

Nobel Laureate Arieh Warshel of the University of Southern California was invested as a member of the American Academy of Sciences and Letters in 2024.

In [this video](#), Academy Executive Director Greg Forster interviews Dr. Warshel about the reasons people want to control what science finds, ways peer review could be reformed, and how universities can take steps to encourage open inquiry.

### **Greg Forster, American Academy of Sciences and Letters**

This is Greg Forster with the American Academy of Sciences and Letters. Today I have with me Arieh Warshel of the University of Southern California. Arieh, thank you so much for being with us.

### **Arieh Warshel, University of Southern California**

You're welcome.

#### **Forster**

Let me begin by asking you, what are some examples of people in your field who have shown intellectual courage?

#### **Warshel**

What comes to mind are mainly people in the COVID time. Some people at Stanford challenged the government or the government-held view and faced major retribution by the NIH. Though it was a few years ago, this was what could be defined as intellectual courage because the chance of losing funding is a very severe penalty for scientists. You should weigh the courage versus what will be the response.

#### **Forster**

Thank you. Yes, we were so impressed with Jay Bhattacharya that we gave him our Zimmer Medal for Intellectual Freedom last year for standing up to exactly that kind of pressure.

#### **Warshel**

Yes, and this was very impressive and I think very difficult. There was something similar in the HIV time, but I don't recall the details. I just remember that somebody challenged Gallo and fought with him. If you are not in a strong position, it's easy to make you look crazy. This is one of the risks.

#### **Forster**

Science has always created a lot of power, and that means people want to control what it finds.

#### **Warshel**

Yes, and a lot of people are afraid and sometimes rightly so.

#### **Forster**

Right, and fear does not help them think more rationally or act with more self-control.

**Warshel**

They might think rationally but not necessarily act with self-control. When people express themselves, there is always a risk, like when I write my first response to a referee report, it's usually extremely nasty and then I have to wait and rest a little when I want to call the editor.

**Forster**

I have written a few of those responses myself, and I'm glad that I wait and revise them before I send them. That is wise policy.

Let me ask you my next question. What do you think are one or two major challenges to maintaining high intellectual standards in your field?

**Warshel**

Among the main ones is the referee system, when you write something new and get a negative response and have the editor against you. People write that this has lessened now, but actually it continues in the same way. It is a problem to propose a new idea and to establish it; it's extremely easy to stop you from doing it by writing a negative referee report. Then the editor is not interested in the detail or the facts.

I had a suggestion, but I was told that it would make people less happy to be referees. There should be some logical judgment. In my case, regarding several papers I was told that what was said against me was never said. I had it in *Science* and *Nature*, where people denied what they said, and then I sent 20 abstracts, like on protein dynamics, showing what they actually said. Once I was told by *Science* that I could not say that the referee was lying, because it's not polite.

My suggestion is to develop a mechanism for disqualifying a referee whom you discover has misled the editor twice. It was never implemented, and editors would not like it, but not being able to block publication, regardless of historical precedent, would contribute to the progress of science. Lawyers might say that this cannot be done. But if you establish that the report against you is malicious, you just remove this referee. I have suggested this many times, but no editor has implemented it.

**Forster**

I help edit a peer-reviewed journal myself, and I agree with you. Finding reviewers who will act in good faith is vital to the enterprise. If the reviewers are not acting in good faith, your journal is not going to be holding up standards the way it ought to.

**Warshel**

My suggestion would go a little beyond this. If you establish that a referee has said something that you know is wrong, then the given referee would be disqualified. This would be a great step.

**Forster**

It seems like a very fair proposal. I wonder what it says that people don't accept it, but perhaps we had better not think out loud about that question.

Let me ask you my last question. Where do you think the public has a good understanding of the mission of the university, and where do you think the public has a less good understanding of the mission of the university?

**Warshel**

The public understands that this is a learning place. What is being learned is not so clear to the public. The problem is not necessarily with the public but with the university. Instead of teaching basic science or basic literature, they spread propaganda. The public has heard in recent years about when a university tries to keep one side from being heard, or when guest speakers are not allowed to speak. This is a problem that the university should control, and the public should try to force the university to do it if the university is not willing. The issue is more what the university is doing. The public should be aware that you should study in the university, develop your curiosity and not be bombarded with propaganda. I want the public to be aware of it, and it's not so simple a task.

**Forster**

Yes, unfortunately, everybody thinks that their view is open and intellectual and well-founded and rational, and any disagreement is propagandizing. There is real propagandizing, but where do we find the people who will fight for a genuine open inquiry?

**Warshel**

One way is, when one group invites an external speaker, the university cannot let the opposing people stop him from speaking, which has been very common. It is relatively simple, to allow everybody to invite people who reach in one direction. Even if others don't like it, they shouldn't be allowed to block it. It's really free speech with university protection.

**Forster**

Yet the university spends a lot of money on things that are not central to its mission. You would think security for controversial speakers would be a very high priority for its mission.

**Warshel**

Yes, absolutely. And I hope that it's changing a little, but I'm still not sure.

**Forster**

Well, we will see where things go. Arieh, thank you so much for being with us.

**Warshel**

You are very welcome and thank you.