientists and supporters of science in Washington, D.C. and across the world took to the streets in a series of marches centered around the essential role of scientific evidence in informing public policy. Called the March for Science, this was an unprecedented protest defending the idea of science, its value in society, and the importance of evidence in decision making. **Rush Holt**, who was CEO of the American Association for the Advancement of Science at the time of the march, reflected on the evolving sense of social responsibility in the scientific community and made a collective call to advocate on behalf of science-based thinking. Traditionally, scientists have not been demonstrators and activists. However, in the face of persistent attacks on the value of science in society, Holt said that these demonstrations are unstoppable.

What motivated people to take to the streets in support of science? While there may be no definitive answer to this question, the participants in the March for Science clearly aimed to demand respect, and to advocate for more funding for scientific research. At its heart, though, there was a deeper demand, for science to be applied more generally in policymaking and public decision making.

Holt defined science as a way of asking questions so they can be answered empirically and verifiably. It is a path toward more reliable knowledge. This is an essential ideal for policymakers to pursue. While this pursuit of reliable and objective knowledge is not the only important element of effective policymaking, it is foundational to the process. One should always begin with the best understanding of how things are and how they work. This principle applies not only to public officials, but to citizens in their approach to fulfilling their democratic duty.

Too often, our society and politics are rooted in opinion unmoored from evidence. Traditionally, science has been used to resolve differences of opinion through objective analysis. This is not always

an achievable goal, but it is often possible and it is always desirable.

This dynamic is evident in the foremost policy challenge in front of us right now: the COVID-19 pandemic. From stumbling delays at the beginning of the outbreak to continued problems with the equitable treatment of patients, the societal response has been severely lacking. Many essential leadership positions governing the pandemic response were filled by people without relevant experience. At every level of the response one of the most serious underlying problems was the pervasion of wishful thinking, rather than objective evaluation of the evidence. This is not an isolated phenomenon, Holt said. It is a tendency that resides in ourselves, in the body politic.

### Enlightenment Ideals

People do not always think scientifically. We make decisions based on very personal factors, prejudices, and biases, and tribal and special influences often dominate. This is not a new phenomenon. In fact, it was addressed by Alexander Hamilton toward the beginning of the first of the Federalist Papers in 1787, when he asked “whether societies of men are really capable or not of establishing good government by reflection and choice.” Can public decisions be made without the influences of bigotry, passions, special interests, and corruption? In the rest of the Federalist Papers, Hamilton, James Madison, and John Jay make the case for why the system of government outlined in the Constitution would enable governance based on reflection and choice, in spite of human instincts and prejudices.

Holt cited an article written by Deborah Pearlstein, published in *The Atlantic* in September of 2020, in which she points to this “framers’ faith” that knowledge and reason can prevail in governance. We have 500 years of experience confirming that scientific thinking and evidence is the most reliable source of objective knowledge. In the United States, we have

230 years to give us reason to believe that those Enlightenment-era ideals valuing evidence-based decision making can be applied to good government.

The framers of the Constitution sought to increase the odds that knowledge and reason would overcome arbitrariness and corruption in policymaking. This ideal is possible to achieve, but not always, and not easily. The framers put certain structures in place to facilitate it, including granting legislators good salaries and reasonably long terms of service so that they could develop expertise and by employing specialized committees in the government. Later, more structures were added to further protect these Enlightenment ideals, including professional civil service, expert executive branch agencies, and in 1946, the Administrative Procedures Act. Due process requirements and legal norms applied in the judiciary also help keep arbitrariness and corruption at bay. Successful science-based legislation like the Clean Air Act and Clean Water Act help demonstrate that, despite challenges to evidence-based decision making throughout our nation's history, that faith in these Enlightenment ideals is not misplaced.

### Retreat from Evidence-Based Decision Making

Since the 1970s, there has been a sustained retreat not only from the practice of good government but from the capacity to restore it. The practice of replacing experts with unqualified political appointees, though not new, has become more common over this period. Presidential power has been concentrated without congressional counterbalance. In Congress now, many of the Enlightenment-motivated provisions to promote objectivity have been lost: there are fewer congressional aides, there are fewer staffed caucuses, and the Office of Technology Assessment was closed in 1995.

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*When democracy becomes a contest of opinions with no basis in evidence, when all opinions are considered equal, when each is asserted as strongly and sometimes as deceptively as possible, democracy cannot survive.*

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There is evidence over decades and centuries in America that scientific thinking does work. Holt said that we must look at the deeper problems of why leaders are retreating from the Enlightenment ideals of our government, and we must ask how we can restore those principles. However, we should continue to remind ourselves that good policymaking does not require scientific evidence alone. It also requires ethics and values, history and tradition, and aesthetics and humane considerations. Scientific evidence is the foundation of policymaking upon which each of these factors builds. Policies, laws, and regulations should be based, fundamentally, on our best understanding of reality. Science is not a collection of facts, or a directory of experts, but an evolving means of approaching reliable knowledge. It can and should be the arbiter of resolving differences of opinion using the best estimate of how things actually are, and how they actually work.

The high stakes of evidence-based policymaking have been tragically illustrated by the COVID-19 pandemic. For decades, scientific experts have been writing alarming articles about the devastation likely from emerging diseases and the need for public health preparations. Despite this, America was not prepared for the pandemic. In both the short and long term, policymakers failed to provide for adequate testing, medical equipment, and trained personnel. While government officials are partially at fault for this, the problem is deeper in our society than just the upper echelon of political power.

### An Informed, Engaged Public

According to Holt, the most important lesson to be learned for science policy from this pandemic is the

following: a well-funded cadre of scientific researchers is no substitute for an informed, engaged public. This lesson extends past the pandemic, to all policymaking. In recent decades, funded research has thrived but the public capacity to think with comprehension on scientific evidence has not grown with it.

It is not the policy experts who most need science. It is the policymaking public. All policymakers derive not only their power but also their motivation from the citizens. The success of any policy depends on the engagement of the public. They must be able to judge the credibility of scientific claims by asking if the claims are based on openly vetted evidence. It has been shown in survey after survey that, by and large, the public trusts scientists. Scientists are held in high regard, and yet, as this pandemic has shown, members of the public often do not feel the need to listen to them. Trust does not always translate to a respect for informed scientific conclusions. To many people, evidence-based opinions are as valid as any other.

Scientists are often perceived as detached from society, and as a result, their techniques seem inaccessible. If the public thinks that evidence-based thinking is reserved solely for the experts in their ivory towers, it is easy to see how people can substitute rumors and baseless claims in place of evidence. Scientists must help counter this impression that science is for scientists alone. They need to find ways to engage the public—not just to talk to them, certainly not to talk down to them but to find ways to communicate their scientific work in a way that is clear and usable by policymakers and everyday citizens.

This goes beyond testifying before congressional committees, giving public lectures, writing popular articles or creating citizen science projects, although these are all important activities which should be encouraged. Scientists, fundamentally, need to communicate that the success of science comes from evidence-based thinking. Despite the disconnectedness often perceived between the scientific community and society, evidence and evidence-based thinking are accessible to all. Scientific literacy, or being able to distinguish evidence that has been generally verified by scientific consensus, is essential to a well-informed population, and therefore, to democracy.

A democratic republic requires citizens who desire an objective understanding of the actual conditions of the world. With this basis of objectivity, they can achieve a democratic balance, bringing forward their values and visions. However, without a common understanding of the actual conditions, citizens' hopes and desires cannot be expressed and realized rationally.

Science is the process of empirical observation of these actual conditions. Therefore, whenever science is not the starting point for policymaking, democracy is at risk. When democracy becomes a contest of opinions with no basis in evidence, when all opinions are considered equal, when each is asserted as strongly and sometimes as deceptively as possible, democracy cannot survive.

Holt concluded his presentation with a call to the scientific community, and a call to the public. Scientists who see themselves as public-spirited have traditionally thought that they have done their job when they have communicated information to the public. Communicating science in a clear and engaging way is important but it is not the only responsibility that public-facing scientists have. Scientists must use their high regard in society to help the public understand that the success of science is rooted in scientific thinking, and that scientific thinking is accessible to everyone. The public can use this objective form of thinking to assess evidence that is presented to them and execute their civic duties in an informed fashion.

In Holt's words, "Anything short of that will put our democracy at risk. Will this work? I don't know, but we better try."

# The Scientific Community's Role in Presidential Transitions

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The time between a presidential election and inauguration can be pivotal to the agenda and success of a new presidency. These presidential transitions are an important opportunity for the scientific community to advocate for policies and approaches that they consider important and make their expertise available to the new political leadership of the nation. Key lessons can be learned from past transitions to help the scientific community take full advantage of the opportunities in the transition process. **Kei Koizumi**, who worked on the Obama-Biden transition team in 2008-2009 and in the White House Office of Science and Technology Policy for the duration of the Obama administration, spoke about the transition process and his experiences. He presented three key messages to guide the involvement of the scientific community in a potential upcoming presidential transition.

## Introduction

Koizumi started his presentation by noting that if President Trump wins re-election, little will change and much of his advice here will be irrelevant. Having worked at OSTP during 2012-2013, in between the two terms of the Obama administration, he described that time as not significantly different from any other during the presidency despite some changes in leadership. However, if former Vice President Joe Biden wins the 2020 election, new opportunities for the engagement of the scientific community in the policymaking process will open.

There are certain assumptions that generally apply during presidential transitions. However, they may not apply in 2020 given the extenuating circumstances surrounding the COVID-19 pandemic. One assumption is that the election will be decided relatively quickly. While this is usually the case, the high volume of mail-in ballots in the 2020 election may cause delays in calling the election in certain key electoral-college states. While these uncertainties, both about the outcome of the election and the timeline of declaring a winner, are important to take into account, it is also

important to prepare to take advantage of the opportunities of a potential presidential transition.

## Transition Teams

If the election is decided in favor of Joe Biden, regardless of when it is called, the transition will begin immediately. Once the results of the election are confirmed, members of the transition team will be made public online. Transition teams have three main categories of members: personnel teams, who are in charge of filling the new administration with appointees and other administrative officials; agency landing teams, who learn about how agencies operate, issues they are addressing, and decisions they will have to make; and policy teams, who learn about cross-agency policy issues and plan policy actions for the new administration to take after inauguration.

Soon after the election is called, agency landing teams typically are given a set of unoccupied offices near those of the incumbent agency staff. While Koizumi acknowledged the likelihood that this role would be conducted virtually in 2020-2021 due to the pandemic, the responsibility of those teams remains the same. Their job is to learn about how the agencies and their programs operate and issues they are addressing. To help that process, some agencies are already preparing transition memoranda for the possibility of a new administration. Preparation of memoranda will accelerate if Biden wins the election.

## Turning Campaign Promises into Concrete Action

Many agency landing teams will be open to input and ideas from outside the agency. This is the first opportunity for the scientific community to get involved in the transition process, and is Koizumi's first key takeaway. Koizumi recommends that, prior to the election, members of the scientific community who are interested in providing guidance should familiarize themselves with the Biden platform. If Biden wins, this platform will be the outline of guiding principles for the transition process. Fundamentally, the goal of any



presidential transition is to turn campaign promises into concrete actions. Providing input or expertise that will assist or guide them in doing so is a good opportunity for the scientific community to involve itself in the transition process.

The Biden campaign platform can be found on their campaign website. While Koizumi noted that there is not a specific section of the platform outlining a vision for science, science is an intrinsic part of many of the campaign's proposals. These include sections of the platform covering the COVID-19 pandemic and public health, as well as climate change and environmental justice, among other issues. Agency landing teams want to use their agencies to fulfill the promises that have been articulated by the campaign. If an organization has a history of working with an agency, it is especially well positioned to bring in valuable ideas on how to make the policy platform of the campaign a reality.

### Preparation Is Key

There also are opportunities for the scientific community to make its voice heard on issues and ideas not expressed in the platform. These are the responsibility of the policy team. In normal times, policy teams would occupy a central, unoccupied federal office space and learn about cross-agency policy issues. A large part of their role is to prepare policy actions for the new administration to take within the first 100 days or so of assuming office. While agency landing teams are primarily meeting with agency staff, policy teams are primarily meeting with outside groups. In Koizumi's experience working on a policy transition team in 2008, as soon as his name was made public online, he began receiving white papers, action agendas, and policy emails from interested outside groups. This is an important opportunity for the scientific community to provide input into how the new administration should implement its campaign agenda.

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*Organizations that want to make an impact on the transition process should prepare their white papers, policy memos, and reports and be ready to share them with the transition team as soon as they are announced.*

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Koizumi's second key takeaway is about maximizing this opportunity: organizations that want to make an impact on the transition process should prepare their white papers, policy memos, and reports and be ready to share them with the transition team as soon as they are announced. It is important for scientific organizations to request meetings to discuss ideas for how science should play an essential role in governance under the new administration. This time between the election and inauguration is essential for making sure that science is part of the governing agenda for the new administration.

### The Role of Congress

An incoming administration and Congress will normally collaborate on preparing a policy agenda but in 2020-2021, there is potential for heavier collaboration than usual, especially related to science issues. In 2008, there was an unusually high level of coordination between Congress, federal agencies, and the incoming transition team due to the Great Recession. The crisis was so deep and urgent that the Obama team essentially began governing even before inauguration. As a member of the policy transition team, Koizumi was working with congressional and agency staff to help shape the Recovery Act. This act was introduced before President Obama's inauguration, and was signed in February of 2009. Discussions over what it would contain had begun long before Obama took office.

In 2020, also a year of financial crisis in addition to a global pandemic, similar processes are likely to happen. In the case of a Biden victory, the transition team will likely begin working with Congress on economic recovery

and pandemic response legislation prior to his inauguration. This will be another opportunity for the scientific community to get involved in the policymaking process, not only with the presidential transition but also with Congress.

### Funding Is Necessary

Agencies are already working internally on crafting the FY22 budget. However, if Biden wins the election, all that work will stop, only to resume after inauguration when the new administration has to build its first budget within the first 100 days of the presidency. This new FY22 budget will be released around May of 2021. The first budget of a new presidency is an opportunity to ask for the resources to implement a new presidential agenda. Even before then, under the unique circumstances of the pandemic, it is possible that there will be opportunities for another stimulus bill to be passed.

To enact a policy agenda, funding is necessary, and that funding will have to be requested through the budget process. The scientific community should keep this in mind when communicating with the new administration about how to implement its platform. This is the third key takeaway that Koizumi noted: be ready to talk about both regular and emergency appropriations in 2021, and be ready to talk about the FY2022 budget. That budget will be essential to ensuring that investments are made in science to carry out the goals of the new administration and the scientific community. Even issues that are not expressly science-centric often have scientific components. It is important that the scientific community makes the new administration aware of the opportunities to utilize science in implementing its platform, and the price of doing so.

### New Incoming Leadership

As soon as the election is decided, if Biden wins, the transition will begin. To prepare for the incoming administration, agencies in the executive branch will begin emptying out. The figurative “top floor” of political appointees at most agencies will be empty by inauguration, although this is not as true for some science agencies such as the NIH, which has fewer political appointees.

Following inauguration, the “top floor” will begin filling up again and new leadership will begin issuing new orders, announcements, and directions. Traditionally, most cabinet secretaries are confirmed by the Senate on inauguration day but many lower-level appointments, even those that do not require Senate confirmation, will not be filled until much later. This means that there will likely be a noticeable pause in new policies and announcements after inauguration, although research programs will continue.

The transition team disbands at inauguration but typically, many of its members go on to work in the administration. This should be another consideration during the transition period: if you are briefing somebody on the agency landing team or policy team, you may be briefing someone who will work for the new administration. This is another reason to speak with the transition team early. You may continue to work with them in the months and years to come.

### Conclusion

Koizumi concluded his presentation by reiterating his three key takeaway messages for the scientific community to make the most of their involvement in a potential presidential transition:

- Check the campaign platform to see how they intend to act on the issues important to your organization. This is the vision that the campaign intends to enact if they are elected, and the potential for the scientific community to provide valuable advice to assist them is an important opportunity.
- Prepare white papers, policy memos, reports, statements, etc. and be ready to present those materials to the transition team as soon as they are announced. This is the first opportunity to communicate your ideas to a new administration.
- Be prepared to discuss the cost of the ideas and policies you are proposing, and be aware of the appropriations and federal budget situations as well as what the tradeoffs of your proposals might be.

The scientific community has an opportunity to demonstrate how science can be a part of the solutions to many of the important issues facing us as a society. Science has to be a part of policymaking, especially for an effective economic recovery and pandemic response, as well as crafting solutions to climate change and other environmental issues. There are many opportunities to restore the role of scientific advice in the government. To take advantage of them, the scientific community must be active in ensuring that the new congress and the presidential administration, old or new, understand how important science is to the health of our democracy.

# Scientific Priorities Moving Forward

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Science plays an integral role in public policy. For decades, political forces have sought to interfere with government science in order to meet political goals, a trend that has become especially pronounced under the current presidential administration. **Gretchen Goldman**, research director for the Center for Science and Democracy at the Union of Concerned Scientists (UCS), described the current standing of science in federal policy, lessons learned from the past few years, and how we can move forward to promote evidence-based federal policymaking. She also summarized UCS's recent work which recommends priorities for what a president (either incumbent or newly elected) can do to strengthen science's role in policy decisions.

## Introduction

Before 2016, it was rare for scientists to engage in activism on behalf of their profession. When Goldman first heard about a rally of scientists that was planned to happen at the annual meeting of the American Geophysical Union (AGU) that year, she was surprised. Scientists marching in their lab coats, demonstrating their support for science in public policymaking, was unprecedented. The demonstration at the AGU meeting was part of a new trend. Scientists were vocally standing up for policymaking based in scientific evidence. To Goldman, this signified that we were entering a new era of science activism.

In early 2017, Goldman released an [article](#) she co-wrote in *Science* magazine titled "Ensuring scientific integrity in the age of Trump." The article covered the steps that supporters of science can take to protect science's role in federal public policy. The authors participated in a panel at the annual meeting of the American Association for the Advancement of Science (AAAS) to discuss the article. The panel had overwhelming attendance. To Goldman, the outpouring of support for the article showed that the scientific community wanted to discuss steps they could take to protect the federal government enterprise.

## Characterizing Science's Challenges

This growing concern in the scientific community was not unfounded. In 2017, the federal government began reducing its reliance on scientific advice for decision making. There are hundreds of scientific advisory committees across the government which exist to advise policymakers on everything from drug approvals to environmental pollution. Across all agencies, these committees began meeting less often in 2017. This was one of the first indicators that the role of science in public policymaking was beginning to diminish.

As time went on, other trends began to emerge, also indicating a diminishing role of science. Vacancies in many science leadership positions were left unfilled for far longer than usual. This was also a trend across the entire federal government, and differed from the previous two administrations, which filled vacancies more quickly.

Scientific integrity has been attacked consistently and attempts have been made across the government to inhibit the conduct of science. Notable changes include the following:

- Conference attendance was often restricted
- Data collection and data accessibility were restricted
- Grants and science funding were politicized
- Studies were halted, edited, or suppressed for political reasons
- Scientific findings were censored
- And several other anti-science rules, regulations, and orders were implemented

This attack on science is serious and transcends political disagreements. Administrations have the right to choose different policy priorities, and that right should be respected. These measures, however, prevent decision makers from having access to

relevant and accurate scientific findings to inform policies. Across all agencies, UCS has counted more than 160 of these attacks on science since 2017.

This is not a totally new phenomenon. Similar actions have been taken by previous administrations from both political parties. The politicization of science is a persistent issue because science is very powerful and policymakers want it on their side when making policy decisions. While this indicates the importance of protecting scientific integrity, it also makes science very vulnerable to interference. For this reason, UCS wanted to see if the attacks on science they were documenting in the current administration were truly unprecedented or if they were only being documented now due to a higher degree of scrutiny.

UCS published a paper in 2018 titled “**Scientific Integrity in Federal Policymaking Under Past and Present Administrations**” that sought to answer this question, looking back on seven decades of presidential administrations. They found that the Trump administration’s efforts to suppress science were a continuation but also an escalation of the patterns that had built up over previous decades. The following quote from the report summarizes its findings: “While many of the Trump administration’s actions have origins in the work of prior administrations, others fit with the ‘unprecedented’ narrative, including the uniquely open disregard for the conclusions of its own scientists.”

Periodically, UCS surveys federal scientists across 16 agencies. The **most recent survey**, conducted in 2018, includes a wealth of data about science and scientists across the government. Goldman drew attention to one finding in particular: due to staff departures, retirements, and hiring freezes, many respondents noticed workforce reductions in recent years. This presents a unique challenge for future administrations and presidential transitions, since there may be more vacancies to fill and fewer experts available than is typically the case at federal agencies.

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### **Progress on Federal Scientific Integrity**

By tracking attacks on science in the federal government, conducting policy analyses, and surveying government scientists, UCS has been able to identify many factors that contribute to losses in scientific integrity. Goldman listed the following:

- Lack of clear and consistent policies
- An unsupportive or hostile work environment
- Ineffective or absent leadership
- Lack of transparency
- Lack of accountability
- Undue influence of political, financial, or ideological forces

UCS’s 2018 survey of federal government scientists identified a positive trend as well: employees overwhelmingly felt that their agency adhered to its scientific integrity policy. This was a notable trend across agencies, even in contexts where there was more political interference and more challenges were reported. Across the government, scientific integrity policies are in place and functioning properly. The question we need to be asking, then, is what else is needed and where else we need to be focusing to ensure that science can inform decisions and agencies can fully meet their science-based missions.

## Priorities for 2021: Strengthening Science in Decision Making

Goldman then discussed the priorities for repairing science's role in federal decision making in 2021. She highlighted recent UCS reports that address this issue, beginning with "[Presidential Recommendations for 2020](#)." This report describes the actions that a presidential administration could take to improve the role of science in policy decisions in the immediate future. Priorities defined in the report include:

- Promoting science-based decision making
- Strengthening scientific integrity
- Ensuring transparency to ensure that the public can understand where the line between science and policy is, who is making that decision, and what is influencing it
- Addressing conflicts of interest, especially in instances where decisions should be made based on objective science or the public interest
- Safeguarding government scientists so that they are free to do their work within the government and communicate their science to the media and the public, knowing that their supervisors will stand behind them even in politically contentious situations
- Fostering public participation

These are overarching, high-level actions that a presidential administration could take. Goldman also described more specific recommendations that UCS made in a subsequent report, titled "[Strengthening Scientific Integrity at Federal Agencies](#)." This report examines what leaders of specific agencies can do around certain topics. Some of these actions parallel their recommendations for presidential actions, but others are specific to the agency level.

Alongside that report, UCS released fact sheets on topics including advancing scientific integrity in an agency context, promoting public participation, addressing conflicts of interest, and prioritizing justice and equity. Goldman emphasized the importance of justice and equity because a lot of the science-based missions of agencies include serving the public but the public has not equally benefitted from our government's use (and misuse) of science. The actions of these agencies have often led to harm in communities of color. In discussions of how these science agencies can improve, addressing these inequalities must be a priority. The UCS [fact sheet on supporting equity and environmental justice](#) gives recommendations on what an administration could do to address some of the inequalities that have been created by agency actions in the past.

UCS has also produced fact sheets for individual agencies, including the Office of Science and Technology Policy, Center for Disease Control, Environmental Protection Agency, and Department of the Interior. The goal of these fact sheets was to give recommendations to agencies which can take a lot of individual actions to improve the role of science. These include high-level recommendations about science and public policy, as well as specific recommendations on rules and policies that agencies may want to prioritize, repeal, or approach differently. Goldman noted that these fact sheets could be helpful to an agency landing team or anyone else looking for specific recommendations on agency policies to promote science. Links to these fact sheets and other reports can be found on UCS's [website](#).

The last report Goldman highlighted is UCS's "[Scientific Integrity Roadmap](#)," which recommends actions for agencies to bolster their scientific integrity policies. Specific recommendations from that report include:

- Establish and empower scientific integrity officials
- Train all workers on rights and responsibilities
- Ensure open and accurate communication by scientists and other agency leaders through media and social media

- Enforce clearance policies that promote scientific independence
- Prevent interference in data collection and research funding, and otherwise in decision making
- Provide safe procedures to report and investigate violations

The report gives specific agency examples for each of these, highlighting agencies that have been able to implement each recommendation effectively.

Soon, UCS will also be releasing products about rebuilding agency capacity. These will address previous findings about workforce reductions in science agencies, recommending steps toward re-establishing a high degree of expertise. This is another important priority, since agencies need expertise and staff to be effective at meeting their missions.

### Conclusion

Years after she was surprised at the willingness of scientists to demonstrate on behalf of their profession outside of the AGU meeting, Goldman helped organize a panel of scientists who are experts in air pollution and its health effects. This group of scientists had been advisors to the EPA on these issues before they were dismissed by the administration in 2018. Goldman helped bring the former panel members together and they decided to meet anyway. They met for two days and produced hundreds of pages of scientific advice, which they provided to the EPA administrator. To Goldman, this was a reminder that scientists are not only willing to stand at a rally and hold a sign but also to do much more to ensure that science is informing public policy. Regardless of political leadership, scientists are ready to contribute to and advance the role that science plays in our policy decisions.

To view the PowerPoint associated with this presentation, click [here](#).

# Appendix: Conference Program

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**Tuesday, October 6, 2020**

1:00 pm - 1:05 pm

## **Welcome and Opening Remarks**

### **Robert Day**

Executive Director

Renewable Natural Resources Foundation

1:05 pm - 1:35 pm

## **Science's Essential Role in Our Democracy**

Science is a way of asking questions so that they can be answered empirically and verifiably. It is a way of understanding how things are and how they work. This way of thinking forms the foundation of policymaking in a functioning democracy. It is not the only ingredient, but it is an essential one. Too often, our politics are detached from scientific thinking. The scientific community has recently resisted the weakening of science in government decision making. However, scientists must do more than advocate for science. They must promote scientific thinking among the nation's citizens. Our speaker reflected on the evolving sense of social responsibility in the scientific community and made a collective call to advocate on behalf of science-based thinking.

### **Rush Holt**

Former CEO (2015 - 2019)

American Association for the Advancement of Science

Washington, D.C.

1:35 pm - 1:55 pm

## **Questions and Discussion**

1:55 pm - 2:25 pm

## **The Scientific Community's Role in Presidential Transitions**

Science is a crucial tool for America's political leadership. How science is used differs from administration to administration but the willingness of the scientific community to engage with policymakers has always been steadfast. The scientific community can play an especially important role in times of political transition, advising and advocating to newly elected and incumbent members of congress and new administrations in the White House. This advisory role can help lay the foundation for effective policymaking that makes full use of accurate scientific information. The transition process is already underway. Our speaker provided a historical perspective on how the scientific community typically responds during transitions and give insights about how the transition process works. He has three important take-away messages!

### **Kei Koizumi**

Former Senior Advisor for Science Policy

American Association for the Advancement of Science

Shanghai, China



2:25 pm - 2:45 pm

### **Questions and Discussion**

2:45 pm - 3:15 pm

### **Scientific Priorities Moving Forward**

Scientific priorities for 2021 will require especially critical analysis. Many environmental regulations and science research protections have been adversely altered and will need to be restored. Primary issues include: promoting science-based decision making; strengthening scientific integrity; enforcing transparency in decision-making; addressing conflicts of interest; safeguarding government scientists; fostering public participation in decision-making; and protecting democratic processes. Our speaker examined each of these issues and provided a blueprint for moving forward.

### **Gretchen Goldman**

Research Director, Center for Science and Democracy  
Union of Concerned Scientists  
Washington, D.C.

### **PowerPoint Slides**

3:15 pm - 3:35 pm

### **Questions and Discussion**

3:35 pm - 3:40 pm

### **Closing Remarks**

### **Robert Day**

Executive Director  
Renewable Natural Resources Foundation

## Renewable Natural Resources Foundation

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