Observations

We Must Defend Science in the Face of Political Attacks

To make that happen, a powerful and diverse coalition must arise

By Ayana Elizabeth Johnson on May 13, 2019

The author speaking at the May 4, 2019 March for Science. Credit: Ryan Muir

The third annual March for Science was in New York City on May 4. What follows here is my keynote speech about political attacks on science, the importance of safeguarding the role of science in policy making, the value of diverse scientists, the role of the ocean in the Green New Deal, and the critical need for building community around solutions.

As a marine biologist, a policy nerd and a Brooklyn native, I'm excited that the flagship March for Science this year is in my hometown. I am also glad to be here as one of the original leaders of the March for Science. I was national co-director of partnerships for the first march two years ago, building and coordinating a coalition of about 400 organizations advocating for the role of science in policy making.

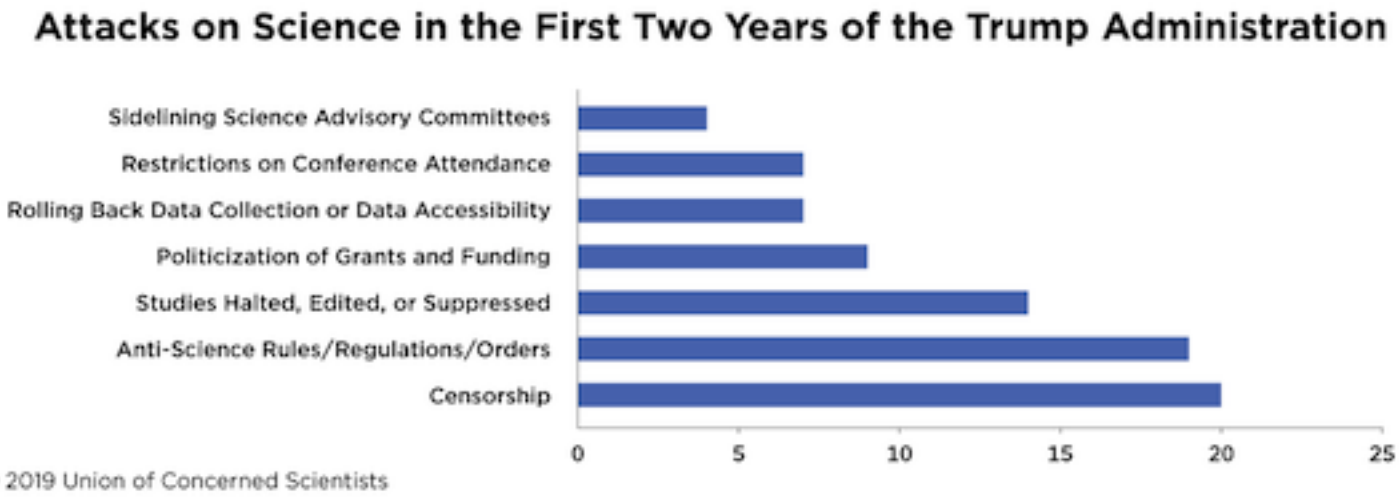
My favorite sign from that first march was an umbrella (the weather did not cooperate then either) that had painted on it “Because of science we knew it was going to rain.” Scientists make the best signs. And many are continuing to stand up for science. Our power is in numbers, in coordinated efforts, in showing up for each other, in collaboration.

I also served on the inaugural March for Science diversity committee to help ensure our movement was inclusive and welcoming. Because it matters who does science: *Who the scientists are determines what science gets done*. The fishing research I have done was most certainly informed by having a Jamaican father who showed me the cultural value of seafood, beyond its ecological and economic importance. Ocean Policy Lab, the think tank I am currently building, is focused on policy for coastal cities—because as a New Yorker I am deeply concerned by how woefully unprepared coastal cities are for the ravages of climate change, from sea level rise to strengthened storms.

Diversity in science is *not just for optics*. We need scientists from diverse backgrounds in all senses of the word—race, ethnicity, gender, class, ability, geography, etc. Only this will ensure we are asking a diversity of research questions. And while we’re on the topic of diversity, to be honest, I’m sick of people being so damn surprised that someone who looks like me is a PhD scientist. *This is what a scientist looks like*.

The primary reason I march for science is to stand up for the critical role science plays in policymaking. As documented by the Union of Concerned Scientists, which is doing

incredible work to track these abuses of power, in the last two years there were *80 significant attacks on science* by the Trump administration—from halting or editing scientific studies that go against their political agenda, to politicizing who receives research grants, to restricting government scientists' attendance at scientific conferences, to hampering access to data, to straight-up censorship. And then there is the silencing of science by simply leaving positions vacant. As of January, an unprecedented 43 top government science positions were unfilled.



Credit: Union of Concerned Scientists

According to a survey of federal government scientists, conducted by Union of Concerned Scientists with Iowa State University:

- 50 percent of federal scientists say political interests have hindered their agencies' ability to make science-based decisions. Let me repeat that: *Half of federal scientists report that politicians are messing with science*.
- 47 percent of scientists at the National Park Service and 35 percent at the Environmental Protection Agency report they had been asked to omit the phrase "climate change" from their work. That's insane.
- Unsurprisingly, morale is down at these agencies.

And then there's what's being done to scientific advisory committees. These committees are comprised of scientists who *volunteer* their time to be useful to the government. Serving on a science advisory board, serving as a peer reviewer for government reports, *these are acts of patriotism*. Yet these committees are being disbanded and compromised, or simply not having meetings.

- The Environmental Protection Agency's Scientific Advisory Board now has four times more industry representatives, compared to two years ago.
- The Food and Drug Administration disbanded its Food Advisory Committee, whose advice had been relied on for 25 years.
- The Department of Commerce disbanded the Advisory Panel for the Sustained National Climate Assessment, which had been doing the critical work of interpreting climate science for businesses, the public, and local governments.
- The Center for Disease Control was prohibited from using the terms "diversity," "vulnerable," and "science-based" in their budget documents. Seriously. It's wild.

So much damage has been done. There is so much to undo and rectify. Yes, people have been fighting back—writing public comments on proposed regulations, objecting to political appointments, politely protesting—but it remains an uphill battle, and maybe we need to be less polite. And definitely, we need use this next election to change who is in the White House and in halls of power across the nation.

One big opportunity with Congress is the Scientific Integrity Act. Introduced by Senator Brian Schatz of Hawaii and Representative Paul Tonko of New York, it would protect federal government scientists from political interference. We must to ensure this bill gets passed. Congress needs to step up. We must safeguard the role of science in policy making.

And then there's the science of climate change. There's the abandonment of the United Nations' Paris Agreement, which was based on global scientific consensus. There's the National Climate Assessment that this administration released on the Friday after Thanksgiving, Black Friday, in attempt to bury it—*but* the scientific community refused to let that happen. There's also the ample opposition to the Green New Deal from within both major political parties—without offering any robust alternatives that could actually address the scientific projections of our acceleration toward climate catastrophe.

The Green New Deal resolution is a 14-page document—double-spaced and large font; please everyone take 10 minutes to *read it* so we can all have an informed discussion about it and what the policy details to should be to make this aspirational document reality.

As a marine biologist, my particular interest in the Green New Deal is the massive role the ocean can play in both climate solutions and bolstering our economy if we (a) restore and protect coastal ecosystems, (b) invest in renewable offshore energy, (c) invest in the "blue economy," and (d) vastly expand regenerative ocean farming.

Because of science, we know that marshes, wetlands, seagrasses and mangroves can absorb and sequester up to five times more carbon per acre than terrestrial forests. We know these ecosystems also provide better and less expensive flood and storm protection than seawalls. We know wetlands prevented $625 million in damages during Hurricane Sandy. We know poor communities and communities of color often bear the greatest brunt of the impacts from climate change–strengthened storms. We know that every dollar spent now to reduce risks from disasters will save around seven dollars in damages later.

Credit: Ryan Muir.

Science also tells us the importance of regenerative farming, farming that restores ecosystems as it grows food instead of degrading them. Regenerative farming can both draw down atmospheric carbon and support biodiversity—not just on land but also in the

ocean. We know that growing seaweeds, oysters, clams and mussels near the coast would absorb tons of carbon, provide habitat, and buffer the impact of storm surges on local communities. We know a diet containing these shellfish has a lower carbon footprint than being vegan. We know adding seaweed to cows' diets can reduce their methane emissions by nearly 60 percent.

Because of science, we know to anticipate three to 12 feet of sea level rise in the coming decades. We know this sea level rise could mean *13.1 million people in the U.S. will need to migrate*. We know coastal states and cities are simply not prepared for what is coming, because we are not taking the science seriously.

Zooming out, from Project Drawdown, we know there are over 100 proven solutions to drawdown greenhouse gases and mitigate climate change. From Environmental Voter Project, we know that around 10 million registered environmentalists *did not vote* in the last presidential election, way more than enough to flip the outcome.

So let's connect these dots, between the plethora of existing solutions and our collective political power. It's not enough to be a scientist or to love science. We must be informed and active citizens. We must vote. We must campaign for candidates who value science. We must leverage the skills, dollars and networks we have. We must organize. We must follow the leads of the Youth Climate Strike and the Sunrise Movement. We must create broader and more diverse coalitions than we ever imagined possible. Most importantly, *we must build community around solutions*. Our climate, health, economies, safety and communities depend on it.

The views expressed are those of the author(s) and are not necessarily those of Scientific American.

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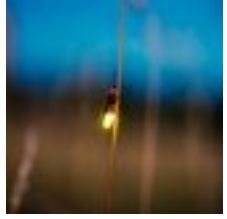

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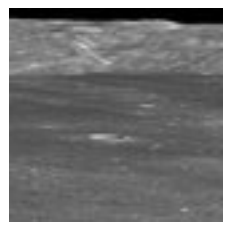

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