Anna Krylov of the University of Southern California was awarded a 2023 Barry Prize for distinguished Intellectual Achievement. In this video, Santiago Schnell of the University of Notre Dame interviews Dr. Krylov about the threat of censorship in science, and the need to defend the philosophical principles upon which science depends.

Santiago Schnell, University of Notre Dame

Anna Krylov, it's a pleasure to meet you here online. My name is Santiago Schnell, and I'm the dean of the College of Science at the University of Notre Dame. I'm very pleased to talk to you because you recently received the Barry Prize from the American Academy of Sciences and Letters, which is a great honor.

I'm curious to see what your perspectives are on a few questions. What do you see as one or two of the most important challenges right now for maintaining a high intellectual standard in your academic field?

Anna Krylov, University of Southern California

This is a great question. My answer may be unexpected for someone like you who is from STEM. The biggest challenge we face is an injection of postmodern thought. In STEM, we were quite unprepared for this subversion of our field by philosophy. As we know, science has become successful when and where the enlightenment principles were developed and adopted. Practicing scientists like you and me operate by these principles without thinking about them. Many would even struggle to articulate them, but any good scientist would recognize them as true. What are these principles? Objective reality exists and therefore can be studied. The truth exists and can be discovered and understood. Claims to truth are open to scrutiny, and only those that withstand the scrutiny are accepted by the reality-based community of scientists. No one has the last word. All claims are open to scrutiny and by everyone. The biggest principle is knowledge is power. Knowledge is a good thing, and we should strive to attain it. Knowledge is good for humanity.

Now we see an alarming rise of postmodern nonsense that directly contradicts these principles. What do they say? They say those in power control knowledge. Power controls knowledge, and knowledge is used to perpetuate power. They say there is no objective truth, only multiple narratives. They say claims to truth are to be evaluated based on the identity of the scientists. It sounds like silly gibberish, and we could just have a good laugh at it, but unfortunately, these ideas are now implemented in concrete practices and policies, and these practices undermine scientific enterprise and standards.

These practices are presented to the public under the umbrella of diversity, equity, and inclusion, DEI. The connection of DEI to postmodern and Marxist thought may be obscure, but if you dig into it, it becomes very transparent. To give you an example of how this postmodern thought undermines standards, consider science communication. Very important. Science communication, in my opinion, is compromised, even subverted, by DEI. Publishing houses, at least in chemistry and physics, declare their commitment to DEI. The Royal Society of Chemistry pledged to reach an arbitrary gender quota in editorial and reviewer pools. The American Chemical Society issued a statement that diversity of authors will be used as a metric of evaluating the performance of the editor-in-chief. Authors are now routinely asked to suggest reviewers for their papers based on their race, gender, and country of origin. There is even a call to citation justice, that is, to deliberately cite more underrepresented minorities instead of simply citing papers that are relevant to a matter at hand. In a similar fashion, DEI replaces or dilutes merit in hiring and grant applications.

Research funding is especially concerning to me. Competitive, merit-based funding is a bedrock of modern science. US funding agencies were quite good at it. Proposals were judged by the merit of the ideas, the track record of the PI, and the alignment with agency mission. For example, for DOE, that would be energy. For NIH, human health. For NASA, space. Now, however, the PIs must include DEI plans in addition to a technical proposal. In these DEI plans, they must explain how their research will advance DEI goals, such as proportional representation and outcomes among various identity groups. This introducing of DEI plans into the evaluation of scientific proposals obviously dilutes criteria of intellectual merit. It creates fertile ground for corruption and social engineering. Which proposal should be given the priority for funding by DOE? The one demonstrating genuine promise in advancing solar energy research, or the one promising to involve more female students? Which one do you take? How do you weigh one against the other? Should NIH fund the best ideas in cancer research or the best plans for achieving higher representation of LGBTQ+ researchers? We know from the history of totalitarian regimes that such subjugation of science to ideology does not lead to good outcomes. The same applies to hiring. I do not need to repeat these concerns, but you see how dangerous this infusion of ideology and DEI is to maintaining standards and excellence in research and education.

Schnell

That's a very interesting perspective. Here's a follow-up question that comes from your comments. How would you describe what the mission of the university ought to be? What is important for a university?

Krylov

John Haidt, whom you know, has spoken on these issues quite eloquently, and I will just repeat what he says because I cannot say it better. He says that truth-seeking is a telos of a university. Very simple, and I agree with that. So, what does it mean? What does truth-seeking mean? It comprises knowledge production through research and knowledge propagation through teaching.

If you accept this principle as our guiding light, our polar star, the rest will follow. Making decisions on policies, investments, appointments, hiring, recruitment becomes very simple.

Unfortunately, universities are not following this principle. Universities now devote themselves to many other pursuits: money-making through tuition, athletics, and recently, all kinds of social justice, including DEI. It's all right to include some of these things. I do not think they should be forbidden, but they should be subordinated to the main goal. If you decide on things like policies, allocation of resources, you should use this truth-seeking as a razor. We can call it a hike razor. For example, does hiring an astronomically paid football coach improve our chances to find truth and to advance research? Yes or no? Are legacy admissions good for solving scientific puzzles? Yes or no? Same applies for sustainability, racial and gender quotas, DEI. Does dropping $40 million from DEI help us in our truth-seeking enterprise? Yes or no? Unfortunately, this is not universally accepted.

On the USC website you will find all kinds of platitudes, including a statement about our "unifying queries." Turns out USC has unifying queries. What are they? Truth-seeking is not mentioned as a unifying query. What is mentioned is integrity. That's okay and obvious: Cheating is bad, excellence, that's good. Then it's getting worse, DEI is purported to be among the unifying queries of our university. Well-being, how is this even relevant? We are not a hospital or some mental institution. Open communication, accountability. I argue that we do not need this mixture of platitudes, legalism, virtue signaling, political statements, and nursery rules. If you accept that the purpose of a great university is truth-seeking, that's it. This determines what we do and what we don't do. A great university doesn't need anything else. No cultural journeys, no unifying queries, just commitment to the main goal.

Schnell

After hearing your answers, some people might think that you are negative about what's going on in the university. So, I have a follow-up question. What do you think universities are doing well right now in balancing the pursuit of knowledge for its own sake? Will they decide to make knowledge more useful to the world so they can make an impact? What do you think universities need to improve in different areas?

Krylov

I definitely do not want to sound negative. The reason I point out concerning issues is because I see how some excellent things that universities are doing are undermined by them. American universities are still very strong in delivering good science. We know that science is essential for humankind to thrive. We know that science is a foundation of technologies that deliver food, energy, medicine. We benefit now, you and me, our friends, children, and parents from scientific progress that improves human conditions worldwide, including higher standards of living, lengthened lifespans, eradication of deadly diseases and famine. Science is doing it, and science can deliver because there is good science done in American universities among other places, and smart people are dedicated to science and they deliver transformative research.

It's important to remember that if you look at the history of science or the current state of science, it's very easy to see the transformative advances, these great things that we benefit from. They come from fundamental, curiosity-driven research. One of the strengths of American universities is that curiosity-driven research was cultivated and supported. To give an example, how do nuclear spins interact with magnetic spins? Does it have any direct implications? When people asked this question, they didn't know. They didn't have this in mind, but this research was supported and now we have MRI and GPS and many wonderful technologies. What exactly makes jellyfish glow? You could class this question as silly, but it was an example of curiosity-driven research that led to breakthroughs. Now we have this amazing tool in bioimaging that allows us to see what happens in live cells in real time and in live animals, including humans. We have the bioimaging revolution, we have photodynamic therapies, and so on.

It all comes from universities and from fundamental research funded by experts in the United States and in other countries. We must continue to support this type of research. This is really important. Where we are with it now, US science is still good and strong, but I do see some worrisome signs that take us, in my opinion, in the wrong direction, and we need to be aware of them. Administrators at universities and funding agencies are increasingly taking the role of managers of research, or in plain English, telling scientists what to do, what to study, and what not to study. We see the growth, explosion of all sorts of initiatives supported by separate pots of money: big initiatives on sustainability, quantum information science, AI. These are not bad applications, these are good goals, but we should be very careful not to put the immediate goal of achieving an immediate outcome before the principles of fundamental research. We should maintain this focus on fundamental curiosity-driven research and understand that great technological advances will come out of it, even if we do not put them in our plans beforehand.

Schnell

We have to look at the purity of knowledge and knowledge for its sake, and applications might appear in the future, so you never know where you're going to make discoveries that will make an impact.

Krylov

You do not know, and it's very arrogant to assume that a bunch of bureaucrats advised by a committee of scientists terrified by the prospects of losing funding will somehow identify this new moonshot, as they call them, or Holy Grail problems, or grand challenges. It's just arrogant.

Schnell

You have expressed a lot of controversial ideas here, and maybe some people are going to be interested in learning more about those. I understand that you wrote an article about these ideas. Where can people find it so that they can learn your perspective?

Krylov

It's ironic, some people made fun of it. We wrote a paper with what you would consider a mundane title, "In Defense of Merit in Science," where we make very simple statements of the

types that I mentioned today, but going a little bit deeper. We couldn't easily find a place to publish this paper. We tried different venues, and ultimately the paper was published in the *Journal of Controversial Ideas*. There is such a journal, which entertains *really* controversial ideas, and merit apparently falls into that category. I find it's quite disturbing that some basic principles of enlightenment, meritocracy, liberalism, classical liberalism are classified as controversial and need defense.

We published a paper in *European Review*, documenting this corruption of publishing and what is actually happening in publishing houses, which is in the open. We didn't have to send undercover agents; it's all on the journal website. The same applies to funding. You can see what is happening in funding, and you do not need to do any detective work, just read the requirements for submitting proposals to these agencies. It's scary.

Schnell

People should read the article in the *Journal of Controversial Ideas* and learn more about these ideas that you have expressed today. Let me congratulate you again on receiving the Barry award; it's a major achievement.

Thank you; it was a pleasure talking to you.

Krylov

Thank you, the pleasure is mine.