

# A med student's blueprint for joining the fight against anti-science

JUN 18, 2020

**Brendan Murphy**

News Writer

If there is an antidote to anti-science, Peter Hotez, MD, PhD, believes he knows what it is: more credible voices speaking in large forums.

“One of the reasons we have these anti-science movements is because we don’t have physicians and scientists talking about these issues,” said Dr. Hotez, dean of the National School of Tropical Medicine and professor of pediatrics and molecular and virology and microbiology at Baylor College of Medicine in Houston. “We are too invisible.”

Recent events, Dr. Hotez says, have made the need for visibility very apparent.

“If this COVID-19 pandemic has shown us one thing, it’s a need for physicians who are articulate and can speak compassionately to the public, write authoritatively and have really strong verbal communication skills,” he said.

As far as the future in the battle against anti-science—including misinformation campaigns against vaccines and gene editing and other biotechnologies—Dr. Hotez’s recently authored an article arguing that a new generation of “visible scientists” and science communicators is a necessity. Aspects of that advocacy and policy work can begin in medical school. Here were some of the do’s and don’ts for students looking to battle against anti-science.

## **Do: Try to amplify your voice**

Finding a space where you can articulate your thoughts is a great first step. That means looking for chances to publish commentaries in journals or on a journal’s blog site. Specific journals Dr. Hotez recommended students examine included the British Medical Journal and Lancet Global Health.

“There are many journals that have opportunities for writing commentaries or editorials or viewpoints,” Dr. Hotez said. “Oftentimes they won’t take a submission from a medical student unless it’s a specific

call for medical students to write, but that's an opportunity for you to partner with a faculty member at your medical school and write something together. I've written a number of viewpoints and editorials with medical students. Another key opportunity is to write op-ed pieces in your local newspaper."

## **Don't: Go down the social media rabbit hole**

For public health purposes, social media can be a powerful tool. That fact is evident during the current pandemic. As far as the fight against anti-science goes, if someone is entrenched in a viewpoint on social media, you can offer facts, but debate is often a waste of time, in Dr. Hotez's experience.

"There is a wrong approach to take in terms of trying to get too granular on social media," he said.

"One of the things I don't do is I don't get into fights on social media with people. I put the information out there. I may correct some factual statements, but I don't go down rabbit holes with anti-science people. Because a lot of times they are just professional trolls or even bots."

## **Do: Know where to go to affect change**

There are going to be venues on campus and in your community that are shaping the fight against anti-science. The first step for students, Dr. Hotez said is understanding the subtle differences between policy and advocacy.

In the policy arena, "almost all medical schools have an office of government affairs," he said. "Often there are two pieces to that: federal government affairs and state and local government affairs. Getting to know those people and working with them on policy issues can be very rewarding.

"The other opportunity is that sometimes there are non-governmental organizations that may be in your town. Here in Texas we have something called The Immunization Partnership while nationally there are important pro vaccine organizations such as Vaccinate Your Family. Getting involved with them can be beneficial as well."

## **Don't: Underestimate the importance of awareness**

For policy to be created around an issue, there needs to be an understanding that an issue exists and can be addressed.

"Beyond health policy is the opportunity to actually advocate for certain issues," Dr. Hotez said. "It's not necessarily around shaping policy, but to raise awareness, to get people to care about an issue, to mobilize resources for an issue, including funds. A lot of people think I'm a policy person. I do shape policy, but my advocacy activities are better known. I'm a laboratory investigator who has been

very passionate about certain issues—neglected tropical diseases, neglected health issues of the poor, around vaccines and vaccines hesitancy.

“I actually don’t do a lot of policy in terms of crafting the actual legislation or working through committee. A lot of the things I write ultimately have influence on policy, but I’m not shaping policy per se. Both activities are important and go hand-in-hand, and we need physicians and scientists who are strong in both activities.”

## **Don’t: Focus your expertise too broadly**

For Dr. Hotez, following his passions led to a career that has involved extensive public advocacy work that has included research journals, newspaper op-eds, single-authored books, and appearances on cable news networks.

“The way it worked for me was that I didn’t try to take on all aspects of either combatting anti-science or all aspects of promoting health advocacy,” he said. “It really came out of a passion as a subject matter expert, so getting familiar with an issue or getting involved in an area of expertise, I found really helpful.

“In many cases it was a response to perceived gaps, such as the need to create a space for parasitic infections following the 2000 Millennium Development Goals when these were simply referred to as ‘other diseases’. This led me and a small band of parasitologists to create the modern framework for neglected tropical diseases (NTDs), ultimately leading to access to essential medicines for more than a billion people living in poverty globally, as well as creating a non-profit product development partnership to develop new “antipoverty” vaccines for NTDs. But it began as a series of back to back articles in the Public Library of Science.

“Another example was the dramatically increasing number of non-medical vaccine exemptions here in Texas where I live and work. Here I was a vaccine scientist and parent of an adult daughter with autism, if I didn’t speak out, who would?

“If you are going to advocate for something like autism, vaccines, or neglected diseases, it’s really important that you get educated as a subject matter expert in that area because the more you can be identified as somebody that has written papers in the field who has genuine expertise, the more effective you’ll be.”