

By S. Hussain Ather

Livestreaming science

I arrive at the lab where I work as a postbaccalaureate researcher and, like many scientists starting their days, I open my laptop, check my email, and plan my agenda. But then, when I'm ready to get to work, I turn on my laptop camera. I perform computational research studying the neuroscience of zebrafish—and I use an online streaming service to share it with the world in real time. I had started to use the platform, called Twitch, a few years ago to watch people play video games. But until last year, it had never occurred to me that I could use it for research, too.

When I used Twitch for video games, I never streamed myself, but I enjoyed watching other gamers play and share their strategies. I also liked interacting with streamers and engaging with other viewers. For me, it was an open, trusting, and supportive environment that offered a great way to build community and learn. (There are a few similar platforms, but Twitch is the most popular among gamers.)

Then I went to a conference, where I met a computational scientist who was considering livestreaming his research. He thought it would be a good way to share his work more widely with other researchers, and to give the general public an intimate window into how research is conducted. He even proposed real-time programming competitions, which would foster community discussion.

Initially, I thought it was a crazy idea. Twitch is for gaming, not science. But I was intrigued. An internet search revealed a few scientists who streamed their work, and I started to wonder. Maybe there was something to this.

The idea of opening up my work for public viewing and commenting was a little nerve-wracking. I was worried that the whole world would be judging my abilities. But our lab already shares much of our work publicly on GitHub, a website for posting software and code, and streaming seemed like the next logical step. It would be more efficient to get input from users as I worked than to wait until I had updated GitHub. I decided that the possible benefits outweighed the risks. My boss thought streaming my work was the “weirdest thing” and doubted that anyone would want to watch, but he gave his blessing.

So I started to livestream my research for a few hours a day, sharing work that won't compromise my, or my lab's, ability to publish. Anyone who visits my channel can watch me and my computer screen as I work. Sometimes I stream myself reading scientific materials and writing on my blog. One time,



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I even picked up my laptop and gave a virtual tour of the lab.

My audience is on the small side—some days I have a handful of viewers; other days, I have just one or two—but regardless, the interactions are valuable. Viewers ask me why I choose to run specific programs and about my career goals. They comment on my code and provide feedback. I love engaging with people while still getting work done—and in some cases doing it more effectively than I would have otherwise. One viewer with a bioinformatics background suggested that I use a different tool for one of my analyses, which helped fix a problem I had been stuck on. Another told me about a machine learning tutorial that I have found tremendously useful. Sharing how I write and edit my code—not just the final product—also helps me hold myself accountable to appropriate standards and conventions.

The benefits have extended beyond the nitty-gritty details of my research. I have chatted with my viewers about the philosophy of neuroscience. I've practiced explaining my research in ways a general audience can understand—a skill that will serve me well in my planned career as a scientist and communicator. My boss has even begun to stream some of his research, inspired by my positive experience.

As I open myself to this new method of engagement, I find novel ideas I can embrace and opportunities to grow and improve. Viewers gain insight and trust in science from watching how I do my research. By sharing my work, I show myself to the world. ■

S. Hussain Ather recently completed a postbaccalaureate research program at the National Institutes of Health in Bethesda, Maryland, and will be starting a master's degree in science communication at the University of California, Santa Cruz, in the fall. Send your career story to SciCareerEditor@aaas.org.

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