

THE CHRONICLE INTERVIEW

# What Neil deGrasse Tyson Thinks Higher Ed Gets Wrong



Michael Campanella, Getty Images

By Vimal Patel | SEPTEMBER 16, 2018

✓ PREMIUM

One of the most famous scientists in the United States thinks universities shirk a duty to communicate with the public, and, at their peril, fail to reward faculty members and graduate students for doing so.

Neil deGrasse Tyson demystifies the universe on his Emmy Award-winning TV series *Cosmos* and as a frequent guest on *The Late Show With Stephen Colbert* (he was on last week). He juggles his media celebrity with leading the Hayden Planetarium, the institution that sparked his passion as a small child, in New York City. His latest of more than a dozen books, co-written with Avis Lang, *Accessory to War: the Unspoken Alliance Between Astrophysics and the Military* (Norton), hit stores this month.

But that's not what we ended up talking about.

Tyson was more animated discussing how to explain science to the masses and ripping into what he sees as higher education's misguided incentive system, valuing research over teaching and public service and not creating space for people like him to flourish. "It's a sad fact," he says, "for the future of science in America."

As a Ph.D. student, Tyson aspired to an academic job, and even today, he says, he would walk away from his popular- science empire. If more people promoted public appreciation of science, he would "take quiet steps backwards, exit the zone, and go back

to the lab," he says. "And you'll never see me again."

Tyson spoke with *The Chronicle* about his struggles as a graduate student, how to help professors explain their research to the public, and the value to science of appearing in *Sharknado 6*.

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**You're celebrated as a paragon of public intellectualism, a high-profile advocate for science. Could you have done that from within a university?**

Everything I do that is not in a laboratory does not accrue to me professionally in academia. In my field now, we have come far enough that what does not accrue to my professional standing at least does not subtract from it.

Most of research academia, if you start going on TV and making cameos in movies, that sort of thing, it's like, Get out of academia! We don't want you here. You're not serious. There's a whole culture that does not embrace the access I have to pop culture. I have a cameo in *Sharknado 6*.

**You can't put *Sharknado 6* on your CV?**

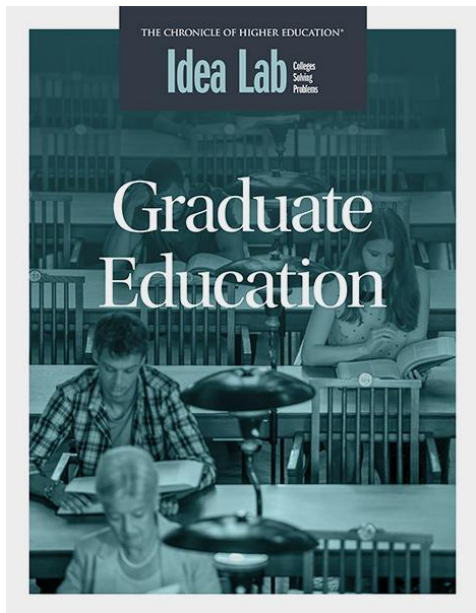
In the big picture, that has value. And I don't have such highfalutin standards to say *Sharknado 6* is below me. There's nothing below me. On my radio show, we interviewed Katy Perry. People said, Why would you waste time? She has more than 100 million Twitter followers. And if I can have a conversation with her about how science has touched her craft, then that brings science to her following. As far as I'm concerned, that adds value. None of that is valued in academia.

**Why do professors so often struggle to communicate their research to the public? And how can they get better at it?**

If communicating with the public were valued in the tenure process, they'd be better at it. This is an easy problem to solve. If 20 percent of the evaluation for tenure were based on how well you communicate with the public, that's a game changer. All of a sudden

universities open up, and people learn about what you're doing there, whether it's bird wings or paramecia.

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But in the end, universities don't really care. Put that in big letters. (I don't know if you can do that.) Oxford has a tenured-professor line for the public understanding of science. I know of no such counterpart in the United States. Cambridge has a tenured-professor line for the public understanding of risk. Where is that here? These are posts where your ability to communicate is added to your academic chops.

**How did you get to be so famous?**

I've thought about that a lot. The best I can conclude is I put in effort when I was giving press interviews. What I mean by that is that the press can ask an academic question, and you can give an answer that you might give in a lecture hall. That's not really the answer they want. It took me a couple tries, but I realized they don't want to hear my professorial replies. When I do give them such a reply, they edit it down to a sound bite.

I said, Why don't I just hand them sound bites? So I went home and practiced in front of the mirror, with friends, my wife, relatives. They'd just randomly bark out questions about the universe, and I would deliver a two- or three-sentence reply. The anatomy of a sound bite is it has to be tasty, and you have to say, Wow, I'm glad I heard that. It has to make you want to smile, and it has to be so interesting that you want to tell someone else.

**You seem to be a natural in front of an audience. I heard you even moonwalked in class as a TA. How did you approach being a brand-new teacher?**

I'd only moonwalk when it was relevant. The highest compliment you can give me is to tell me I'm a natural. Because a lot of research and work went into it. I said to myself that if you're going to throw me in front of 100 people as a graduate student, I should at least understand how people learn, how to keep them interested, how to pay attention to their attention spans, to read their facial expressions. If I'm spending brain energy trying to understand the past, present, and future of the universe, the least I can do is devote 10 percent of that brain to figure out how to communicate in the classroom. And that's what I did. I'm not a natural. I worked at it.

**Did you get any teacher training?**

No. And you want to know something else? If you're good at it, they don't look more highly upon you. So it's a mess. It's really just a mess. That's why many colleges say their classes are mostly taught by full professors. They boast that their graduate students are not in front of the class. Because in the worst case, they have no experience at all, and you as a student are learning nothing at all. You are not rewarded for being a good teaching assistant.

**As a grad student at the University of Texas at Austin, you were on the competitive dance, rowing, and wrestling teams. How did you find the time?**

You don't really find the time, you just make the time. I was already doing those activities as an undergraduate, so I just continued in graduate school. I would then learn that they counted against me. No one thought I was a serious graduate student. How could I be if I'm rowing when I should be in the lab? That created a level of conflict that ultimately pushed me to leave. I cleared the platter of those activities and finished my program at Columbia.

**A grad student once told me that she would bring two jackets to the lab, one to use and the other to drape over her chair when she left, so her adviser would think she was still around.**

Exactly. It's this culture where you're only happy when you're sad, when you're overworked. All those activities I did contributed to my socialization. I met different people, people who weren't scientists. Artists who used their bodies as instruments of expression. All of that helped me be who I am when I communicate. When I'm on stage in front of 3,000 people, I'm using my body to communicate.

**It sounds like everything that held you back as a graduate student propelled you in your career.**

Yes, but let me soften that assertion and say that I have found ways to exploit those things that previously counted against me. I have found ways to fold them back into my life in the service of my professional activities.

**When you started a Ph.D., did you want an academic job?**

Yes. To this day, I could walk away from all of this. Interacting with the public remains pretty low on the list of things I would choose to do in a day.

If I could snap my fingers, I'd have a lab, the phone would never ring, and I'd be doing research. But what I've found is that my interactions with the public trigger a kind of reaction that boosts people's appreciation of science. So I would be irresponsible if I didn't undertake those activities. I view them as kind of a duty.

**Universities have tried to diversify their Ph.D. programs, and they've made some progress, but not a lot in many disciplines, including physics and astronomy. What are they doing wrong?**

I don't have a good answer. People say, Oh, you should be a role model. I'm antirole model. I think the concept is flawed. If I needed someone with my skin color from the Bronx to have studied astrophysics before I did, I would have never studied astrophysics. What are called microaggressions today I've lived with my entire life. And if you are susceptible to microaggressions, you would have left the field long ago. I was functionally immune to them, because my interest in the universe was broader and deeper than any possible negative force could have brought to bear on it.

*This interview has been edited for length and clarity.*

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