

U.S. Senator Maria Cantwell

Senate Energy and Natural Resources Hearing to Examine Recent Advances in Artificial Intelligence and the Department of Energy's Role in Ensuring U.S. Competitiveness and Security in Emerging Technologies

September 7th, 2023

Sen. Cantwell Witness Q&A

Witnesses:

- **The Honorable David M. Turk, Deputy Secretary – U.S. Department of Energy**
- **Dr. Rick L. Stevens, Associate Laboratory Director, Computing Environment and Life Sciences – Argonne National Laboratory**
- **Ms. Anna B. Puglisi, Senior Fellow, Center for Security and Emerging Technology – Georgetown University**
- **Mr. Andrew Wheeler, Fellow & Vice President, Hewlett Packard Labs and HPC & AI Advanced Development – Hewlett Packard Enterprise**

[\[AUDIO\]](#) [\[VIDEO\]](#)

Sen. Cantwell: Thank you, Mr. Chairman. Thanks for holding this important and timely hearing.

Over the recess, I held an A.I. forum in Seattle Pacific Northwest Laboratory, it showcased its rapid analytics for disaster response, a tool that is a detection system for all hazards and important. It was used to assist in both Ukraine and in some of the Maui aftermath.

Others in the Allen Institute for A.I. Environment have demonstrated how they are using satellite imagery to improve wildfire management. Really important for us in the Pacific Northwest. Also using it to detect illegal fishing in our maritime sector, a very important issue to us in the Pacific Northwest. And enforcement and surveys of our land for conservation purposes.

So, we need to invest, I believe, in more innovation and that's why we obviously are supportive of what happened with CHIPS and Science and now with A.I. for our competitiveness.

The United States cannot slow down on A.I. as it relates to our competitiveness internationally and for national security reasons. So, our national labs have assisted us in supercomputers, [and] reliable and robust data sets. The U.S. Department of Energy international labs are essential to our leadership in artificial intelligence.

So, I wanted to ask our panelists. You spoke about the need for U.S. leadership in this issue, Deputy Secretary Turk, and also, I believe, Mr. Stevens, you mentioned lab supercomputers are positioned to create the tools for risk assessment to evaluate A.I. systems.

So how do we get both NIST and DOE working together on these tool assessments in determining what are true risk assessments, so they're identified?

And what do we need to do to help build a workforce, particularly, in skilling the workforce for A.I. and either one, Dr. Stevens or Mr. Turk, either one of you want to start?

Deputy Secretary Turk: Go ahead, Professor. You start and I'll clean up.

Dr. Rick Stevens: So, we're having good conversations with NIST about partnering in how to take the assets of the DOE and connect them to the analytical and conceptual framework that NIST has been working on for A.I. risk management. So, I think that is an ongoing conversation.

They're participating in working groups that we've established consortia across the laboratories that are working on how we will do risk assessment for large A.I. models. So, I believe that part is already moving, and I feel quite positive about where that's going.

In terms of the workforce, I think young people are hungry to work on A.I., you don't have to encourage them. All you have to do is say, here's an opportunity and they're there. I mean, our courses, any course at any major university that's on A.I. is going to be oversubscribed.

So, I think what we have to do is we have to provide enough resources that any students in the U.S. that wants to make a meaningful contribution to A.I. in the national interest, has an opportunity to be funded, to go to school, to go to graduate school, to do internships and to participate. And that's going to require multiple agencies cooperating on that.

DOE, of course, supports students and supports student internships, but in a very limited number. NSF, of course, can do it in a much larger number, but other agencies as well. We need a coordinated national strategy to build an A.I. workforce and we need some leadership to organize that.

Deputy Secretary Turk: Yeah, just two things to add.

One, boy, what a gem we've got when it comes to AI and everything else in the Pacific Northwest National Lab, whether it's some AI on a drought study or with vaccine development, like there's example after example coming out of that lab, of course, working with Argonne and others of our national labs as well.

I think the interagency partnership here is going to be absolutely key. Professor Stevens outlined what we're doing with NIST, and we need to do even more with NIST on the risk framework along those lines. But it's NOAA, it's agency after agency that we've got good partnerships with.

And I think because we have the exascale computing power, because we have data, because we have these other facilities that you, not only with your role in this committee but your role as chair of the Commerce Committee as well, have been working for so many years to make sure we've got these capabilities that can help work with partners throughout the interagency. And we just need to leverage that, we need to take full advantage of that.

Sen. Cantwell: And do you agree with Dr. Stevens about the workforce issue?

Deputy Secretary Turk: I completely agree and rightfully for you to focus on this, Senator Hirono asking questions about this. We all need to focus on the workforce, and I know I've talked to a number of folks, they want to work on A.I. and they also want to work in private sectors. Great. And we need talent in

the private sector. But they also want to work in the government and take on some of these public challenges as well. We just need to make it attractive to them in all sorts of ways so that we can compete.

Sen. Cantwell: Thank you, Mr. Chairman.