Science Societies

Head, heart, and hands: The science of effective climate communication

A conversation with climate scientist Katharine Hayhoe

By Alison Jennings

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Katharine Hayhoe is joining us this November as our CANVAS 2026 keynote speaker. Photo courtesy of Katharine Hayhoe.

> Atmospheric scientist and world-renowned science communicator Katharine Hayhoe has been invited by the Societies to be the 2026 CANVAS keynote speaker. Her story—which is briefly captured here—is about building bridges in a divided world.

Twenty years ago, Katharine Hayhoe stands at a small podium, having just finished a guest lecture on the carbon cycle in an undergraduate geology class. The newly-appointed Texas Tech professor waits for someone—anyone—to ask her a question about the lesson, but she only sees sleepy students, who had been scrolling through MySpace and Facebook since she started talking. The topic she's most passionate about—climate change, how we've caused it, and what we can do to fix it—doesn't spark the same sort of enthusiasm in the crowd.

Finally, a tall student stands up in the back of the class and raises his hand. She calls on him, hoping that his question will spark some kind of discussion. But what he says isn't a question about geochemical cycling or fossil fuel emissions. It's an accusation: "You're a Democrat, aren't you?"

"No," she responds, floored. "I'm Canadian!"



Hayhoe speaks with Jonathan Overpeck, Dean of the University of Michigan's School for Environment and Sustainability. Photo courtesy of Wikimedia Commons.

Nowadays, Hayhoe has made an entire career out of connecting with people across the political spectrum about climate change, on top of her already existing work as an atmospheric scientist. She is a Horn Distinguished Professor at Texas Tech University, has over 200 papers and reports quantifying the impacts of climate change, served as an author for the Second through Fifth U.S. National Climate Assessments, and supports over 1,000 scientists and even more scientific staff as the Chief Scientist for The Nature Conservancy. Her work has earned her numerous awards, honorary degrees, and recognition from groups ranging from the United Nations to the Sierra Club and *TIME* magazine.

As a scientist, she evaluates climate models and projections, using mathematics to describe climate behavior and predict climate change's real-world impacts on sectors ranging from agriculture to health. Most of her research involves generating and analyzing data on supercomputers, which requires hundreds of terabytes of storage. As a communicator, she translates this work into digestible facts and actionable items via webinars, virtual presentations, and select in-person appearances. She engages with groups like healthcare professionals, community organizations, and politicians about the risks of climate change and what to do about them. Her weekly newsletter, Talking Climate, reaches nearly 200,000 subscribers around the world, and just this year she co-founded the Talking Climate Collaborative, a new initiative that provides the connective infrastructure and behavioral science to support and amplify trusted voices, including scientists.

She's making a trip this fall to Oregon to talk to Society members about her life's path, her work, and how she learned to find common ground in order to talk about the need for climate action. Because believe it or not, the best predictor of someone's stance on climate change isn't "our level of education or our degree of scientific literacy: it's simply where we fall on the political spectrum," says Hayhoe.

Down South

Flash back again 20 years, when she first moved to Lubbock, TX. At the time, Lubbock was voted the second most conservative town in the United States, and the difference between her graduate school experience in the Midwest and her new community was undeniable.

"I felt like I moved to a different country," she says. "Culturally, people were very different than me. I mean, as a Canadian who grew up in South America and went to graduate school in the Midwest, I would feel more at home in many other countries that spoke different languages, culturally, than I did in West Texas."

Adding to this challenge is that climate change is already a heavily politicized issue. How do you get people to listen to you when your line of work is actively being doubted or outright dismissed?

She soon figured out that there are some people you just can't talk to about global warming. According to the Yale Program on Climate Change Communication, about 10% of the U.S. population is made up of "Dismissives," people Hayhoe describes as "if an angel from God with brand new tablets of stone appeared before them saying global warming is real, they would reject the angel from God. So, who am I to think I can convince them?" For these people, "climate denial is an identity marker," she says, "and arguing with them just hardens their denial." But the good news, Hayhoe says, is that if

10% of the U.S. population falls into this category, that means 90% do not—and are potentially willing to have a conversation, if you can find common ground and talk about solutions, not just risks.

Begin by talking about where you live, shared hobbies, things you both are passionate about, favorite sources of entertainment, or even what you like to eat. “Although on the surface, [people] might say things that I would radically and fundamentally disagree with, once you go down one level or two levels or three levels, you're like, ‘I feel the same way. I think the same things.’ And then you can have a conversation,” she explains. For Hayhoe, frequent conversation starters include her faith, the fact that she lives in Texas, and that she’s a parent.

While filming a documentary on severe droughts and how they were affecting farms in West Texas, Hayhoe found herself speaking with a farmer who “had made it very clear that he did not ascribe to any of those ideas that the climate was changing and humans were responsible.” She changed the subject to something a little less divisive. One lunch and an hour or so later, the two realized that they knew people from their respective churches, which established a deeper connection. After a while of getting to know each other better on a personal level, she decided to bring up climate solutions again, this time by asking why the farmer’s neighbor’s land had wind turbines (while his only had oil wells).



An oil pump framed by wind turbines in Texas. Photo courtesy of Adobe Stock.

She expected him to complain about “those newfangled things that make all that noise.” But he said something else entirely: That he had been waiting for years to get wind turbines, too, and it was clearly a sore spot for him as his neighbor hadn’t told him about the opportunity to get those turbines. When asked why he might possibly want wind turbines on his property, he described how easy “the check comes in the mail,” recalls Hayhoe.

“He said, ‘The oil people, they're always driving on and off my land to pick up the oil, making a mess. Whereas the wind turbine people, they set up the wind turbines, and they go push the button in Florida. Who wouldn't want them?’”

That conversation was what made Hayhoe begin to understand two things: First, there is more that unites us than divides us. And second, if people can agree on an outcome, they don't have to get to that outcome in the same way. “Do I have to convince him that climate is changing, humans are responsible, the impacts are serious, and that's why you need wind turbines? Or isn't it just easier to show him that wind turbines could benefit him?” asks Hayhoe.

All too often, if you care about climate change and want to fix it, you assume that everyone also must care in order for progress to be made. Hayhoe says that people always ask her these kinds of questions—how to make people respect science, to love nature, even to stop calling soil “dirt.” But it’s just not that easy. “If you have to get people to be like you first, before you get them to take the action that you want them to do, you've just made your job 10 times harder,” she says. “Because the time to shape someone's values is when they're a child. And even then, we all know from our children, that's not an easy job.”

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A better way of going about this, argues Hayhoe, is to figure out what the person you’re talking to already cares about and what makes them the perfect person to engage with existing solutions for climate and nature. The West Texan farmer’s desire to install wind turbines wasn’t driven by a desire to invest in renewable energy, a cooler planet, or clean air. It was driven by a financial incentive—and that’s *okay*, argues Hayhoe. Because it resulted in the same actionable item: installing more wind turbines.

The science behind the behavior

“99.9% of rejection of climate change is solution aversion,” says Hayhoe. “People have been told that the only solutions involve loss. You can't eat that, you can't have that, you can't go there, you can't do that. Or they've even been told worse—that the only solutions are incompatible with their identity and their ideology. They're *communist* solutions—they’ll *rob* you of your freedom and identity.” In order to address solution aversion directly, says Hayhoe, we have to provide information about solutions that directly benefit them and fit with their values, not just warnings about the effects of rising temperatures.

This comes easier to some people than others, which Hayhoe says is why many struggle when talking about climate change. Often, we are overly reliant on using the physical science behind climate change as an explanation for why we need to care but don't acknowledge the behavioral science behind people's responses to those facts.



Climate solutions are contagious. Hayhoe says that the best predictor of whether someone has solar panels on their home roof is if someone within a mile of their house also has solar panels. Photo courtesy of Adobe Stock.

"Doom and gloom" messaging that focuses on the physical effects of climate change might get people to share a post on social media, but it also causes them to become paralyzed, dissociate from, and become less likely to engage in climate action, says Hayhoe, citing a recent study on global climate change intervention tactics.

"There is actual science that shows that when we scientists communicate only the results that we find—I think of that as the head—only the head, the data, and the facts, it actually doesn't lead to the outcome that we desire in the average person," says Hayhoe.

The head, heart, and hands

Obviously, the facts are still needed: In order to take systematic action against climate change, enough people need to acknowledge that climate change is real, serious, and caused by humans, and that the experts agree. This head "wakes us up" and alerts us to the problem.

"So, we need that, 100%. But it isn't enough," says Hayhoe. "It's like if you're making muffins: You need the eggs, you need the oil, but if you just use eggs and oil, you're not

going to get anything resembling a muffin."

So, what else do we need? We also need the heart.

"The heart connects what's happening and why it's happening to why it matters to us," says Hayhoe. How does climate change affect the things, places, and people we care about? Climate change personally affects us in different ways—maybe you are struggling with increasing insurance rates, or you care about your child's asthma, grocery prices, even outdoor sports—all these are being impacted by climate change right now, even if you don't realize. According to Hayhoe, two-thirds of people in the United States, and even greater numbers in other countries, are generally worried about climate change because they know the facts (the head). But less than half of people think climate change will personally affect them, even if they recognize it as a risk. This gap—the psychological distance—is pretty big and closing it will incentivize more people to take action.

But even the heart isn't enough, says Hayhoe. "We also need the hands. We need to understand what to do."

"What do I do about climate change?" is the biggest, most frequently asked question that Hayhoe receives, which is why she says that only 8% of people know how to combat it and are actually taking steps to do so. People often tell her that they feel sad, anxious, paralyzed, frustrated, and depressed when they think about climate change, because the problem seems to be so daunting that they just don't know what to do. And when we don't know what to do, we check out.

We often are told that we (as individuals) need to have perfectly small carbon footprints in order to course-correct climate change, when in reality, the ultimate goal is systemic change. And the most effective way to implement that kind of change is through awareness. “The most important thing an individual can do to catalyze change at the scale we need to fix this thing has nothing to do with our personal carbon choices,” says Hayhoe. “It has everything to do with how we use our voice: How we use our voice to advocate for change at every level—where we live, where we work, where we vote, where we play, where we worship—everywhere we are, we need changes at every scale. And those changes only begin when someone uses their voice.”

You can use your voice in many ways. By voting (either at the polls or with your wallet) and by talking about why climate change is important to you with your friends, family, and neighbors, “engaging with each other in our communities at every scale is how we catalyze change,” says Hayhoe. “That's how social change has happened in the past, and that’s how it can happen again.”

The six most important climate change actions for individuals

Katharine Hayhoe says these are the six most important things an individual can do to make a difference about climate change.

1. **Talk about it.** Start a conversation with someone about why climate change matters, using the heart (why you care) and the hands (what real solutions look like) to carry the conversation.
2. **Join a climate action group.** Joining together with other people will amplify your voice.

3. Have conversations **where you work or where you study**—whatever organization you're a part of.
4. **Vote with your money**, including banking green. “Even $1,000 in a bank account that invests that money in fossil fuels produces the equivalent carbon emissions of flying from New York to Seattle every year,” says Hayhoe.
5. **Let your elected officials know** why climate change matters and what we can do about it. “And when I say elected officials, 99.9% of elected officials in the U.S. are not federal,” says Hayhoe. “Where I live in Texas, some of the most influential positions to control our greenhouse gas emissions at the state level are the railroad commissioners. Yet, that's not really a big climate voting initiative. I think it should be.” She adds that city councilors are also at the forefront of climate action: They tend to be more bipartisan and can implement solutions much quicker than at the federal level. “If you show up and you just use your voice to share why your city or your county or your state needs to be doing something, that has an outstanding impact.”
6. Make changes in your personal life to reduce your personal carbon footprint, but remember to **make those changes contagious** by *talking about them*. Simply sharing how you compost, how you’re changing your lawn into a pollinator habitat, or how you’re going to a city council meeting to advocate for more bus lines all has an impact, too.

How our food systems are involved

And, Hayhoe adds that the scientists, research staff, extension specialists, and crop and soil advisers who make up ASA, CSSA, and SSSA have an increased responsibility

to make an impact because of their knowledge in the agricultural and environmental sciences.

While every economic sector simultaneously contributes to and is vulnerable to the effects of climate change, the food sector is a key area for implementing climate solutions. Hayhoe says that food, agriculture, and its related land use produce between a fourth to a third of our total greenhouse gas emissions. But our food systems are also unique because natural systems, like farms, can be turned into carbon sinks. She notes that one avenue of The Nature Conservancy's research is to work with food systems to make them not just a net-zero operation, but an operation that can actually take up carbon from the atmosphere while improving soils, yields, and pollution problems.



Sustainable ag in action: red clover intercropped in maturing wheat. Photo courtesy of G. Philip Robertson, W.K. Kellogg Biological Station (Michigan State University).

Five years ago, Hayhoe joined The Nature Conservancy as its Chief Scientist. When asked why she made that leap, she says that it was because of how they put science into action to “develop, demonstrate, and scale practical solutions for people, nature, and climate.” The Nature Conservancy works in over 80 countries around the world, and their staff includes thousands of scientists and members who partner with different research institutions and universities. Their hundreds of papers and scientific presentations make significant contributions to “the head” every year. “But we know that you could have the best science in the world, but if people don't understand why it matters or what you can do with it, nothing's going to happen,” says Hayhoe. That’s why the institution also has a large presence on the ground around the world, “to really figure out what is it that local communities are most concerned about when it comes to climate, health, livelihoods, well-being, and nature.” That presence, says Hayhoe, is the heart.

She adds that The Nature Conservancy’s work also represents the hands because their science is “relentlessly solution-focused.” The organization’s work includes assessing regenerative agriculture management practices, mitigating pollution runoff, developing pollinator habitats—even developing AI-powered cameras to deter illegal fishing operations. “[We’re] not just developing the solutions, but also implementing them on the ground with the communities in those areas, especially with local communities, indigenous peoples, and farming communities,” she says. “And so that's what I believe is so effective about The Nature Conservancy’s work, the fact that it is science-based, but it connects directly through the heart to the hands, always looking to implement and scale solutions for a better future for people and nature together.”

Change takes energy, time, and a lot of people. The food sector alone is a huge undertaking, but solution-driven research can slowly help us achieve an operation that not only continues to feed us, but gives back to nature, too. Developing solutions that boost both food yields and environmental health is a challenging task, but a possible task, and striking that balance gets everyone on board with climate solutions as well, says Hayhoe. “We want to build a better and a more sustainable future for people and nature together. We can’t do that without tackling climate change, too. And I truly believe that change for a better future begins with our food systems today.”

Want to know more?

Register for CANVAS 2026 here, so you can listen to Hayhoe’s keynote speech and learn more about research done by The Nature Conservancy this November.

Register for CANVAS

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