



PROFILES IN SCIENCE ENGAGEMENT WITH FAITH COMMUNITIES

# Katharine HAYHOE

*Katharine Hayhoe is a climate scientist and a professor at Texas Tech University. We spoke with her about the difference between being a good scientist and a good communicator, effective use of social media, being authentic in public science engagement, and dealing with difficult people. (Above: Katharine Hayhoe. Credit: A. Limmer/Texas Tech University)*

**When it comes to an often-contentious topic like climate science, public engagement can seem very daunting. What's your philosophy on approaching the public in this context?**

For most of us scientists, public engagement is not a major part of our job description. In our careers, we're typically evaluated on how much time and effort we spend on research (and the success we garner), with only a brief nod to our teaching ability, and mere lip service to our societal contributions. Not only that, but studies have shown that the very characteristics that make us good scientists—the ability to conceptualize abstract concepts that emphasize uncertainty and the future, for example—are often exactly the opposite of what makes good communicators, namely, the ability to convey concrete information with relevance and certainty.

Compounding the challenge is the fact that we scientists can fall into the trap of thinking that because we're experts in our field, we're also experts in talking about our field. In reality, though, communication is its own science. If we are going to spend time on engagement and outreach, why not make every effort to do it as thoughtfully and effectively as possible? If we just charge in with a naive belief that, "This is the way that I communicate, and everybody will understand what I say," then we aren't going to be effective.

In my opinion, two of the most important characteristics for effective engagement are mindfulness and humility: the first, recognizing that not everybody thinks like we do—in fact, as scientists, we're probably the unusual ones—and the second, that there's a science to communication that we can learn through studying the research of experts and putting it into practice. I look to the social science literature for guidance on messaging, framing, and cognition, and how people think about and process information. Understanding what people think, and how, and why, is key to beginning the conversation in the right place, rather than the wrong one.

**What are some of the ways you engage in public science communication?**

As a scientist, when we're looking to engage, I think it's important to ask ourselves two questions. First of all, "What do I enjoy doing?" Because what's the point of spending time on something that we don't enjoy at all? And then second, "What is the most effective way or place to reach the people I want to talk to?" Because there's no point doing X if they get their information from Y.

For example, I do enjoy writing. But rather than try to start my own platform with my own content, I try to plug in with organizations that already have an audience. I offer them an essay, or interview, or a resource they can disseminate to their platform. If I write an essay for a Christian mission organization, that goes out to every member and supporter in a newsletter that those people would already read. Hundreds, possibly even thousands, of people would then have access to that information, people who would never have come to my website, channel, or blog.

Also, I like to use every minute and every second that I have. For this purpose, Twitter is the ideal social media platform. It thrives on the rapid-fire exchange of short ideas, perfect for when I'm waiting to pick up my child from school, board a plane, or answer

my next call. Short periods of empty time that aren't enough to write or do research? I use Twitter to fill those gaps.

I receive a very high number of speaking invitations every year, but travel takes a lot of time and burns a lot of carbon. So we ran an experiment a few years ago, at a Christian college, where I was speaking in person to half the students in one room while in the other room, the other half of the students were watching a prerecorded video of the exact same presentation. We found that, overall, opinions about climate change did change as a result of my talk, but that there was no difference in how those opinions changed between the students who watched the video versus those who attended the in-person talk. So now, I spend nearly 80 percent of my speaking time giving online talks and hosting our Global Weirding series on YouTube. Thousands of people watch the videos, whereas when I give a talk, I might have 400 people at most in the audience. It's a much more effective use of my time.

**How do different audiences on social media influence your approaches to online engagement?**

The most effective way to use social media is to be authentic and share what we have to offer, our unique perspective and expertise. I'm a climate scientist, so I post about my research, about other interesting research I see, and I comment on climate stories in the news.

As people start to follow and engage on different social media platforms, I start to get a sense of who they are and what interests them, and I try to learn from their feedback so I can emphasize more of what people want to know. For example, when I post a hopeful, positive story about solutions I often get a very strong positive response; so now I try to look for and share more of those stories. I also find that a lot of people appreciate it when I provide the climate science context for a current event, like a hurricane or a flood or a wildfire or a heatwave; so now I have Global Weirding episodes for those topics that I can share.

The platforms are very different, though. Twitter is primarily fellow scientists (I curate a list of well over 3,000 scientists who do climate on Twitter that people can subscribe to), journalists, and people who are very engaged, all of whom want up-to-date information. Also on Twitter, there's a small but very vocal cadre of dismissive people who have no interest in ever changing

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A Reddit Ask Me Anything (AMA) with Katharine Hayhoe. Credit: K. Hayhoe

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The homepage of the Global Weirding series on PBS.org.

their mind about climate change. I typically respond at least once, because I want to give people a chance, but once it’s obvious that they’re dismissive, I don’t go down the rabbit hole with them because that’s a waste of my time.

On Facebook, people who like my page are connected to [others], friends and family, who tend to be much more conservative. I find that people on Facebook are looking for information to share that is not political, information that is hopeful about solutions, information that is relevant to their identity and their faith, and most of all, information they’d feel comfortable sharing with Auntie Sue and Cousin Bill.

Finally, Instagram is completely different. People want to hit the heart button under heart-warming or encouraging or beautiful pictures, and they’re never there to argue. They just want positive information that engages our mind and our heart, images that we can connect with in a much more personal and visceral way.

Which social media platform fits you best depends on your style, and with whom and how you want to communicate. There is no right “one”—we need scientists on all of them!

**Do you have any suggestions for scientists who may be nervous about venturing beyond the ivory tower?**

First, it’s okay to be nervous. We’ve never been trained to do this. There is no shame in acknowledging our need and looking for training on how to communicate effectively. How do we speak to people who don’t come from the same scientific background as us? How do we connect with people?

One of the best ways I ever spent my time was on media and communication training to learn some of the skills and science behind communication. Any good training will include exercises like role-playing or doing interviews on video. It’s really important to do that because it helps us to see ourselves through someone else’s eyes and, even if we’re uncomfortable or horrified with the result, a good training offers suggestions for concrete and actionable ways we can improve.

Second, it’s okay to say, “I don’t know.” If people ask a question that you don’t know the answer to, it is entirely acceptable to say, “I don’t know, that’s a great question. I will look into it and I will get back to you.” It’s also okay to use a pre-existing answer or resource: in fact, I think it’s better to do so because then you don’t waste your time

reinventing any wheels. I often see scientists, especially on social media, answering the same old questions in great detail when it’s a lot more effective to say, “That’s a great question, here’s a resource that answers it.” Personally, on climate-related questions, I have about 20 or 30 Quora answers I regularly link to, about 35 Global Weirding episodes I use, and more than a hundred Skeptical Science responses to common climate myths I refer people to. Anybody can use these resources!

And lastly, practice makes perfect. We’re always going screw up, and we learn the most from our screw-ups. Whenever I do a talk or a video, I always look at it afterwards and think, “How did people respond to what I had to say?” and “How could I have communicated this more effectively?” It’s important to view what we do as a learning experience for ourselves. Every single time, we can think about how we would do it differently to make it even better next time. And the more we do, the more comfortable we get.

**How would someone figure out where and how they should engage with the public?**

There’s a huge spectrum when it comes to science engagement and there is no “right” place on it for all of us to be. For some of us scientists, honestly, our time is most effectively spent 100% in the ivory tower, doing our science and publishing our studies. For some, it might be engaging with our scientific societies in developing and disseminating outreach, training, or assessment products. For others of us, our sweet spot might be speaking at a local school or engaging with our kid’s STEM program. For still others, it might be doing a press release for our studies and being willing to talk to reporters. Or plugging in on social media, doing videos, or working with students on outreach projects. For a few, it’s stepping into the public spotlight and—if we’re in a field as politically polarizing as climate change or evolution—shouldering a lion’s share of the abuse scientists receive for telling people that yes, the science is real.

There’s no “should” when it comes to engagement. It is an open field. Where you choose to be at whatever time of your life is a completely personal choice, based on your unique priorities, your values, your abilities and your conviction; so don’t ever let anyone else dictate it to you!

**Can you talk a bit about dealing with difficult people in science engagement contexts?**

Discerning when somebody is just out to frustrate you and waste your time is an



important skill to develop, especially online. As soon as we stick our head outside the ivory tower, we are going to get the cranks and the trolls, and it is helpful to have a perspective ahead of time on who these people are and what their goal is.

Often as educators and scientists, when people ask us questions, we interpret that as a sign of interest; and for many people, it is. But cranks and trolls are not asking questions to learn; they are engaging with us to validate their perspective (because, perversely, opposition encourages them) and to take up our time and sometimes even explicitly to exasperate or discourage us. They are not there to learn or to change their minds, and we will end up wasting our time on people who are dismissive.

So, who are these dismissive people? The Six Americas of Global Warming is a helpful metric. It shows that we aren't just positive or negative on climate change; we're actually on a spectrum.

At one end of the spectrum you have people who are already alarmed, and those people's questions tend to be, "Is the world going to end? Is it too late?" Then, you have people who are concerned, and they want to know, "Is there any way we can fix this without destroying the economy?"

Next, you have people who are cautious. Those people are great to spend time on because they'll say, "Well, I've heard that [climate change is] just a natural cycle, is that true?" And when you explain how we know it isn't a natural cycle, they're like, "Okay, that makes sense. Thank you very much. Alright, so I'm just one person, what can I do about it?"

Then there are people who are disengaged, who just don't think it matters to them. The first thing out of their mouth will be, "Why does it matter to me?" And then there are people who are doubtful, who are similar to cautious people but taken to the extreme, who have a lot of very tough questions: but if we're respectful, they will listen to the answers.

And finally, at the opposite end of the spectrum from alarmed, we have people who are dismissive. Dismissives represent about 10% of the population in the United States. Dismissive people will dismiss anything we say to them because their identity, their sense of self, is literally built on rejecting the necessity for climate action.

Since rejecting the science is such a core part of their identity, dismissive people are the

loudest on social media and in the comments section on articles online. They are the ones who will keep on asking the questions and gallop on to the next question without even acknowledging our response to the first one. For this reason, it's easy to be sucked into spending proportionally more time on them, because they are the ones who most demand it (and who are most offended if we say, "please read this resource that addresses your objection," rather than giving them a lengthy personal response). However, there is little point spending significant amounts of time on dismissives because their goal is not to learn, but to suck up all our energy, time, and attention. And if we are aware of this in advance, it allows us to plan our response and allocate our time most efficiently independent of what they may say or do.

**Do you have any suggestions for scientists who want to engage with faith communities, whether their own or others?**

Here again, the most important thing is to be genuine and respectful. For the first few times, don't be afraid to look for a friendly audience. Kids are awesome. Or, your own church, or somewhere where you feel like people are going to forgive you if you mess up. You could look at faith-based student groups on campus, who are always happy to hear from faculty. And in terms of congregations, it doesn't get any more welcoming than Unitarian Universalists: you can be any flavor of faith or lack thereof, and they will welcome you with open arms!

But preaching to the choir isn't necessarily the most efficient use of our time; so as you progress, I recommend identifying the communities that you share the most with and focusing on them. Are you Catholic? Muslim? Presbyterian? Focus there.

After a talk I once gave on climate communication, a fellow scientist approached me. "I've tried to reach out to churches in my community," he said, frustrated, "but I can't even get my foot in the door. Do you have any advice?" "What denomination or faith tradition do you identify with?" I asked him. "None—I'm an atheist!" he responded, surprised. "In that case," I said, "I think you should stop. Let someone else reach them. Instead, focus on what you truly and genuinely care about." After asking a few leading questions, it turned out that he was a serious deep-water diver. "Why not reach out to PADI certification programs in your area?" I asked. "They need to know about climate change and marine science, and you're the perfect person to share it with them!"

Who you are is unique, and that means you can reach a unique audience. The corollary is that we are most effective when we're talking to people who we share the most with. So when I talk to any group, I try to figure out ahead of time, what is it that we have in common? It doesn't have to be our faith. Is it a shared understanding of our geography? Is it that we care about gardening, birding, our kids, our health, cities, the economy, a shared hobby?

Starting our conversation with what we have in common is the most important thing we can do; and if I can't think of what that is, then either I'm not the right person to be having that conversation with them—and that's okay!—or I haven't gotten to know them enough and I should be listening and asking them more questions rather than talking at them.

Our most effective conversations begin from a place of genuinely shared values and beliefs. ~

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