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## The Science March: An Unseen Impact

Kristy Twaalfhoven, Sophomore  
Reporter in the Field

On Saturday, April 22nd, thousands of people gathered at Boston Common for Boston's Earth Day Science March. Though billed as a march, it was held as a rally due to logistical challenges. The crowd was protesting the proposed cuts in science funding by President Donald Trump's administration and the appointment of cabinet members who are viewed by many as hostile to scientific concepts such as global warming or vaccination. The event was just one of more than 600 Earth day events held around the world. I interviewed my sister Becky, who attended the march, to find out more about it!

### What motivated you to attend the Science March?

*I'm primarily concerned with the environment, and I've been upset by the Trump administration's disregard for climate change action, like funding and research at the EPA. That's really important to me, because I think that we have a responsibility to try to fix some of the damage we've caused to our climate. I also think that science is a lot about peer review and attempting to find facts, but the current political climate has hasn't relied so much on truth; many of the statements made by our President and his administration have not been backed up by fact. Having evidence for what you say is important, especially for us as leaders of the free world, because the United States is supposed to be an example for the rest of the world on how democracy promotes innovation, research and discovery. But this administration has been defunding research and has proposed cuts to programs that would advance environmental protections. As someone who loves science, I think it's more important than ever that young people show that we will continue finding facts and using evidence in the scientific process to actually get the truth. Continuing medical research is also more important than ever, as we are closer to finding cures for a lot of diseases; for example, cancer research has been moving at a really quick pace and it feels like we're so much closer to finding a cure. If you defund research facilities and programs for students to get involved in science, and if you defund things like Planned Parenthood, then you're diminishing the progress we've made in the past few years.*

### What different reasons for attending did you hear from others?

*Boston is one of the leading world centers for science, especially in medicine. There were teachers and students from Harvard and MIT, as well as residents and employees from MassGeneral who went. There was a lot of anti-Trump sentiment, but there was also a lot of nonpartisan sentiment from people who just believe that we need to protect our climate. There were kids with signs there that said, "I want to be able to build snowmen with my kids!" There is also fear for the direction that we're headed as a country, and like all big protests there were people who showed up just to protest the administration in general. Many people had very specific reasons for going, but there were also more general fields; for example, the speaker was involved with promoting diversity in engineering.*

### In your opinion, what was the goal of the march?

*The March for Science organizers put up their goals on the website: "science for the common good, evidence based policy for public interest, increasing education, diversity and inclusion in stem fields, public sharing of information and data." If you, as a scientist, discover something, the idea is that you should share what you've discovered so that someone else can test it and improve on your results. However, within the science community I think there's been a desire to protect your own information. The most prevalent subject the speakers talked about was funding for scientific research, especially the EPA, which has been taken down by the Trump administration.*

### What did you expect to experience?

*I attended the Women's March in D.C., which was different because it was a march, and it was the first major protest since the Trump administration came into office, so a lot of people in D.C. were angry at the election results. It was much more partisan and targeted at Trump personally because of his statements about women; there was more of one common theme. This was different from the Science March, which turned out to be a rally at the Common, where everyone was in one place. I didn't know what to expect from the speakers. They turned out to be some professors, the leader of an engineering society, a former EPA worker, and others. It was really cool to hear their perspectives. The fact that everyone still turned out even though it was raining just goes to show the amount of dedication everyone had.*

## The Puzzling World of Space

Alix Livermore, Sophomore  
Reporter in the Field

I don't know about you, but when I start to think about the vast expanse of space that Earth, our galaxy, and every other speck of matter that exists is floating in, I get a little confused. Now, even though scientists have conducted extensive research on things like stars and black holes, I feel very far from satisfied. I often ask myself how we humans can be living on a ball of rocks that is floating in an infinitely expanding cloud of nothing. And this question seems to have no easy answer. Paul Sutter, an astrophysicist from Ohio State University, says that the universe doesn't even need to have an edge and it is in fact expanding into a fourth dimension! Even Mr. Sutter has trouble understanding his claims, but believes them because his mathematical calculations support them. The fact that we are currently only living in three dimensions certainly makes this idea confusing; however, even the established scientific conclusions we reference every day seem to contradict this idea.

If we are matter (we being people and everything that exists right now), and we take up space, then the universe we live in must contain enough room for us to exist. And if the universe we live in exists and we are within it, then it must also take up space. But doesn't the universe then have to be contained in some other unit? And if the universe is expanding, then mustn't it have an edge that can be expanded? These avenues of thought always snowball in my mind into more and more complicated ideas until I have to yield to the huge field of confusion that is space. Thinking about these types of things and how immensely complicated they are makes every human experience we are going through here on Earth seem comparatively insignificant. It's crazy to think that while these humongous uncertainties exist, that we can still focus on things like what we are going to eat for dinner and what movie to watch with your friends. So, although thinking about space is fascinating, I think it's equally good at prompting confusing existential crises that may never ever be fully understood by our one track human minds.

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### Describe the scene/atmosphere upon your arrival at the Common

*I took the train in, and as we got closer to the city of Boston, there were more and more people with signs obviously going to the march. When we got to the Common, there was a migration of people towards the center, so we joined in with them. There was a more family-friendly kids' rally with speakers before the official bigger march. That was less about technical terms and more about just kids loving science. I think the kids' rally was intended to emphasize the importance of kids studying science, being educated in science, and looking for the facts. Then we went over to where the full protest was being held, where the speakers were. Before the rally started there was a band and people dancing.*

### What did your sign say?

*"Trump is like an atom; he makes up everything."*

### Can you recall your favorite signs?

*"My dog is smarter than our education secretary."*

*"Policy without science is like Cheetos without Benzenesulfonic Acid."*

### In terms of the make-up of the crowd, did you see any trends? Demographics?

*No, it was pretty diverse. There is a general idea that science, and specific fields like engineering, are not especially diverse. But I still saw a good mix of male and female. We were on the younger side, surrounded by adults, but the kids were probably all at the kids' rally. Boston is a fairly diverse city, so I don't think anyone felt discriminated against or that they weren't welcome because of race, ethnicity, religion, etc.*

### How did it feel to know you were standing up for something you believe in?

*The one thing with protests and rallies is you don't often see the impact that you make. One essential part of democracy is freedom of speech and assembly, so it's great that we have the ability to gather and stand up for what we care about. It's also nice to see that there are a lot of other passionate people who have the same concerns that I do, but it is tough to convince yourself that you've accomplished something because, aside from seeing the media coverage, you don't really know how much of an impact you made.*

### Moving forward, what are your hopes for science?

*I hope that the administration changes its mind about climate change, which I don't know that it will. It's tough because this particular administration has promised to promote jobs for coal miners and promote industry and infrastructure, but my personal goal - to protect and conserve the environment - contradicts a lot of those goals. I know I individually can do a lot, but I hope the protests across the country and the steps scientists take in the research they conduct will find ways to solve these problems. Even if politics gets in the way of promoting climate change research and prevention, I hope that we can still find a way to make a difference.*



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2016-2017

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