

MEMBER DAY HEARING: HOUSE COMMITTEE
ON SCIENCE, SPACE, AND TECHNOLOGY

HEARING
BEFORE THE
COMMITTEE ON SCIENCE, SPACE,
AND TECHNOLOGY
OF THE
HOUSE OF REPRESENTATIVES
ONE HUNDRED NINETEENTH CONGRESS
FIRST SESSION

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**MEMBER DAY HEARING: HOUSE COMMITTEE
ON SCIENCE, SPACE, AND TECHNOLOGY**

TUESDAY, MARCH 11, 2025

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, D.C.

The Committee met, pursuant to notice, at 10:03 a.m., in room 2318 of the Rayburn House Office Building, Hon. Brian Babin [Chairman of the Committee] presiding.



COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

HEARING CHARTER

“Committee on Science, Space, and Technology Member Day Hearing for the 119th Congress”

Tuesday, March 11, 2025

10:00 a.m.

2318 Rayburn House Office Building

Purpose

The purpose of this hearing is to satisfy the requirements of H.Res.5, section 3(r), which requires the Committee to hold a hearing at which it receives testimony from Members, Delegates, and the Resident Commissioner on proposed legislation within the jurisdiction of the Committee on Science, Space, and Technology.

Witnesses

- **Hon. Bill Foster (IL-11)**, Member, U.S. House of Representatives.

Chairman BABIN. The Committee will now come to order. And without objection, the Chair is authorized to declare recesses of the Committee at any time.

Welcome to the Science Committee's Member Day Hearing for the 119th Congress. And I recognize myself for 5 minutes for an opening statement.

Good morning, everyone. Welcome to the House Science, Space, and Technology Committee's Member Day Hearing for the 119th Congress. I appreciate our colleague's efforts today to share his interests and priorities within the Committee's jurisdiction. His willingness to voice his constituents' concerns is critical in shaping our discussions and enhancing our collective efforts. As I have said before, the spotlight is on us, folks. The world has never paid as much attention to the matters within this Committee's purview as it does right now, and we are ready to lead the charge.

We have a full agenda ahead, and I'm confident that, through collaboration, we will make significant progress in maintaining America's leadership in science and technology. This includes our commitment to propelling humanity into new frontiers by advancing space exploration, driving scientific discovery, and spearheading cutting-edge technologies in fields like quantum computing and artificial intelligence (AI).

With several important hearings already behind us, we look forward to advancing our legislative efforts soon. Together, we will endeavor to ensure America remains a global competitor at the helm of these crucial issues, so let's continue the great work.

[The prepared statement of Chairman Babin follows:]

Good morning, everyone. Welcome to the House Science, Space, and Technology Committee's Member Day hearing for the 119th Congress.

I appreciate our colleague's efforts today to share his interests and priorities within the Committee's jurisdiction. His willingness to voice his constituents' concerns is critical in shaping our discussions and enhancing our collective efforts.

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With several important hearings already behind us, we look forward to advancing our legislative efforts soon. Together, we will endeavor to ensure America remains a global competitor at the helm of these crucial issues.

Let's continue the great work!

Chairman BABIN. I now recognize the Ranking Member Lofgren for 5 minutes for her opening statement.

Ms. LOFGREN. Well, thank you, Chairman Babin, and for today's hearing. I look forward to hearing from Members, I think—or at least a Member—on priorities for the Science, Space, and Technology Committee.

With science at the forefront, we do have a responsibility and opportunity to support Federal R&D (research and development) to help us build a bright future. We have to continue to promote innovative solutions to challenges we face, build our STEM (science, technology, engineering, and mathematics) workforce, push for de-

velopment and deployment of new energy technologies, strengthen domestic manufacturing, and explore the unknown.

These topics shouldn't be partisan issues, and I hope we can continue the very long tradition in this Committee of working toward bipartisan consensus. That is a tradition of the Science Committee that goes back many decades, and it's really the only way we can address these critical issues in a meaningful and thoughtful way.

I would like to note, as we did last week, the loss of our Member, Mr. Turner. He did not serve with us for a long period of time on this Committee, but he served with us well. Arrangements are being made this Saturday for his services, and we will make sure that all the Members of the Committee have that information. I know schedules are established far in advance, but in case that is possible for anyone who wants to honor him with their presence.

I would like also to note that we—we're serving here at a tumultuous time, but the focus I have had on this Committee, on three particular issues remain enormously important, not just to me, but I think, to our future, and that is AI, quantum computing, and fusion. And the three areas work in a synergistic way. And if we actually succeed as we hope, they will have a profound and positive impact on our world.

So with that, Mr. Chairman, I'm happy to yield back.

Chairman BABIN. Thank you very much. And I also noticed the flowers as well that my colleagues have displayed in memory of our lost friend, Congressman Sylvester Turner, who we lost last week. I'd like to reiterate how much I appreciated working with Mr. Turner over the years while he was the Mayor of Houston, and I looked very much forward to having him on this Committee. He was a true gentleman, and I continue to pray for his friends and loved ones during this tragic time, and we will miss him.

OK. Other Members are welcome to submit written statements for the record.

And our colleague, Mr. Foster from Illinois, is now recognized to present his testimony.

**TESTIMONY OF THE HON. BILL FOSTER,
A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF ILLINOIS**

Mr. FOSTER. Sure. Well, thank you, Chair Babin and Ranking Member Lofgren. And I echo your thoughts on Representative Turner.

You know, and I also congratulate you on having your turnout here. You have 100 percent of the Ph.D. physicists in Congress to—will be presenting testimony here. And so I'd like to start.

As most of you know, I spent 25 years at the national lab, Fermi National Accelerator lab, and spent years as the Co-Chair of the National Labs Caucus touring, taking Members of Congress on tours of the national labs. We got more than halfway through when COVID put a halt to it. But when Members actually see what's at the national labs, it is transformative to the way they think about the science enterprise of this country. And so I'll be moving forward legislation to try to firm up the infrastructure investments that are essential to that—to making that go forward because without the critical infrastructure that's frankly decaying in many areas, the

national labs cannot keep up their incredible work that they do to keep the United States at the vanguard of scientific discovery. And you had a very good hearing with the Directors of several of the national labs, and that's an excellent start to this.

The Ranking Member mentioned artificial intelligence, and the staff of the Science Committee in particular had a huge role in the AI Task Force that was really—you know, may end up being one of the most important things that happened in the last session of Congress, that this is coming at us, you know, like a freight train, and we're not ready for it.

If you just look at what—the announcement recently about the Google co-scientist that really, you know, outperformed a small research group and—the work output of years of a small research group in 36 hours and came up with new ideas for future research. The thing that you thought would be the last bastion of human creativity was—actually appeared to be outperformed. And this is an early version of AI agents that will be not only executing the hands-on work of science but actually doing the strategic planning of it.

And so we cannot be in second place on this because the country that wins AI is going to have an infinite supply of very smart, very well-educated at-home remote workers is one way to think about it. But they're also going to have robotics to execute the hands-on research. And it's a big deal. And I think NIST (National Institute of Standards and Technology)—it may be that the oversight over NIST, which has traditionally been the lead institution on this, is maybe the most important thing that you have to look at.

You shouldn't overlook traditional things like NASA (National Aeronautics and Space Administration) because, you know, I think we've learned in the last decade that when we have sort of comfortable incumbents with large market share, they don't perform efficiently, and I think we may be in danger of having a near monopoly on launch coming up again. You shouldn't let that happen. You know, you're going to have to take a hit in short-term economic efficiency to make sure you have multiple competitive vendors and keep an eye on that one because you don't want to just replace one, you know, not-too-productive incumbent with another.

This—one of the big things that you struggle with on this Committee is that you're an authorization Committee and that you get thwarted by appropriators. You know, we saw an example of this with the *CHIPS and Science Act*, which was—the concept of that was we're going to double the science budget over a decade or so and that, because of the additional budget that was available under that hypothesis, you could increase the scope of things like the National Science Foundation (NSF). And so you—we—you know, we authorized a number of new missions, and in fact, mandated that they do it, but then, in fact, we did not double the budget.

And so this is viewed, frankly, by a lot of Members of—you know, scientists who work under NSF, the—that this was viewed, in the end, as a net negative for—the *CHIPS and Science Act* was viewed as a net negative for NSF-supported scientists because it was an unfunded mandate, basically. You had to do all these new missions on a flat budget. And it was as destructive as when, geez, 20 years ago, I guess, George Bush came in and showed up at NASA unan-

nounced and said, hey, we're going to Mars on a flat budget. Because one of the most destructive things you can do to any organization is to give them—you know, give them a goal that they really want to accomplish and then not give them the resources to do it. It's just—you know, it's sort of a soul-crushing thing to watch all of your milestones fail to be met and so on.

So one of the things that you should be thinking about is how to reclaim the authority from the Appropriations Committees. You know, if you look at why the United States spends such a small fraction of money on science, it is not because we do not authorize the spending. It is because we do not appropriate it. And I think there's actually a cultural problem between the Authorization Committees, you know, that look at a field every 10 years and say, where should this field be in 10 years, a long-term view of things. The appropriators are all about, you know, what goodies can I give out this year. And so they have a very short-term view of things that causes us to systematically underfund long-term things like education and science. And so you have to—we have to, as an institution, learn to fight back against that tendency.

And I believe I am now out of time, happy to answer any questions on any of these issues.

[The prepared statement of Mr. Foster follows:]

Congressman Bill Foster (IL-11)*Members' Day Hearing: House Committee on Science, Space, and Technology*

March 11, 2025

Thank you Chair Babin and Ranking Member Lofgren for the opportunity to testify today.

Today, I'd particularly like to talk about some of the science and energy research infrastructure needs of the Department of Energy. I'd like to focus on the deferred maintenance, critical infrastructure, and modernization needs of the Department of Energy National Labs. These are the fundamental investments ensuring that the literal buildings of our labs are kept standing and up to date. Without this critical infrastructure, our National Labs cannot keep up the incredible work that they do to keep the United States at the vanguard of scientific discovery. I am planning to introduce legislation to support this effort. I expect it will be referred to this committee, and would love to collaborate with any Member of this Committee interested in supporting our National Labs.

I'd also like to take some time to urge this Committee to actively support our federal scientific workforce. During my previous time on this committee, as Chair of the House Science Committee Subcommittee on Investigations and Oversight, one of the first hearings I held was on the damage done to our nation's scientific enterprise by the first Trump Administration. The statistics were concerning: there were significant losses in key STEM positions at the DOE, the EPA, and NOAA—including a 20 percent reduction in the DOE Office of Nuclear Energy.

The departure of so much scientific talent and institutional knowledge from the federal government represents a permanent competitive disadvantage for the United States. It is our duty to ensure that, regardless of the political climate, science remains at the forefront of our nation's progress and innovation. One particularly useful tool is to also make sure that we support scientists

who come to the U.S. for their education and want to stay and contribute their skills to our economy. During my two decades at Fermi National Laboratory, some of the brightest and most accomplished scientists and engineers I had the privilege to work with came from foreign countries. These researchers are a fundamental part of our entire scientific workforce, including at our National Labs. Though it is outside the jurisdiction of this committee, I welcome your support on my Keep STEM Talent Act, which eases the path to a green card for professionals with advanced STEM degrees.

Finally, I'd like to urge you all to continue your focus on Artificial Intelligence. As a member of last Congress' Task Force on Artificial Intelligence, I was truly impressed by the bipartisan progress we were able to make on this important topic. This was thanks in no small part to the efforts of our Chair, Rep. Obernolte, and co-chair Rep. Lieu. It was also due to the support of the House Science Committee, and the depth of knowledge on the staff here, which allowed us to make actual progress on understanding what Congress can do on AI. This is an area that is in particular need of Congressional input and leadership.

Thank you again for your time today, and I yield back.

Chairman BABIN. Yes, sir. Thank you very much, appreciate that.

And our next—I recognize myself for questions for 5 minutes. And, of course, you're the only witness we have in here today, Dr. Foster, so this will be directed to you for your testimony here today.

I appreciate your comments on modernizing the Department of Energy (DOE)'s National Laboratory infrastructure. The Energy Subcommittee just held a hearing with several of the National Lab Directors last month. Having NASA's Johnson Space Center in my district, I understand the importance of maintaining key and aging Federal research facilities. In your testimony, you mentioned a legislative effort to address your concerns in this area. How would that effort align with the already-established Science Laboratories Infrastructure program at DOE, the SLI?

Mr. FOSTER. Well, it's a—boy, I have to go—it is—I actually don't have the specifics of that in front of me. It—you know, there are—there have been a number of efforts to just specifically look at—let's see how to say this. This gets into a discussion that's similar to the discussion about the overhead that should be charged for Federal grants, that you have a core mission, and then you have to—if you're at a university or national lab, you have a core mission with specific projects, and then you also have the need to maintain the flywheel of this so that between the boom-and-bust cycles of getting this project approved and having it sort of fade away and the funding complete, it is difficult to manage your workforce, and it's difficult to manage your infrastructure. And so one of the ways to do that is to fill in the boom-and-bust cycle with infrastructure improvements on that. And that is—that's sort of the idea behind this—these legislative efforts.

Chairman BABIN. Absolutely. Thank you. And I now recognize the Ranking Member for 5 minutes for her questions.

Ms. LOFGREN. Well, thanks very much, Mr. Chairman.

Dr. Foster, as you mentioned, you are 100 percent of our physicists here in the House. You also—

Mr. FOSTER. I used to be 33 percent—

Ms. LOFGREN. I remember that well.

Mr. FOSTER. We had Vern Ehlers and Rush Holt.

Ms. LOFGREN. That's correct. But now we have you, and we're glad that we do. You worked at one of the Nation's premier national labs, Fermilab. And as someone who was part of that high-skilled scientific workforce, I wonder if you could comment briefly on the long-term effects, if any, that could result from the chaos that is currently happening at our top science and technical agencies like DOE, NIST, NSF, and NIH (National Institutes of Health), where people are randomly being fired, rehired, apparently, now targeted for potentially more firings. Will this cause lasting damage to our ability to innovate in your judgment?

Mr. FOSTER. Well, you know, the tough thing is, when you're deciding where to place your career, if you're a young, talented, and well-educated scientist, you know, you have your choice. You know, you can go and work in private industry. You can work at national labs. You can work other places. And if national labs or the government generally turns out to be a place where you can't have a se-

cure future, then that makes it really hard to hire people. You know, if you find that all of a sudden you're raising a family near the—near an institution, and then all of a sudden it's announced that, oh, we're going to move you into the middle of nowhere or you lose your job, you know, that's pretty—makes it pretty hard to raise a family when that happens. It's fine if you, you know, over time, reposition your workforce. You have to do that. But jerking it around randomly and rapidly and without, frankly, a lot of thought, is very destructive because then people just, you know, say, OK, I will take my other options here. And that's going to—it's going to make it hard.

The thing that—one of the things that worries me the most is, you know, what happened to the NNSA (National Nuclear Security Administration) where they had—you know, these are people that have devoted their lives. And, you know, when—one of the things that happened when I looked behind the wall as part of the National Labs Caucus, you went and visited the weapons labs, and you saw these scientists who had given up—you know, brilliant people who had given up the possibility of having tenured jobs at top universities to make sure that we had a reliable weapons system.

And then when you see that those sort of people, and particularly the young people who decided to go into that are threatened with having their jobs ripped away, you know, why would you possibly do that in the future? And it means that when we have really critical weapons systems where you have to spend your life working in secret on them, why would you do that? And it's already a tough sell when you're trying to get the weapons labs to hire top scientists, and this has made it incomparably worse.

But the other thing—workforce thing that really worries me is the attitude that—toward immigrants that seems to be just permeating our country right now. You know, we talk about, oh, how great it is, you know, the Apollo program, you know, good old American knowhow, like good old Americans like Dr. Wernher von Braun and all the brilliant German engineers that actually built the Apollo program or at least guided it. You know, we have this—you know, we're looking at SpaceX by that—should I say it, Mr. McCormick, or not? When you referred to the leader of SpaceX is an African American, but he's a—anyway, that was, I thought, quite amusing.

But it was—but this was—you know, I mean, we are—our scientific enterprise, particularly, is built by immigrants because when people around the world, you know, are the smartest kid in their class in the middle of some country that doesn't have a scientific enterprise, their dream is to come to America—used to be to come to America. Now, they look to Europe. You know, we've seen that in high-energy physics where, a decade ago—now, probably 30 years ago, the United States was—you know, we were in the process of planning and building the Super Collider, which maybe those of you from Texas may remember. And then that was canceled because of things that happened in Congress, frankly. And, as a result, the next generations of high-energy particle physics—physicists now want to work in Europe instead. And so these

are fragile operations, and we have to treat them with respect and give them some continuity.

And I know that there's a danger that scientists end up coming to you like just another special interest group. It's a little bit different because of the long-term benefit that they provide our country.

Ms. LOFGREN. I just don't—my time is up, but Idaho labs did an analysis and said that, in their judgment, roughly 85 percent of GDP (gross domestic product) growth was directly connected to science and technology innovation. We don't need to lose that.

Mr. FOSTER. Oh, absolutely.

Ms. LOFGREN. I yield back, Mr. Chairman.

Chairman BABIN. Thank you. I now recognize the representative from Georgia, McCormick.

Mr. MCCORMICK. Thank you, Mr. Chair. It's refreshing—

Mr. FOSTER. My apologies for outing you on that. I thought it was just—we need some humor in this.

Mr. MCCORMICK. You know, sometimes that's the only thing that keeps me going. In the military, we use humor to deal with our depression all the time. And Elon Musk is indeed an African American by all rights.

One thing I wanted to point out is it's actually refreshing to work with a Member of Congress who's so well educated. Sometimes we forget that in Congress it's supposed to be our best and our brightest, the people who are innovators, the people who have real ideas. You're actually one of my favorite people on the other side of the aisle to work with because I think you have some really refreshing ideas that solve real problems that actually we can agree on.

One of the things I loved about your ideas was your digital ID, your—basically, whether it be biometrics or however you wanted to do that where we could actually have voter accountability and solve fraud at the same time. It's a bipartisan issue.

Mr. FOSTER. Yes.

Mr. MCCORMICK. Nobody should be against that. And I think that's one of the things I really love about you. You approach it from a pragmatic, realistic, scientific, and factual basis, which we can all agree on. I think we all want to do something that matters and have everybody count in the way that they're supposed to and make sure we have progress. And I actually like what we just talked about. This is the real growth area we can have not only for accountability and saving a lot of waste, fraud, and abuse but also in real growth of economy.

Mr. FOSTER. Yes.

Mr. MCCORMICK. What couldn't we like about that? So I'm looking forward to working with you.

Mr. FOSTER. Yes, well, thank you. And I think McKinsey estimated it was a little over 2 percent of GDP was the growth when a country adopted a secure digital ID.

But it's also important to acknowledge NIST. You know, the technology that enables that that's in your cell phone and allows it to be presented and allows Apple and Android to work together on this for things like digital driver's licenses or the digital ID that every E.U. citizen is going to have, I think, by the end of next year, that this technology was all developed by NIST over a decade ago.

And so it's an example of these things where a relatively small group at NIST thought about a problem that was going to be important in the future, realized that you need technical standards and to just think through how it was going to work. They set it up. They—and the standards were adopted by NIST. Those were adopted by the International Standards Organization, and then countries around the world are using that.

Countries around the world are very envious of the—of NIST. It's really interesting to talk to them. They said, I wish in the E.U. we had something like NIST because we don't.

Mr. McCORMICK. Well, I look forward to working with you. I hope you would learn to use small words so Marines can understand it too, but I really enjoy this. Thank you.

Mr. FOSTER. Thank you.

Chairman BABIN. Thank you. And now I'd like to recognize the Representative from Maryland, Mrs. McClain Delaney.

Mrs. MCCLAIN DELANEY. Thank you, Rep. Foster. I really appreciate your comments. And, you know, I really think I agree with our Chair. You know, I really like your commitment to actually scientific thought leadership, and I agree with almost every comment you made and noted. We do need to not only authorize but appropriate thoughtfully and strategically. And I actually say this because I was—I served in the last Administration and was No. 2 at NTIA (National Telecommunications and Information Administration), and we did a lot of research and innovation as well on the spectrum arena and also with our data protocols.

Actually, just kind of lifting up, I am—I really think that we need payoffs and innovation in driving public partnerships. And in Maryland I do represent NIST, which I think is one of our Nation's jewels and around the world is respected, as well as, you know, parts of NIH and the National Institute of Cancer, and Fort Detrick.

And I am so concerned about potential cuts and freezes to staffing because, actually, as I look ahead and, you know, proactively thinking about how commerce looks at these, you know, it will really actually impact our national security and some of our innovation.

Two things I'd really like to see. How do we better interface, do you think, as authorizers and appropriators with some of these agencies in terms of figuring out ways to drive innovation strategically over the long term? Because you see China as these, you know, 50-year plans. How do we figure out a best means to really invest in some of these agencies and researchers and scientific thought leaders so that we can really support them, but also use those to drive public partnerships—public-private partnerships.

Mr. FOSTER. Well, I think there's a structural problem in Congress. If you look at the—our modern economy and the structure of Congress, they just—you know, we're like a snapshot of what our economy looked like 100 years ago. You know, for example, information technology just passed financial services as a fraction of the GDP, and shortly, it's going to pass healthcare to be the largest single sector. And yet, we do not have a full standing Committee on information technology. And so that, if you just would look at our economy now, you'd say, well, healthcare, that's 20 percent of

GDP, full standing Committee; science and energy, 20 percent, that's a full standing Committee; information technology, you know, financial services, you know, a set of hunks that are 20 percent of GDP would make sense.

And—you know, and in contrast, if you look at—well, I'll pick on agriculture. You know, agriculture is under 1 percent of GDP, and yet, to put it in congressional terms, they have all the good office space. And so it just—you know, we are not mapped onto the modern economy properly. Well, there's a second structural problem is that there's a Byzantine association of authorization and Appropriations Committees, and that doesn't even get to the Senate.

So I think that what's needed there to make us more effective is to just have a bipartisan group set up and say not what we're going to do next year, but where do we want to be 10 years from now so that people can plan their careers in Congress and the Senate, to map their seniority onto where they want to be. So if you got elected because you care about healthcare, you have a home for that. If you got elected because you care about science and energy, there's a home for that, or financial services, or wherever you want to be, that I think that something like that, it's not going to fix things next year, but if there was a—if everyone knew that, 10 years from now, we will have a rational organization, that would make us be the single biggest step forward. And everyone 10 years from now will really thank us.

Mrs. MCCLAIN DELANEY. Leading on, is there any investments you think that we—particularly the AI and quantum computing fields as—because I see—and I note Rep. Lofgren had said that Idaho labs, my home State of Idaho, you know, 85 percent of GDP is growth from these types of issues. Like, what do you—what—how would you envision—and I know at NTIA—and I do know that NIST is doing a lot in that arena. How can we better support that, do you think, on the Hill?

Mr. FOSTER. Well, I think it's going to be very difficult for the Federal Government to put the—an amount of money comparable to what the private sector is putting into AI. That's just a fact, and we have to plan around that. What we—

Mrs. MCCLAIN DELANEY. And the bumpers and safeguards as well.

Mr. FOSTER. Well—

Mrs. MCCLAIN DELANEY. That's—

Mr. FOSTER [continuing]. And—right, but it is the—it is the bumpers and safeguards, you know? I think that the—you know, ultimately, the end point, personally, where we have to get with AI is that we're going to have to have an AI that's on your side, that every person is going to have their dozens of startups that are making personal AIs, but the difficulty is that that when you say, how are you going to make money, and they say, oh, it'll be like Google. We're going to get everyone to trust our AI product, and then we're going to abuse that trust to steer people into crappy, overpriced products, which is sort of what happened to Google in a very—you know, I love Google, but there—you know, there's some truth to what I just said.

And so this is a commercial incentive. And if we can set up a set of commercial incentives for an AI that's on your side, where it's—

where someone has a right—I mean, Sam Altman calls this universal basic computer, something like this, but you—some—every citizen of the United States would have the right to have an AI whose interests were aligned with themselves. And that’s a—and that is something that government can do because, you know, free enterprise won’t do it by themselves. But you could really—you know, a lot of the arguments we get into over things like consumer protection would not be necessary if every person had an AI that made sure you weren’t being screwed by whoever it was you were transacting with. Anyway—

Chairman BABIN. OK.

Mr. FOSTER [continuing]. Long discussion there but—

Mrs. MCCLAIN DELANEY. Well said. Thank you.

Chairman BABIN. The gentlewoman’s time has expired.

Mrs. MCCLAIN DELANEY. I yield back.

Chairman BABIN. Thank you very much.

I’d like to now recognize the Representative from Colorado, Mr. Hurd.

Mr. HURD. Thank you very much, Mr. Chairman.

Dr. Foster, welcome. It’s very good to meet you.

Question about the Department of Energy National Labs. How do we measure success when it comes to innovation in the work being done in the Department of Energy National Labs? Are there metrics that the public can look to or that we, as Members of Congress, can look to in evaluating whether or not we are directing resources effectively?

Mr. FOSTER. I think the—I was—wrestled with that question for, you know, my entire career, and I come to the conclusion the answer is no. You know, for example, you know, back in the 1990’s we were programming neural networks, and it was just a flaming disaster because neural networks weren’t ready because we didn’t have the computing power, and no one had gotten backpropagation to work and so on. But it was very nice in retrospect that you had this set of very smart people arguing about neural networks.

You know, for example, when we were trying to—thinking about publishing papers that use neural networks, we ran into what’s now called the explainability problem, that if we were to publish a paper that said we have discovered a subatomic particle because our neural network says so, you know, how do you even—you know, how do you even read such a paper? And then the Financial Services Committee, where I also serve, I was the Chair of an AI Task Force. And so the problem we have then is, if an AI tells you, I’m sorry, your mortgage has been turned down because our neural network says so, it’s the exact same problem. It’s not an acceptable answer.

But having a large number of people in the national labs thinking about every little corner that may not look promising now, that I think the best thing—the best way to handle that is to have really smart directors of the national labs and give them a lot of autonomy and let them take responsibility for the long-term scientific productivity or even the medium-term productivity, and do it—handle it that way.

And it’s a high-risk enterprise. You’re going to find someone who looks like a great candidate to run a national lab and not be that

good. You're going to see people who just drive you nuts, and in retrospect, they accomplished something incredible. And there's a history of that in national lab directors. And so we need, I think, a little less bureaucracy and more autonomy for the national labs—the leadership of the national labs to do something great with each national lab, and that's the way I'd move the needle on that. But it's not trying to hold them to little bureaucratic numbers. It's a recipe for gaming the system and not being scientifically productive.

Mr. HURD. Yes. I think with science sometimes it can be difficult to measure success because it seems to me—and you would know better as the scientist, that failure is sometimes integral to long-term progress—

Mr. FOSTER. Yes.

Mr. HURD [continuing]. When it comes to science.

Mr. FOSTER. Yes, no, it's a—it's tough because the metrics are developed over decades. And unfortunately, there's—you know, every Member of the House, their time horizon is 2 years. And unless you can, you know, say that you've, you know, accomplished something great or cut the budget in 2 years, it's—you don't have some—you don't have a talking point for your reelection. So it's almost a fundamental design problem with democracy that we have to overcome, that the political incentives are short term, but in science, the gain is long term, and we just have to systematically elect people who understand that problem and are willing to take the short-term political hit for what they believe to be the long-term best interests of the country. And that's a tough one.

Mr. HURD. That's very helpful context. Thank you so much, Dr. Foster.

Mr. Chairman, I yield back.

Chairman BABIN. Yes, sir. Thank you very much.

And now, I'd like to recognize the gentleman from New York, Mr. Riley.

Mr. RILEY. Thank you, Mr. Chairman. Thank you, Dr. Foster.

I want to follow up on something you talked about, the *CHIPS and Science Act*. And I've got to tell you, I am so sick and tired of this place pulling the rug out from underneath upstate New Yorkers. And so when the President of the United States comes up here for a joint session next week and tells this place to kill the *CHIPS and Science Act*, we're not going to stand for it.

You know, we used to make stuff in this country. We took pride in making stuff in America. Where I'm from in upstate New York, Made in America is not just a political slogan. It's literally who we are. In my hometown, Endicott, New York, we had the world's biggest shoe company for generations. My family worked there for a long, long time. They were tanners. My grandma stitched boots. And I'm so proud of that because—not just because we made stuff, and not just because it was made in America, we made important stuff. During the World Wars, we equipped American soldiers with American-made boots to go off to Europe and stomp out fascism.

I mean, I just got here 2 months ago. I've barely decorated my office, but aside from some family photos, the thing I've got in my office are boots that were made in my hometown by my great-great grandparents that were worn by our soldiers in the World Wars.

IBM was founded in my hometown, thousands of people in Endicott and the Triple Cities making the circuit boards that brought the world a technology revolution and put America at the forefront of it. And my family, my friends, my neighbors, they clocked in, they worked their hands to the bones, they clocked out, they went home, they got up the next day, they did it again. They did everything that anyone has ever asked of them, and the only thing they asked out of this place in return was a fair shot to get into the middle class.

And instead, what we've seen out of Washington for generations are upstate New Yorkers getting the rug pulled out from under them because a bunch of Washington politicians and Wall Street bankers and corporate executives decided to ship all of our jobs overseas, to China, to Mexico, just so that they could make a quick buck. And I'm sure that was really good for their bottom lines, but it was really, really terrible for working people in this country and really terrible for blue-collar towns like the one that I grew up in.

You get out of Washington, you get out of this place, you go home to the American heartland, you go to upstate New York, and you see that people are really hurting. I mean, the cost of living is unacceptable, the utility prices, the rent. I mean, my God, you go to the Wegmans in Johnson City, and eggs are seven bucks a dozen. And meanwhile, wages in this country haven't increased since we let China into the WTO (World Trade Organization) 25 years ago.

So then, after decades of failed industrial and trade policy, this place and this Committee finally got something right, something really exciting, something good with the *CHIPS and Science Act*. I mean, think about this. Instead of being dependent on China for chips, we're going to make them in America and make them in upstate New York. And that's sort of obvious that we should do that for American national security. Like, seriously, guys, how stupid is it that we're going to rely on China for something as important as semiconductors? Terrible for national security to do that.

But we also need this law to rebuild the middle class in America and rebuild the middle class in upstate New York. The trades unions that I represent, those are going to be great jobs building those chip fabs in Poughkeepsie and in Clay. We've got Menlo Micro is going to hire hundreds of people in Lansing with really good advanced manufacturing jobs. We've got in Rensselaer County some of the most exciting, some of the best R&D. And the *CHIPS and Science Act*, for once, is a reason to have some hope. It's a good law. It's an important law. It's a reason to be hopeful.

And then the President comes up here last week in a joint session and tells this place to kill that law. That is absolutely unacceptable, and I'm going to be damned if I'm going to sit here and let this place pull the rug out from upstate New Yorkers again.

You mentioned this in your opening statement. Any advice for us to make sure this law is not just on the books, but actually doing what it's supposed to do and rebuild the middle class?

Mr. FOSTER. Yes, well, they have—a bunch of things. You know, I'm—first off, I'm best known as being the Ph.D. scientist here, but I'm actually also a manufacturer. When I was 19, my little brother and I started this company that now manufactures about 2/3 of the theater lighting control equipment in the United States. So,

you know, when the lights go up on Broadway or rock and roll or whatever, 2/3 of the time, it's our company's equipment.

And we have 13—1,500 employees now in Mazomanie and Middleton, Wisconsin, if you heard of those places. And, you know, it is—and we do, you know, hardware, software, sheet metal, wiring harnesses, everything, customer support. And we've kept those in the Midwest, and I'm very proud of it, but it is damned hard. And part of that's unavoidable. You know, with—it's technology, you know? The truth of the matter is, you know, you—technology has lowered the competitive market value of human labor. And that's true, and it's going to be even more true when AI and robotics hit so that we have to—there's—the national security imperative is to bring the manufacturing back, and that will bring some of the jobs back, but not all of them. And then we have to, you know, deal with that problem honestly, and it's a really tough one.

And I think part of it is that we're going to have to—as AI and robotics become more productive, we're going to have to find a way to spread the wealth, frankly. This is—you know, it's a problem that's not going to get easier in the near term.

Chairman BABIN. The gentleman's time has expired.

Mr. RILEY. Thank you. Thank you, Doctor. Sorry.

Chairman BABIN. Thank you.

Mr. RILEY. Thank you, Mr. Chairman.

Chairman BABIN. Thank you very much. Any other Members wish to ask questions? OK. Well, I want to thank Dr. Foster, 100 percent of our Ph.D. physicists here in the House of Representatives, for being here today.

The record will remain open for 10 days for additional comments and written questions from this—from our Members. Thank you, Dr. Foster. Thank you, everybody. This meeting is adjourned.

[Whereupon, at 10:40 a.m., the Committee was adjourned.]

