How one Earth system scientist mastered climate science communication

Zack Labe ’20 (Ph.D., Earth System Science) takes a different approach to climate sci-comm. And if his legions of followers are any indication, it seems to be working.

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Labe's passion for the weather began long before he came to UC Irvine. As a middle schooler, when he wasn't taking detailed temperature readings of snowstorms, he would get on his school's loudspeaker and announce what the weather would be for the week. "I’m really lucky that I had supportive family and teachers along the way that let me do all these things," he said.

Picture Credit:
Colorado State University

Communicating climate change science is difficult. It’s a complex topic that demands expertise in multiple, interconnected disciplines, and it’s also heavily politicized, making it tricky to communicate climate facts without stirring personal passions. The stakes are also high: each year, the ramifications of emitting greenhouse gases into the atmosphere get more severe.

It’s a challenge that Zack Labe, who studied Arctic sea ice and climate change for his Ph.D. in the UC Irvine Department of Earth System Science, was especially suited to face. In his first years as a graduate student, Labe noticed something: a lot of the dominant communications about climate change data were overly complex and seemed to alienate anyone without a science background.

“I just felt there was a gap that could be filled by actively communicating the data,” Labe said.

Labe took a different approach, and now, many years later, if you visit his various online channels, you’ll find a dedicated following of thousands who regularly turn to him for the latest climate change data and information.

But things didn’t start that way. Labe’s path into climate science and science communication began long ago during his childhood in his home state of Pennsylvania. There, snowstorms captured Labe’s imagination, and he would spend long hours monitoring and recording outdoor temperatures as they shifted over the course of the storm.

“I just had this passion for the weather,” said Labe. “From elementary school onwards, my diaries were actually all weather journals. My parents even got me little weather stations, and I kept track of hourly temperatures during big snowstorms and would run outside with a flashlight at night measuring snowpack.”

Labe took a stab at science communication not long thereafter. “I knew I wanted to be a meteorologist,” he said, “and in middle school I was giving the morning announcements with the weather forecasts for the upcoming week.”

Those two roles: scientist and communicator, would go on to define his life all the way to his time at UCI, where Labe studied Arctic sea ice and how its changing thickness in the face of a warming world may correlate with and impact shifting weather patterns at lower latitudes.

“One method meteorologists use to forecast snow is looking at weather patterns further north,” said Labe. “A big question that still remains in climate science is if Arctic climate affects extreme weather further south, and what are the connections between the two.” Such questions arise when extreme events like cold air outbreaks drift southward across parts of the U.S. due to a shift in the polar vortex.

Nowadays, Labe works as a climate scientist for Climate Central, where he splits his time between working to help decision-makers and other stakeholders understand how climate change may affect them and continuing his mission to tell the story of climate change using data that anyone can access and work with.

If you visit his popular Bluesky social media account or website, you’ll see Labe’s climate communication strategy at work. He regularly posts colorful visualizations showing climate-related phenomena, and he makes the data he uses to make the graphics available to anyone who wants to see them. He also invites people to draw their own conclusions about what they see in his visualizations.

“My ultimate goal is to break down the data and be very transparent about the data and the uncertainties of the data, because climate change is so politicized,” said Labe, who deliberately avoids adding any of his own interpretations to his posts. “My ultimate goal is to bring the scientific process to everyone, and to try to make them feel that they’re a part of analyzing the data with me as the sea ice data comes in every day.”

Labe hopes people will one day be as receptive to climate reports like his as they are to checking daily weather reports on their phones. “With weather, we talk about it every day,” said Labe. “And I always thought: why don't we start talking about climate data every single day?”

In a sense, Labe is doing what he’s done his whole life: retrieving measurements of the weather and climate and getting on a loudspeaker and telling everyone about what he’s seeing.

“I want to let the data speak for what’s happening,” he said.

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