Scientists are used to debating with one another about the finer points of new research. But increasingly, they find themselves battling their televisions and computer screens, which transmit ever-more-heated rhetoric from politicians, pundits, and other public figures who misinterpret, misrepresent, and malign scientific results.

This rising tide of spin is the most visible outcome of the growing and troubling disconnect between scientists and much of the rest of society.

That disconnect has its roots in the growing power of ideological extremes across the US political system. Congress is as polarized now as it was in the days of Reconstruction, and even elected officials at the state and local levels have come down with hyperpartisan fever. Our fractured media landscape makes it easier for politicians to speak directly to their most fervent supporters while ignoring the great majority of Americans, who want sound decision making and compromise rather than rancor.

It’s easy to bemoan this sorry state of affairs. Many of us are content to pretend this is somebody else’s problem. But that is a mistake. If scientists and conscientious citizens disengage, these problems will only get worse.

**Fixing the problem**

This summer, the Union of Concerned Scientists established a new Center for Science and Democracy to bring together people from all walks of life with the goal of advancing the role of science and civil debate in the American political experiment. The new center will help scientists better engage in the democratic process by facilitating interactions with the media, the public,
and decision makers. And it will give citizens the knowledge and tools they need to hold those politicians and pundits who attack or misuse science accountable.

In the 1960s and ’70s, there was broad consensus that good policy was based on well-established facts. On a spectrum of issues spanning military technology, disease eradication, and emerging environmental threats, there was an understanding that science was a critical tool of informed policymaking.

It is not sufficient for scientists to simply do research and publish their results. They must also understand how the public weighs technical issues and what role science should play in public-policy decisions.

But things have changed. For instance, when one of us (Andrew Rosenberg) was working in New England to preserve native fish stocks, it was clear to scientists that rampant overfishing would eventually decimate fish populations. But opponents of fishery regulations tried to delay implementation of new rules by downplaying that scientific consensus. Thankfully, many fish stocks have been preserved, but such debates continue today along America’s coasts and beyond. When it comes to legislative action on reducing climate-altering emissions of greenhouse gases, the attacks on science have been even more pernicious. And historically, government officials have often found it politically expedient to suppress scientific information in order to weaken new rules for power plants and other polluters—downplaying, for example, data on the public-health consequences of mercury contamination from smokestacks.

Addressing such problems requires understanding the tensions that exist where scientific knowledge and private interests intersect.

The process for developing scientific information—based on data, peer review, quantified uncertainty, and ongoing testing and revision—is robust and established. Science is indispensable for generating knowledge, identifying new societal problems, and outlining alternative solutions. In particular, scientists have a responsibility to raise the alarm when their findings indicate that people or natural resources are in danger. But science alone can never dictate policy on any level. Those choices are necessarily informed by values.

For example, one overweight smoker might opt for an annual CT scan of the lung because, to him, the possible benefit of early detection of a cancer outweighs the risks of false positives, unnecessary procedures, and radiation exposure; another might reject the annual scan because she has a higher tolerance for the risk of finding a cancer too late for a cure. Similarly, a chemical company may decide to stop using liquid chlorine in their production process, and replace it with a less toxic but more costly alternative, because they are concerned about the risk of an accident or more severe government regulations, while another company might assume the risk of deferring that change until a cheaper alternative can be developed. And a town, state, or country may attempt to protect itself from rising sea levels, while another decides it cannot afford the costs of trying to protect land and residents from oceanic incursions.

In each case, every stakeholder should want the best information possible: the efficacy and safety of the CT scans, the risks inherent in the toxic cleaner, and the most accurate sea-level rise projections.
Speaking out

On the level of public policymaking, it is not sufficient for scientists to simply do research and publish their results. They must also understand how the public weighs technical issues and what role science should play in public-policy decisions. Scientists must also defend their work and their colleagues when they come under unfair attack from ideologues, and when their findings are mischaracterized or manipulated.

Using science as a political football is a dangerous game. So much of our future prosperity is tied to our ability to develop new technologies, to anticipate and respond to public-health threats, and to prepare for increasingly rapid and disruptive changes to our environment. Wandering further down a path defined by ideological fervor, rather than pragmatic decision making, can only dim the benefits of enlightened democratic governance.

We must remember that at their root, science and democracy share the same values. Democratic societies are founded on open debate, free flow of information, mutual respect, and the critical role of inquiry and evidence. These values are embedded in the Declaration of Independence and undergird the checks and balances enshrined in the US Constitution. They are also fundamental to the scientific method.

Past successes in addressing science-based problems prove that a renaissance of rational policymaking is both possible and desirable. From protecting the ozone layer to curbing deadly disease and conserving our environment, science has provided the tools to build successful public policy.

Policymakers and members of the public still need access to the best scientific information on today’s pressing issues: natural-gas “fracking,” antibiotic-resistant bacteria, nuclear-waste storage, drinking-water safety, wildlife and habitat conservation, sustainable sources of energy, and climate change, to name but a few. There is an enormous amount of scientific information available on all of these issues and many policy options for addressing them.

The Union of Concerned Scientists has long worked to advance the role of science in the democratic process. In addition to bridging the gap between science and democracy, our new Center will also work to help scientists break out of the ivory tower and work more closely with the public. While scientists enjoy the public’s broad trust, they must work to deepen their interaction with fellow citizens through two-way dialogues. In short, scientists must become better listeners.

This is no small task. We invite members of the scientific community and citizens who appreciate the important role science plays in our lives to join us in this endeavor. Over the next year, we will be hosting forums, engaging policymakers, and working with social and natural scientists, business executives, political leaders, and the public to find new directions for elevating the role science plays in our democracy.

Our country and our planet deserve the best we have to offer.

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