



After the Fact | From Lab to Life: Trust in Science

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TRANSCRIPT

Dan LeDuc, host, The Pew Charitable Trusts: Welcome to “After the Fact” from The Pew Charitable Trusts. I’m Dan LeDuc. And today, I’m joined by my colleague Emily Chow, who is lead producer on the show. Emily, how are you doing?

Emily Chow, senior producer, The Pew Charitable Trusts: I’m doing well, Dan! It’s great to be on the other side of the mic this time.

Dan LeDuc: Now you know the terror I feel!

Emily Chow: Right!

Dan LeDuc: So, we are starting a new season of the podcast, and we’re taking a look at science. So, let’s talk about how we picked this topic.

Emily Chow: Yeah, I’m really excited about this season. We’ve seen a lot in the news lately about some really fascinating scientific breakthroughs. And previously on the podcast, we did a whole series about scientists at work, following them in their labs, and really looking at the innovative research and the impact on the broader world. So, this season, we really wanted to dive in a bit deeper.

Dan LeDuc: Well, you know, for me, this really emphasizes the importance of scientific research. You know, the COVID-19 vaccines wouldn’t have even been possible without investment in early biomedical science.

Emily Chow: That’s true. And Pew works with a lot of those types of scientists and also conservationists that really can help protect our planet as well as human health.

Dan LeDuc: So, we always do a data point on this show. What’s the data point for this episode?



Emily Chow: 73%. That's the number of U.S. adults that have a great deal or fair amount of confidence in scientists to act in the public's best interests. That's from the Pew Research Center.

Dan LeDuc: Well, then we know it's accurate.

Emily Chow: Absolutely.

Dan LeDuc: So, confidence is still fairly high, but it used to be basically unquestioned.

Emily Chow: That's right. And we spoke with Alec Tyson from the Pew Research Center. He's been on the podcast before, and he is the associate director of research. It was really interesting to hear from him about the evolving views and attitudes of the U.S. public toward science today.

Dan LeDuc: He's a great place to start. Thanks, Emily.

Alec Tyson, associate director of research, Pew Research Center: When you think about science and how the public engages with scientific information, we're talking about things like your personal health, medical decisions, nutrition, what you eat, and even how you make up your mind or come to view the world around really big issues about climate change. Or maybe even your nascent attitudes about a topic as big as artificial intelligence.

Dan LeDuc: At the Center, you've closely followed what the American public thinks about science now for a while. What's the data saying about Americans' attitudes toward science?

Alec Tyson: People care deeply about so many scientific issues, whether it's making a choice or an attitude about vaccines, whether that's childhood vaccines or a COVID-19 vaccine. Thinking about their natural world, attitudes about energy, environment, or climate change. We design questions to tackle topics, understand how people are experiencing science in their own lives.

If you zoom out at a very high level, the public holds science in really high esteem in terms of the impact it's had on society, a positive impact on society. But you look across some examples, and views differ.

One that's on my mind a lot right now is artificial intelligence. The public brings a lot of ambivalence or even caution to this big topic.



Dan LeDuc: Well, since we know so little about it, I guess, in some ways, that's understandable.

Well, what about Americans' trust in science? What's the data telling us about that?

Alec Tyson: Overall levels of trust are pretty high: 70% or more say they have confidence in scientists to act in the public's best interest. That's far higher than the levels of trust we see in other prominent groups and institutions like elected officials, journalists, or even business leaders.

Dan LeDuc: That's impressive. That puts them up pretty high compared to almost everybody else.

Alec Tyson: It really does. It's a great relative position of trust to be operating from. At the same time, it's also true that the reputation of science or scientists took a bit of a hit in the wake of the COVID pandemic. The public really had some questions or concerns around public health information during the pandemic.

And it's an inflection point. There's been a little bit of a dip in trust or confidence. It's still relatively high, but what happens from here is really critical.

Dan LeDuc: What are some of the things that threaten that trust?

Alec Tyson: From where I sit, there are at least two big ones when it comes to challenges towards trust in science or scientists. The first is information or even misinformation. It's quite a task to make sense of scientific information, forming your opinions on any of these issues, right? So that's a real challenge for the scientific community more broadly.

The second one I see is political polarization. This trend where we're more divided or more partisan in so many aspects of our life, including on issues. The challenge for science or scientists is to remain a place, a trusted source, where people from across the political spectrum can come to for trusted information.

Emily Chow: It was really interesting to hear Alec talk about the different challenges that the scientific community is facing due to political polarization. And even though trust in science overall is still pretty high, it really shows the impact that it's having on our health, our planet, and our future.



Dan LeDuc: Well, you know, speaking about the planet, we also are going to talk to our Pew colleague Becky Goldberg. She directs Pew’s environmental science work. And she said polarization is affecting her work too.

Rebecca Goldberg, director, environmental research and science, The Pew Charitable Trusts:

One of the biggest challenges that is affecting science is the politicization of science that somehow certain sorts of scientific conclusions are regarded as partisan when they are not.

So, things like whether climate change is occurring, whether certain sorts of health care advances should be believed. You know—vaccines are the obvious case—those really aren’t partisan things. When it comes to climate change, it’s occurring. We can have a partisan debate about what we do about it; that is totally fair game. But it really saddens me when the science itself is questioned.

Alec Tyson: Part of what we saw in our COVID-19 data was the importance of communication. And it’s an easy thing to perhaps overlook at times, but clear communication, transparency, saying what you know, how you know it, what you don’t know, and what you’re doing to learn more about it. These are some core principles that in our data seem to align with fostering trust.

Dan LeDuc: Well, that was Alec Tyson again. And he told us more about how scientific research can actually build common ground, rather than divide us.

Alec Tyson: There are really robust strains of support for the scientific enterprise in this country, and they’re bipartisan. I’ll give you a few examples: scientific research. Large majorities think government investments in basic scientific research, that they’re worthwhile investments for society.

And even our standing in a global context. Majorities of Americans across the political spectrum say, “hey, the U.S. should be a leader in scientific achievement.”

I think a big part of the story here is seeing the benefits of science in your own life. And if that’s in health and medicine, think about just our longer lifespans or health, right? Part of that is related to the economics, but a lot of it has to do with good medicine; good nutrition; longer, healthier lives. What a great value that science is helping deliver there.

Dan LeDuc: Pew works hard to foster innovative research, which brings us back to Becky. Part of her portfolio is the Pew Marine Fellows Program. It supports mid-career scientists and other experts from around the world to advance knowledge and innovation in ocean protection. She



has more to say about the role of science in addressing some of the biggest challenges facing our world today.

Rebecca Goldberg: Science at its core provides evidence. It provides information. Science is a set of methods of inquiry where people collect information in order to inform decisions in a hopefully unbiased way. And science isn't perfect by any means, but it's the best means we have at our disposal. And it's important for decision-making that that evidence be on the table.

Dan LeDuc: What is science's role as we grapple with what to do about things?

Rebecca Goldberg: For example, if we're concerned about coral reefs disappearing, we want to know what's causing them to disappear. And, therefore, what might be the solution to prevent them from disappearing or dying. And then we can make a political or values-based decision about whether we want to do certain things, but if you don't even have the information out there in the first place, you can't make an effective decision.

If you're out to address problems in the real world, it's important to talk to people and ask them what the information is that they actually could use to be able to address issues. And so, there's a growing focus on where scientists don't just stay in their labs or conferences, but also go out to the people who might use the information they produce and sometimes even involve the people who they talk to in the research itself.

So it's really important for scientists to reflect on how they go about what they do and how they improve it and make it more useful and have people be more engaged and understanding of what the science is.

Emily Chow: So interesting to hear Becky and Alec both address the same topic but from their different perspectives: Becky from her environmental side, and Alec really looking from the polling data of the U.S. public, especially when it comes to trust in science. It's really clear just how important it is for science to be effectively communicated.

Dan LeDuc: Yeah, and Becky gave a really great example of just how some scientists are trying to better engage with the public.

Rebecca Goldberg: So, let's talk about, ecosystem restoration. One of the projects that Pew has invested in over time is restoration of coastal systems in several different areas of the world.

Dan LeDuc: What is the importance of that work?



Rebecca Goldberg: Well, coastal wetlands are important to people; they're important to natural ecosystems. Coastal wetlands, like mangroves, like seagrasses, provide incredibly important habitat for fish, for birds, for other creatures—both that are things we treasure as nature—and also that are important as food and, you know, our sustenance.

Coastal wetlands also do a lot to physically protect humans and human settlements. For example, coral reefs and mangrove forests provide a buffer along the coastline so that when storms or big waves come in, they don't affect land as much as if those systems weren't there.

I was in Florida recently, kayaking, and I would find if I went behind a little mangrove island and a speedboat went by, I wouldn't feel the waves. It was incredible, even though it was just a small buffer of mangroves. So, it was just a sort of a lovely illustration of how important these systems are, particularly with climate change and the fact that we're seeing bigger and bigger and more powerful storms.

Emily Chow: And to hear just how those natural resources like seagrasses and mangroves can protect against the increasingly intense effects of climate change. You know, when I lived in Miami, I remember seeing just how devastating the flooding can be for ecosystems and the communities and for the people that live in them. You can't even walk anywhere.

Dan LeDuc: Scary, isn't it? Yeah. These Pew marine fellows are coming up with some really creative solutions to some conservation challenges, and we'll get to talk to one of them in this season. In the meantime, Becky is going to tell us more.

Rebecca Goldberg: At Pew, we focus on marine science in several different ways.

The Marine Fellows Program is a really wonderful program because it awards fellowships to mid-career scientists from around the world from a bunch of disciplines who are doing projects that inform marine conservation.

And the program brings together people every year, so that they learn from each other, not just because they're in different disciplines, but because they have different perspectives. They have different cultures, but they're all concerned about marine conservation.

Dan LeDuc: So the work that these fellows are doing is really important individually, but the program overall is an important part of Pew's broader conservation work and other goals.



Emily Chow: Yeah, and that includes a lot of aspects that people might not think about when it comes to marine conservation, such as marine protected areas, which are ways of creating healthy habitats, just like a national park or a forest. Also, like fisheries, preventing overfishing, and preventing plastic pollution in the ocean.

Dan LeDuc: Well now let's talk about human health. That's a real opportunity for science to be able to strengthen trust in how it works.

Emily Chow: Exactly. Especially after COVID-19, trust really took a hit, just like Alec described earlier.

It would be interesting to hear more from biomedical researchers this season about the work that they're doing. And I'm wondering, how is trust in science impacting their work?

Dan LeDuc: Well, the biomedical scholars that Pew works with every year are a really innovative bunch doing some of what you're talking about. Our colleague Donna Dang, who supports them, told us more about the program.

Donna Dang, principal associate, biomedical research, The Pew Charitable Trusts: We have the Pew Biomedical Scholars Program. That is our legacy program. It has been around since 1985. We fund assistant professors who are new in their career, typically within the first couple years of their appointment. And then we have a sister program called the Pew-Stewart Scholars for Cancer Research. It's very much the same idea where we're funding assistant professors who are new to their career. But it's more focused on cancer research and cancer biology.

And then we have our Pew Latin American Fellows Program, which is slightly different. It's still a Young Investigator Award, but we are funding talented scientists from Latin America who are pursuing their postdoctoral training in the United States at very prominent institutions and labs. And so, the idea of that program is that they receive this training in the U.S., and then they apply for faculty positions in Latin America, typically their home country, and then we provide some funding for them to start up their labs.

Dan LeDuc: And it's not like these folks get their grants and just go off by themselves. There's a real effort to also build a community among these scholars, right? So, they collaborate a little.

Donna Dang: Yeah, exactly. So even though we have these separate programs, every year we have an annual meeting where we bring all of our active grantees. And we encourage our grantees to put themselves out there to speak to someone who they might not typically work with. So, we're bringing people who are neuroscientists together with cancer biologists, and



they may not ever cross paths at any point during their careers. But I think having those barriers broken down through our program really encourages multidisciplinary conversations and collaborations to really push the needle.

And I think that, as we move through this new age of science, it's really important to be interdisciplinary and to have a lot of these conversations that really cross different fields.

Emily Chow: It's great to hear about the collaboration that is happening among researchers whose paths might not normally intersect. It helps the different puzzle pieces in the problem-solving, and they all fit together a bit more for the public as well as scientists.

Dan LeDuc: You know, it's true. If people aren't seeing the relevance of science in their own lives and the benefits to their communities, it sort of makes sense that there might be some mistrust.

Emily Chow: Especially across income and education levels, race, ethnicity, geographic location. You know, it's unfortunate, but it makes sense that those attitudes would vary. And diversity and inclusion are also an important part of the scientific research process.

Dan LeDuc: Absolutely. And Donna has a great perspective on how that's improving the ways that science benefits people's lives.

Donna Dang: Biomedical research is really important because the idea is that you're trying to improve human health outcomes for everyone on a global scale.

Traditionally, a lot of what we know about medicine is not diverse. And so, I think that bringing in both patients and communities who were not traditionally included in these studies diversifies medicine and how we understand the human body.

When you treat a patient who has cancer, you know, not every treatment will work for a patient, and that's just because not every person is the same. And it has a lot to do with our diverse genetic backgrounds and our exposures and the types of environments that we are living in.

You also have people from different backgrounds who are leading and pioneering these approaches. And it leads into the idea of trust because you bring in a lot of these communities who may have traditionally been left out of the conversation, and it's intimidating for them to be part of the scientific community as individuals who are participating in science. And by



having scientific leaders who look like them or who have had similar experiences like them, it builds that trust, and it helps.

I feel like there are just so many positives in general by being inclusive and by diversifying science as well as biomedical research.

Emily Chow: So, we're planning on featuring some of these Pew biomedical researchers this season, and I'm really interested in hearing about their exciting work and sharing that with our listeners.

There's a biomedical researcher who focuses on diversity in science and how humans respond to pain. And a marine scientist who's a member of an Indigenous community in the Pacific Northwest, and he's going to tell us more about traditional ecological knowledge systems.

Dan LeDuc: These are really fascinating people too, and it's been exciting to hear what got them started in science.

Emily Chow: Yeah, and I hope everyone who's listening will join us as we explore the work of these brilliant scientists and researchers this season.

Dan LeDuc: And for more information, people can visit our website at pewtrusts.org/afterthefact.

Emily Chow: And if you have questions about the season, you can write to us at podcasts@pewtrusts.org.

Dan LeDuc: For The Pew Charitable Trusts, I'm Dan LeDuc.

Emily Chow: And I'm Emily Chow. And this is "After the Fact."