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WEBINAR

REIMAGINING INDUSTRIAL POLICY FOR THE SERVICE AND TECH SECTORS

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ANDERSON COURT REPORTING
1800 Diagonal Road, Suite 600
Alexandria, VA 22314
Phone (703) 519-7180 Fax (703) 519-7190

PARTICIPANTS:

Welcome:

ROBERT E. RUBIN
Former U.S. Treasury Secretary; Co-Chair Emeritus,
Council on Foreign Relations

Fireside Chat:

Introduction:

ROGER C. ALTMAN
Founder & Senior Chairman, Evercore

Moderator:

ALEX BURNS
Incoming Associate Editor for Global
Politics and Columnist, POLITICO

Guest:

THE HONORABLE GINA RAIMONDO
Secretary, U.S. Department of Commerce

How To Address Critical Technology Strategies At The Federal Level

Moderator:

ERIC SCHMIDT
Co-founder, Schmidt Futures; Former CEO and
Chairman, Google

Discussants:

SAMEERA FAZILI
Deputy Assistant to the President
Deputy Director, National Economic Council,
The White House

PARTICIPANTS (CONT'D):

ERICA FUCHS
Professor in the Department of Engineering and
Public Policy, Carnegie Mellon University

How A Modern Industrial Policy Can Improve Service Sector Jobs

Moderator:

WENDY EDELBERG
Director, The Hamilton Project, Senior Fellow,
Economic Studies, The Brookings Institution

Discussants:

DANI RODRIK
Ford Foundation Professor of International
Political Economy, Harvard Kennedy School

MARY KAY HENRY
International President, Service Employees
International Union (SEIU)

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P R O C E E D I N G S

MR. RUBIN: (audio malfunction) the issues in one way or another for close to five decades. And industrial policy has always been an important issue and a highly controversial one, substantively and politically. And that is truth both in terms of industrial policy per se, but also what I would call de facto industrial policy, which is to say industrial policy in the form of subsidies, tax incentives, and various kinds of regulations and tariffs.

And all of this is made more complicated, as all of you well know, by the efforts of political interests and private commercial interests to use the rubric of industrial policy to serve their own interests, as opposed to addressing market failures.

Today's program is designed to help us better understand this complex subject, to better evaluate the industrial policy measure that have already been enacted, and most importantly, to contribute to bringing rigor to greatly improving industrial policy in the years and decades ahead.

Toward this end we have two outstanding panels and we are deeply, deeply grateful to our keynote speaker, Gina Raimondo, the distinguished former governor of Rhode Island and now highly distinguished secretary of commerce. She will be introduced by Roger Altman, co-founder of the Hamilton Project.

Roger?

MR. ALTMAN: Good afternoon, everyone. We are very fortunate to be joined by Commerce Secretary Gina Raimondo. It doesn't surprise anyone who knows Gina and who

knows Washington that she has excelled in this current position. And that may be an understatement. And that's no surprise because Gina was an exceedingly successful governor and that prepared her very well for this current role at this particular time. And it's no surprise because before going into public life Gina had a successful tour of duty in the private sector and she understands how government and the private sector can work together effectively. And it doesn't surprise anyone because she has the energy of most ten people.

And all of these skills, experience, and energy were critical in the rather dramatic passage of the CHIPS Act, which is going to prove I think profoundly important over the coming years in terms of science and technology, in terms of semiconductor production and competitiveness, and in terms of economic development in regions which need it. And I think it is fair to say that other than President Biden, Gina was the indispensable person in this policy and legislative achievement.

And beyond that, as we all ready on the front page of the *New York Times* two days ago, there is occurring quite a recovery in U.S. manufacturing and manufacturing jobs in the United States and Gina is playing a really serious role in that.

So we are grateful to have here today. Alex Burns of *POLITICO* is going to interview her and we welcome her. (Applause)

MR. BURNS: Thank you for being here. Thank you most of all to Secretary Raimondo. It's a real pleasure to be in this chair in this conversation.

I'm going to start off by asking you a bunch of questions, but you all have note

cards if you want to submit questions that I will then relay to the Secretary. And so please, as the conversation goes, feel free and feel encouraged to chime in.

So I want to start really, really broad here. You know, we're here to talk about industrial policy, we're at this moment —- and certainly depending on who you talk to —- it feels like a moment of real opportunity and a real kind of doors opening intellectually and culturally about what government can and should do in the economy.

And I want to ask you, how much do you feel like that sentiment, that atmosphere of possibility is real and here to stay and that the impetus behind CHIPS, the impetus behind the climate investments that this Administration is making, that those are dynamics that are going to be with us for a little while, versus there's been this window of opportunity and it might not be open that much longer?

SECRETARY RAIMONDO: Yeah, good question.

Hello, everybody. Good afternoon and thank you for inviting me. Thank you to Brookings and Hamilton for continuing the great work you do and then having this discussion.

I think it's real and here's why I say that. Because, as you know, I was very involved in getting the CHIPS Act through Congress and it was a huge bipartisan vote. So it's not just President Biden saying this is what we should do, it's not just, you know, liberal economists or Democratic leaning economists saying this is what we should do. But you saw a broad bipartisan vote. Many Republican members of the Senate were the biggest advocates for it. In fact, I was just out in Indiana two weeks ago at a semiconductor facility at Purdue, it was

an entirely Republican delegation, including Mitch Daniels, who is now the president of Purdue, former Republican governor, but it was the current Republican governor. And I was there with the secretary of state because we were making the point that for America to lead in the world you have to be strong at home. And so I think that there is a broad recognition that as a matter of national security, as well as economic security, we have to make investments in certain sectors for America to be strong.

So that's my view, which is it's not a flash in the pan, it's not limited to one political party. I think it's real and could be here to stay.

MR. BURNS: On CHIPS it was not limited to one political party, right, but on climate it was limited to one political party. Some of the proposals that we're going to be talking about today involve long-term care, involve investing in technology to help the experience and productivity of service workers. Do you see that as something that could have broader buy in than juts your party?

SECRETARY RAIMONDO: I hope so. It should.

Let me say this, on climate, maybe —- I mean clearly that was a bipartisan bill. The IRA was a bipartisan bill. But if you were to ask people about shoring up the supply chains of critical minerals and solar panels, where we are now, unbelievably dependent on China, I think you'd find support for that on both sides of the aisle as a national security issue and an economic security issue. You know, maybe the precise EV tax rebates that were in that bill didn't have bipartisan support, but I think broadly investing in our supply chain, not being so

vulnerable to –- or so dependent on China and other countries for critical supplies would be broadly supported.

As it relates to the care economy, listen, I was incredibly disappointed that Congress couldn't see its way to getting that done, you know. By the way, more broadly, Congress couldn't see its way to investing in anything that supports women in the workforce –- pre-K, early childhood, paid leave, care economy. Somehow we found our way to spending trillions of dollars to invest, but those investments that supported women's ability to work, we couldn't find our way to funding any of them. I think it is a huge mistake. I think it weakens America, weakens our labor force, weakens our ability to compete, and I hope that we can find the space and ability to make those investments.

Whether or not–-as we were just talking out there–-whether you call that industrial planning or whether you call that infrastructure, I don't much care about that. I just know that you have tens of millions of women working full-time in poverty in the "care economy" and that's a problem. And we need to fix that and shore it up.

MR. BURNS: Well, let me push you a little bit further on that. You're sort of speaking broadly, that Congress couldn't find its way to do that. You know, we all couldn't get there. Why not?

SECRETARY RAIMONDO: It was thought to be a partisan issue and that we just couldn't get the support around making those investments, which of course had to go with tax increases. But I think my own view is we need to stay at it. And I'll tell you, I think we need to

change the narrative a little bit.

I spent some time talking to members of Congress about the care economy, investments in pre-K, paid leave, and they were all bucketed in social programs. So many people I would talk to would say, I can't get behind the "social programs". And the social programs were investments in home and community based care, raising wages, childcare, et cetera. And I think in order to make it happen, as long as they are cast as social programs, I don't think we'll get the political support we need. We need to call them what they are, which is investments in workforce, investments in a more equal economy, investments in healthcare, investments in women's ability to work and to work at their full productivity.

So I see these as economic investments that unleash the full talent of Americans, reduce income inequality, improve our quality of healthcare. I don't see them as, you know, social issues, and I think we need to stop talking about them as social issues.

MR. BURNS: And does that –- I mean do you believe there would have been sort of more support than was publicly visible from the business community had you presented it –- not you personally, but had Democrats presented a new agenda in those terms?

SECRETARY RAIMONDO: So this is what we need to figure out. I don't know is my very honest answer. I think so. Yes, I think so. I think that business communities not in the business of supporting "social programs". But look, 57 percent of college degrees go to women, yet our entire system –- we don't make the investments required to fully tap into the talent and productivity of women. Almost 30 percent of the people who work in the "care economy", you

know, home care, work in poverty —- full-time in poverty. How can that be good for our country? How can that be good for our level of income inequality. And, you know, I would say whether you want to call that industrial policy or not, making investments in the productive capacity —- to improve the productive capacity of every American worker from every community, whether or not they have a college degree, men and women, people of color or not, is necessary for America to compete. I see it as an issue of national competitiveness. In order to compete, we need to invest in our people so they can be maximally innovative and productive.

MR. BURNS: How much do you feel like the limits of what can be achieved on a bipartisan basis is sort of bounded by a national security argument that —- obviously the argument really resonated across the aisle, that CHIPS had to be done to keep America safe and compete with our greatest global adversary? I think it's harder to make that argument for supporting women in the service sector, however deserving they might me.

SECRETARY RAIMONDO: Yeah. So think about me as —- I really am a stubborn optimist. I was an elected official for many years, y you have to maintain your optimism. And I really do. I really do. People say to you, oh, Gina, don't to D.C., you know, it's broken, da da, da da. That has not been my experience. I was able to be involved in the bipartisan deal for infrastructure, in CHIPS. So I'd like to think it's not bound to that, okay.

It is clearly the case that CHIPS happened in large part because of the national security argument. No doubt about it. And earlier I was talking about critical minerals and

solar panels, energy independence, all related to national security. And, by the way, it's good to know –- it is good for the American people to know that when our national security is at stake, Congress can get things done quickly in a bipartisan fashion. That heartened me greatly. I'd like to think it's not limited to issues of national security narrowly defined.

I will say this, the level of economic inequality in this country, which I believe feeds our political division, does threaten our national security. And so it's maybe more attenuated, as you say, and therefore we have to work a little harder to make the case, and I think we have to stick with it.

But in my judgment, it is clearly true that America's ability to defend ourselves and lead in the world depends on our strength, equality, you know, economics equally shared, and cohesiveness and strong political institutions here at home. And to the extent that we don't level the playing field, we will continue to see this political division, which I think weakens us and it weakens our national security.

MR. BURNS: I mean that sounds to me like you're talking about an agenda that goes well beyond what I think we would traditionally talk about as industrial policy.

SECRETARY RAIMONDO: I don't think so. I think it just depends on –- I think it's a couple of things. One, we have certain national assets that we have to preserve. And, by the way, we do that now. Like I understand we're talking about industrial policy and of course I'm leading the CHIPS effort, so I am for this. And I think if you look over the past 50 years, America has just declined in how much we invest in research and development, invest in manufacturing.

It's a problem and we need to turn the tide.

But we have for a long time, without anyone paying attention to it, subsidized airlines, the agriculture industry, healthcare. So let's not pretend that we haven't for a long time made government investments to shore up certain industries that we think are valuable.

Look, I think this, and I have said —- I said this when I became governor or Rhode Island, I said this when the President asked me to take this job, and I know the President believes in this, which is if you pursue an economic strategy of simply cutting taxes, reducing government, and deregulating, it is a failed economic theory that will lead to long-term poor results, less growth, more inequality, more fragile supply chains, and political division. And so the President's policy, which I think it working, is you have —- yes, you have to have reasonable competitive taxes, you have to get rid of regulations which are burdensome, you have to have transparency, and limited regulation, reduce friction for businesses to do business. But you must invest for growth. You must invest for growth and you must invest in people, education, job training, as well as infrastructure, as well as broadband, as well as research and development.

MR. BURNS: Would you look at the UK today as a cautionary tale in what you're talking about?

SECRETARY RAIMONDO: Yes. You know, it only —- you know, these policies are brand new. From where I sit it's hard to —- I don't know how this story is going to end. I would just simply say like we're pursuing a different strategy. Like we are taking inflation seriously,

letting the Fed do its job, watching deficit spending, reducing deficits. The President, every time we talk to him, he talks about you have to pay for what you're spending, and he believes that. But also making investments, investing in infrastructure, people, skills, et cetera. As far as I'm concerned–- and there are more economists, smarter economists here than I for sure –- the policy of cutting taxes and simultaneously increasing spending isn't one that is going to fight inflation in the short-term or put you in good stead for long-term economic growth.

So you say is it a cautionary tale. I mean the markets have plummeted, the pound has plummeted. It's early going for that new strategy, but I think it's not the one we're pursuing.

MR. BURNS: I mean I'm just sort of struck that you said in your previous comments that the strategy of cutting and deregulating our way to economic growth catches up with you over the long-term. This is not a very long-term, right? They announced that strategy on Friday and –-

SECRETARY RAIMONDO: Right, yeah.

MR. BURNS: –- we're in total turmoil five days later.

SECRETARY RAIMONDO: Yeah. No, it is true. But, look, yes. I mean I think that the one thing we're seeing is it's a brand new government, it was an unanticipated significant move. So it's hard to know how much of what the markets are saying that they're opposed to that approach as much as they're saying we want to predictability, we want responsible government, we want stability, and we want inflation. I mean that is the other thing, that is the

other thing here, which is investors, business people want to see world leaders taking inflation very seriously, and it's hard to see that out of this new government.

MR. BURNS: So one other thing that struck me in reading the papers that we're talking about today and listening to your comments is how much of this feels like it's planning, right? You just used the word predictability. How much of this feels like it's trying to kind of lend a sense of predictability or create some structures to give predictability to the economic policies of a Democratic system that can swing wildly in two and four year cycles? And how much do you feel like that's just an inherent burden in this whole system that we've got here, versus something that actually could be managed around considerably better?

SECRETARY RAIMONDO: You mean investments in —-

MR. BURNS: That you have —- so you have —- you're spearheading CHIPS, there are these long range investments in climate, and look, in two and a half years we could have a different Administration that thinks that climate change isn't real and a president who couldn't define what a semiconductor is. I'm not thinking of anybody in particular, obviously. And I just wonder how much you feel. Like, look, that's baked into the system, that's how it goes, and we've got to do the best we can versus, no, we can actually do a whole lot better than we have so far at managing around that.

SECRETARY RAIMONDO: Yeah, yeah, yeah. Again, I mean I think that that's why I'm so excited that these investments have been by and large bipartisan. So I hear your —- I take your point on the climate, inflation reduction, but the entire infrastructure bill was bipartisan,

big bipartisan vote. So in addition to CHIPS, the other –- commerce is also investing $50 billion to bring internet to every American, broadband. Tens of millions of Americans don't have broadband. That was bipartisan. Investments in transit and roads and bridges, CHIPS, all bipartisan.

So I think there is a broader recognition in the system among policy makers, politicians, Americans. And this is also coming from the people, right. Like Americans lived painfully the experience of when your supply chains –- when you have such vulnerable, fragile supply chains. Americans have lived painfully the collapse of manufacturing in the United States.

So in any event, I think that some of this is coming from the American people reflected in politics on both the left and the right and it's not, as I said, one –- however much I love President Biden, and I do, it's not that one person said this is the policy we're pursuing and therefore it's happening. You know, this was a whole system that got around trillions of dollars of spending investment being supported in a bipartisan way. And I like I say, I was just in Indiana with the governor –- the governor, a Republican, was with us with the Republican senator, with the Republican head of the state university, all saying the same thing.

So I do think it's a change because the results of disinvestment are pretty clearly bad.

MR. BURNS: So how quickly do you think the American people need to see some kind of tangible benefit from all of this in order to build the long-term democratic support that

you need?

SECRETARY RAIMONDO: So as fast as possible. Really, I think that –- Mary Kay is laughing at me –- so when I was the governor –- I had been governor for more than six years –- I learned a very powerful lesson, and you'll probably laugh at this too. People –- how do you say it –- it's not always –- think about your own lives, it's not always clear to the average person doing their life, getting the kids to school, making it through the day, paying the bills, making dinner, exactly what government is doing for them and why it matters. What they do know is what they see –- and I mean quite literally what they see.

So if Americans soon see new bridges, new construction projects, internet is working in their house a new semiconductor manufacturing facility built in their community, et cetera, et cetera, that will be visible signs of government working for them, rejuvenation in the infrastructure that benefits them. But I don't –- I think people are impatient and they shouldn't be. It's not easy right now. Most Americans are just paycheck to paycheck every week, so they're demanding results and I think we've got to produce pretty quickly.

MR. BURNS: I mean this is going to be a relatively small share of the country, right, that literally sees a semiconductor manufacturing facility in their neighborhood, right, so –-

SECRETARY RAIMONDO: But they could see a bridge, they could see –-

MR. BURNS: Well, I'm curious. But on CHIPS, for the communities that are not going to get a massive semiconductor plant, like what does that look like to the –- what do you

hope that looks like to the average American? What's the tangible thing that you hope they see that can tell –- that –- where they would say, yeah, I hope the government does more of that?

SECRETARY RAIMONDO: Yeah. So I think it would be more than you think, by the way. Because the way we're implementing the program is we're trying to build out whole regions of the whole ecosystem. So, yes, you may have like Intel in Ohio. It's a massive –- well, actually I told you I was just in Arizona. TSMC is building a facility there that's two miles big. That's stunning.

In any event, then it's everything around that, all the suppliers and then of course all of the ancillary businesses to support all the people that will work there and then the new roads and such that will support that. And then we hope research universities will make investments and we hope that startups will emerge around the semiconductor research and development. So I think you will see whole regions of America over time build up with that whole ecosystem from research and development to new startups, new materials, new suppliers, chemical suppliers to the fab. And I'm only saying that because I have quite a big vision for the semiconductor implementation, which is much more than just build the new facilities.

There will be new training programs. People will be thinking, maybe I'll go to community college and become a semiconductor process engineer. So I think that people will see that.

And of course it isn't just chips. Another area that I'm very involved with in

Commerce is offshore wind. Massive job opportunity. We'll be creating new vessels and tons of new jobs creating that. Solar, EV, batteries. I think you're going to see a renaissance in advanced manufacturing. So what will America see? Jobs, better jobs. Also, more manufacturing jobs. And I am determined to make sure that a fair share of those jobs to go women. You know, average apprentice welder makes $32 an hour. Like let's make sure that's equally shared.

MR. BURNS: And what does that look like for you? Making that happen.

SECRETARY RAIMONDO: Making sure that people –- putting strings attached to the subsidies that the Federal Government's providing. If you want to take our money to build infrastructure, build a fab, et cetera, we want to make sure the workforce is highly trained, kept safe, well paid, and diverse.

MR. BURNS: I mean that seems like that the –- sort of what you were talking about earlier and how you brought in the national security national competitiveness argument to actually get some of these other goals done that people would typically think of as social policy.

SECRETARY RAIMONDO: Yes. And I –- again, I just –- what I already said. I think as long as we keep calling it social policy it doesn't get the political support that it needs. And I think it's so much more than that.

You know, one of the things I did as governor, we became the first state in the country to teach computer science in every public school in every grade starting in

kindergarten. That's education, it helps kids, is that social policy? I did it because it's an economic imperative. If you want tech companies to start up in your state and you want your citizens to get a chance to have a job, that is core economic competitiveness. And I would say the same thing for these other things. You know, home care as our population ages. You know how many millions of people drop out of the workforce every year –- mostly women –- to take care of mom or dad at home. And then they try to get back into the workforce, and it's very hard. We can't lose the productive capacity of all those people.

MR. BURNS: Mm-hmm. I want to ask you one more question of my own before we go to these bad boys.

SECRETARY RAIMONDO: I'm curious what's in that stack. (Laughter)

MR. BURNS: You know, one of the proposals that we're talking about today is an ARPA for workers. We have a DARPA, we have an ARPA for energy, we have an ARPA for healthcare, and I wonder –- this is not a criticism of the ARPA for workers proposal –- I wonder like how many ARPAs does the government need to have before you wonder why our markets are supposedly really dynamic and entrepreneurial free market system isn't getting that stuff done.

SECRETARY RAIMONDO: Well, I'm not familiar with that exact proposal, but, look, it's been a long time of disinvestment. It has been a long time of prioritizing shareholder value and profitability and ruthless efficiency and disinvesting in, as I said, research and development, the quality of K-12 education, the quality of our basic infrastructure, the quality

of investments in our supply chains, quality and quantity. It's been nothing but decline for decades.

So it shouldn't surprise any of us that we wake up in a world of –- in a country of crumbling infrastructure and unsustainable income inequality.

So when you take that fact, that we have decades to make up for, combined with the fact that our economy is changing at a faster rate than any of us have ever seen. Like we can't forget about that either, right. Like the fact that we need to train millions of people in digital skills and cyber and cloud and AI and advanced manufacturing in robotics is because this –- you know, the world is changing at this incredible rate.

So when you combine the breakneck pace of innovation with our decades of disinvestment, we do have a lot of time to make up for and maybe we do need a few of these one time emergency big infusions.

MR. BURNS: I'm getting a signal that the time is up. I did promise you one question from the cards, so I'll be fast asking it and –-

SECRETARY RAIMONDO: Okay. Sorry.

MR. BURNS: –- you can be as efficient answering as you want to me.

SECRETARY RAIMONDO: We didn't have a time here, so.

MR. BURNS: Yeah, but I do have a very –-

SECRETARY RAIMONDO: Oh, time is up.

MR. BURNS: –- emphatic card in the front row there.

Just to summarize a couple of these.

SECRETARY RAIMONDO: Yes.

MR. BURNS: Where does sort of national competitiveness and national security end and just sort of wantonly picking winners and losers start? And isn't there a risk here that we're going to jam some of our good friend around the world who have been making investments in these spaces for a really long time and then suddenly here comes Secretary Raimondo with billions of dollars to sort of wipe them out.

SECRETARY RAIMONDO: You cannot answer this when time is up. (Laughter) This is a real question that requires a lot of thought, judgment, and careful consideration.

There are certain products, like chips, you know, for example, other critical minerals that we just did an unsafe, untenable situation, right. Like god forbid, if China and Taiwan cut us off from chips, it's calamity. So there's certain –- when you say pick winners and losers, I mean there are just certain products and industries where we have to be able to produce more in America. And I consider those to be –- it's a relatively limited list. By the way, that industry is capital intensive, very capital intensive, so it's hard for U.S. publicly traded companies to make massive long-term investments, you know, because they're chasing next quarters' share price and such.

So I think that's like a reasonably short list and we have to be focused in that list.

I also –- and it isn't so much picking winners and losers, it's like for our basic national security, our strategy as it relates to economic and national security, you can have a list

and you have to have some dominance in those areas or self sufficiency.

But the other thing is we have to be implementing all of this with our allies. And that's something I'm very, very focused on. Europe has a CHIPS program, India had a CHIPS program, Japan has a CHIPS program, Australia wants to work with us around critical minerals. We can't do it on our own and I think that none of this is easy. Easy to talk about it, hard to do. But I think the way you have to be on guard about kind of doing it on our own and doing it with our allies.

MR. BURNS: Well, thank you for talking about all this with us.

SECRETARY RAIMONDO: Thank you. (Applause)

MR. SCHMIDT: Thank you. Thank you all, and thank you guys for being here. I have the privilege of chatting with two really extraordinary leaders in this space. One is Erica Fuchs, who's a Professor of Carnegie Mellon in the Department of Engineering and Public Policy. And the other one is Sameera Fazili, he's the Deputy Assistant to the President and Deputy Director of the National Economic Council in the White House.

I thought what we could do is just dive right in, and I'll ask Erica. There's an implication that we know what the list is. There's an implication in this conversation so far that we have plans in each of them. What is the list? Do we have one? And what are the details?

MS. FUCHS: So, I want to place that list in a context, which is that over the last half a century, the geopolitical balance of scientific, economic, and production capabilities has shifted away from U.S. dominance. The United States were no longer in a singular position of

global scientific and technological leadership, and China has become the largest producer and second largest economy in the world. And at the same time, we face equal or greater challenges on the home front, where economic inequality has increased, and social mobility declined.

So, central to these issues are trade and technology. And yet, despite bipartisan agreement on these challenges, the policy solutions and how to solve them are less clear. So, some have argued for the need to fund critical technologies, where the Defense Authorization Act tells us -- 1990 Defense Authorization Act -- that critical technologies are anything we need to develop for economic prosperity, or national security.

And as broad as that is and as hard to ask them "what do we do with those lists" or "what attributes to that," at the same time it also falls short. So, we don't have health, for example -- as the pandemic recently highlighted -- in that technology development. And we don't have access, for example, to semiconductors in that technology development.

So, while some have argued for the need to fund critical technologies, to compete against China, others have argued for slowing down progress and trade. And those lists of critical technologies, these groups often think of themselves as in conflict. And yet, my research shows that we need to not choose between security and jobs or health. There exist -- and we can identify -- win-win critical technology investments -- and some of those lists are in the key technologies that we're going to talk about in a moment -- that advance national security, economic competitiveness, and the social well-being of all citizens.

So, within that context, the bipartisan CHIPS and Science Bill is truly landmark legislation. The bill mandates the Office of Science and Technology Strategy to find a national technology strategy and mandates the National Science Foundation's new Directorate for Technology Innovation and Partnerships to inform that strategy, scanning the domestic and international landscape for challenges, identifying key emerging technologies, and identifying the possibility for those key technologies to address the domestic and international challenges.

But how we ensure that NSF (sic) fulfills that mission and OSTP, and indeed that the CHIPS funding achieves its important goals of ensuring U.S. access and leadership in semiconductors, how do we go from those lists of technologies to concrete policy recommendations and concrete actions for policymakers? That's why, in my paper, I propose the creation of a program for a national capability for cross mission critical technology analytics to be the brain, to be the queue, behind that strategy.

MR. SCHMIDT: And to be clear, you're proposing an actual government organization as opposed to OSTP, which I was a member, which is essentially a set of volunteers trying to advise the President.

MS. FUCHS: Yes.

MR. SCHMIDT: So, that's -- your strategy is you make the list, but then there's a group that actually manages the list.

MS. FUCHS: And also inform -- updates and informs the list, and also informs what the policy actions are going to be, to go from we need to have capabilities in energy

storage, or we need to have access in semiconductors, to what do we need to do to get that.

MR. SCHMIDT: So, with Sameera, so what's -- okay, so let's imagine that the right thing happens. We have the list, and it's correct and so forth. What's missing in the federal government's ability to develop effective and actionable strategy in these technologies?

I mean, you're in it. And I know you're a bit frustrated by it. How is the Biden Administration trying to move? Is this what you're doing? And how are you going to actually -- in other words, how do you succeed given the list?

MS. FAZILI: I'm going to say I'm frustrated by it. I'm, like, "Secretary Raimondo," who we just heard, "you kind of have to be an eternal optimist to take on the jobs that we take on here in Washington."

Look, right now, we are at such an incredible inflection point as a country when it comes to these questions of technology and industrial policy. For decades, we've had a kind of science and technology apparatus that really just focused on roadmaps related to research and innovation frontier. But it was really disconnected from thinking about production and distribution of those technologies. And the -- we've just been through a spade of legislative success, in which we have a new bipartisan consensus to invest in and reinvent our -- both our industrial and our innovation capabilities.

It's pretty historic, the kind of 10 years of runway we now have, of funding and new programs to do that, to allow us to now take all the science and innovation expertise in the U.S. and bring it full cycle through lab to fab, to market. And the legislative successes we've had

across the bipartisan infrastructure law, the bipartisan CHIPS and Science Act, and the Inflation Reduction Act gives us a new set of tools, especially in the clean energy and digital economy, right, to help enhance and advance U.S global competitiveness in the -- those technologies and industries of the future.

So, "where are we now" and "where do we have to get to," to come back to your question of, like, what's missing, is when the President took office, he issued an executive order within a month of coming into office on supply chains, recognizing that we didn't have a set of analytic capabilities and the ability to really analyze where we have strategic gaps and vulnerabilities. And as a result of that work, we've published really first of their kind diagnosis and prognosis of vulnerabilities in key product supply chains. We looked at critical minerals, we looked at semiconductor, some of the very products Erica's paper goes into.

The other thing we've spent a lot of time doing is building agency capacity to work on questions of supply chain resilience. The reason I keep bringing technology back to supply chains is that understanding what is going to happen in innovation requires you to think about how that innovation is going to get made and distributed into the market. And understanding how that market for production is organized today is very important for us to develop a strategic vision of where we think it could go tomorrow, as we work with the technologists.

So, we now have new offices at the Department of Energy for manufacturing and supply chains. We have a new office in the Department of Health and Human Services on

public health industrial base. In the past, only the Department of Defense had a capability of doing deep industrial base analysis. And we've kind of expanded the agencies who are able to do that.

The other thing that I think we've been able to do in that space is build cross agency teams. So, Erica's paper talks a lot about how do you work across mission. We have worked diligently to build cross agency teams to ask these questions and answer them successfully, especially in the semiconductor space where state and commerce have worked together in a number of other areas.

One thing I think we've learned on the gap side in all that is what it takes to do this work is not just interdisciplinary. You have to bring economists with sociologists, with people with deep industry-specific expertise. It's not just that it's interdisciplinary. It's actually cross industry as well.

So, I'll give an example from our work on the chip shortage. People think the semiconductor industry is just, you know, Intel and TSMC. And it's not, right? You have to understand the equipment manufacturers' substrate, the packaging. And then as you have tried to understand the shortage, you have to understand how those users, especially the safe and secure, kind of more legacy nodes -- like the auto industry, defense manufacturers, healthcare device makers -- where they're sourcing, how they're sourcing.

And so, it requires you to understand a number of different industries and how goods move across on those supply chains. That's really hard. It's hard to build teams that are

that interdisciplinary. And the data needed to do thoughtful data-driven policymaking, a lot of it is held in the private sector.

So, what we need -- what I would argue or we need to build and build quickly to fully realize the potential of these this legislative success we've just had is new ways for public-private collaboration to move forward to pull out that data, since a lot of it is privately held – it's business confidential -- and figure out new ways to organize collaborative tables, to analyze kind of what the data tells us and what direction we need to head.

MR. SCHMIDT: Thank you. I'm very much looking for audience Q&A. And we –- you need to fill out your little cards and give it to somebody. And I promise to answer your -- ask your questions as quickly as possible, for both of you.

So, I love your proposals. Let me -- let's assess where we are now, and I'll just be my usual obnoxious self. So, we lost consumer financial stuff to China a long time ago. If you're in China, the automation around consumer financials is extraordinary, right, the way in which Chinese people operate.

China controls 90 percent of the New Energy Development. These are basically batteries, solar components, electrolysis, all of the physical components that are used in all of our nice, new electric vehicles. China's by far the leader in electric vehicles now in the world. In Quantum, because we didn't give somebody a visa, he went back to China and created a quantum program with an immense amount of funding.

In AI, the large language models, which is something I work on, China has a large

language model which is of a similar size, allegedly, as the ones being built in the West.

In synthetic biology, they have the same objectives. Their 5g networks are probably, conservatively, 10 times faster than ours. Look at your 5g signal and realize that if you had a 4g LTE signal, it would be actually faster. When they combined the 5g and 4g frequencies in the U.S., it actually slowed it down. Whereas in China, they have a buildout requirement, and they're doing about a gigabit for about a billion phones in their urban areas. I mean, I can go on.

Number one app in America is TikTok, which is founded by a Chinese firm run out of Singapore. So, it would have been nice have we had what you're doing 10 years ago to avoid these. How do we deal with this? My prejudice -- and I'll say it as obnoxious as possible -- I think you can't catch up. I think we lost those, so you have to change the game.

So, what do we do? Those are real businesses. They're enormously important. Semiconductor act (sic) $54 billion for the CHIPS Act. TSMC is investing $200 billion in capital over the next five years, largely held by the Taiwanese government. What's our answer? How do we go forward in these areas?

MS. FUCHS: So, I guess, I believe we are partly in the challenges that you described, Eric, because we lacked the type of entity or program that I'm proposing. I believe we need strategic, integrated interdisciplinary teams that bring together technologists and economists and political scientists to look at these problems and the policy actions that are needed.

I think, also -- so, there's three main things in a strategic fashion that I think this organization will do. And I'm going to actually try to give you some answers. But I think we lack the intellectual foundations, we lack the data, and we lack the analytic tools. They're all buildable, right now, to answer your questions well. That's my opinion. And if anything, our capabilities have atrophied in our country in doing that.

So, the one is I believe that we need a timely situational awareness. And we need to understand strategically what modern data and analytic tools enable us to do with timely situational awareness. So, for example, during the pandemic, I was working closely with the Economic Census, they had last collected survey data approximately seven years earlier. And it was going to come out five years earlier, and it was going to come out in two years, right? So, we lacked information.

And small and medium sized enterprises were responding to the shortages and masks and respirators across the country, but we didn't even know what they -- that they existed, no less their problems. But we could use modern language technology processing techniques to see them emerging and trying to sell their masks in the country.

So, how do we use that? That doesn't mean we want to forever collect data by the Economic Census on all masks and respirator producers in the country. But we need to be able to spin that up quickly. And when do we need the public private partnerships, and when do we sort of get inside their data and when not?

The second is -- I am so with you -- we need to understand how innovation can

transform our geopolitical standing, both domestically and internationally. I believe, again, that is feasible. We can look currently, we can quantify probabilities of different risks, China invading Taiwan, a natural disaster bringing down the grid in Texas. These are known risks.

And we can quantify them, and then we could say, "What is the real options value of alternative battery chemistries?" What's the -- given that China owns all of our refining of cobalt materials and of -- sorry, of cathode materials and electrodes, what do we need to think about when we think about whether or not there's value in domestic manufacturing of -- or extraction or alternative innovative processes, like extraction from the ocean of rare minerals?

So, those are "how do we think about innovation to transform our geopolitical standing," and that we can look and quantify the value of not -- this isn't choosing technology winners, it's saying there would be enormous value, not to be a dependent on the Democratic Republic of the Congo or on China because of the risks out there. And so, therefore, we want to incentivize innovation to get out of our current dilemma.

And the last is I believe that our country repeatedly struggles with making decisions where this total would be greater than the sum of the parts across our national missions. We are not a firm. A firm maximizes profit. A country has other objectives. It has national security. It has economic prosperity. For example, semiconductors fit into both. Semiconductors probably does a little bit less on the labor front, even though I would argue the stationary grids -- sorry, the batteries and energy storage do a lot and have a potential to do a

lot there.

And so, how do we think about these different missions, and how our decisions -- we may -- I believe, when you look at multi-attribute criteria decision making or otherwise, when you start to say "this is how this type of innovation would fill multiple objectives," like alternative chemistries and batteries, suddenly you find that we have more in common than -- whether that be interests in labor or interest in national security or interests in health than we have different.

MR. SCHMIDT: Sameera?

MS. FAZILI: So, I'm going to push back on one thing you said, but also concede on another. So, on the pushback side, if you look at kind of today's technologies and what today is like an advanced technology ready for market deployment, there is a lot of economic value creation that we can and should be capturing for the American economy.

There are a lot of jobs, and high paid jobs, and -- in potential to revitalize a lot of places in America where we have the assets that can get repositioned to produce kind of today's technologies, right?. And as we think about the -- helping the American people get the best benefit of the digital and climate transitions, it's important for -- that we make investments in those spaces. And that's why we have a set of kind of deployment and supply, supply and pull demand push kind of incentives out there in all the legislation that we've passed.

I think on the second question of "we've lost a bunch of technological battles,

where's our growth going to come from next?" That is why in the CHIPS and Science Act there was such an emphasis on funding basic research. Because what is really going to fuel our future competitiveness and decades ahead is inventing those new technologies. And I think we look forward to working with Congress to figure out how to fund those authorizations.

If you look at the bill, I think it's like the largest single-year increase in R&D funding, authorized at least. And we have to figure out, working with Congress, how do we how do we fund some of that.

MR. SCHMIDT: So, let's move to audience questions. For you, Sameera, how hard is it to do technology development with allied nations, not just ourselves? When you think about this, since you're in the government, how do you work with them? Do we need to do more? You know, do we have to have more flights or more Zooms or something?

MS. FAZILI: It's a great question. It's something that we've spent a lot of time working on. We've set up a trade and Technology Council with the Europeans. We've set up technology and supply chain dialogues with the quad, which is the Australians, Japan, and India. And in the Indo-Pacific Economic Framework that we've recently launched, we've also made this a centerpiece of that work.

So, we think it's really important that you work with allies and partners, in part because the U.S. has always been a place where we were at the leading edge of innovation because we brought the best and brightest minds from around the world to our country, and we attract them to our country. So, an America that is deeply engaged in the world and

deepening its partnerships with the rest of the world and improves its immigration policies, as you noted, is going to be -- it's really essential to keeping us kind of at the global cutting edge.

I think the other is that it builds markets, right? It builds -- that kind of economic partnership is what builds markets for our companies and our workers to produce and sell goods. And in this moment of great geostrategic uncertainty, it's important to have sets of allies and partners we can work with closely to shore up our vulnerabilities and to collectively shore up our common vulnerabilities, so that these vulnerabilities can't be used against us in moments of -- you know, as we've seen happen with Russia's invasion of Ukraine, and how we were successfully able to deploy a set of economic sanction tools against the Russians. By working with allies and partners, we kind of helped protect ourselves.

Of course, it comes with risks. I mean, it's -- I think, we in the U.S. are really clear-eyed about how we're trying to use tools like Cepheus, like export controls. And we think it's important for those tools to be effective, that we bring our allies and partners along to similarly think about using those kind of defensive tools as well. Because if we don't align on that, then we in the U.S. will be vulnerable and weak.

MR. SCHMIDT: Thank you. For -- entitled Dr. Fuchs in the question, where do you envision this critical tech analysis agency sitting within the government? Now that you've proposed it, where do you want to put it?

MS. FUCHS: Someone would raise their hand and tell me that that's the question you've asked. I think this is one of the more challenging questions that we face.

We're -- so, in doing some of this work, right, so as -- in working closely with Sameera and the NEC and Commerce and the DoD and industry during the semiconductor shortage -- and in particular, the safety, critical, robust semiconductor shortage -- one of the big challenges is that industry did not want to give their data to government.

But as over in the university, they were handing us their data, right and left. And the reason was -- is that we had identified that the problem in the system was that there was over specialization of safety, critical, robust chips, and a lack -- the DoD didn't have enough scale to have reliable chips. And on top of that, the auto industry didn't have enough chips to bring those to market.

And the problem was you couldn't just take a chip and move it to another fab and produce it there, because it would take six months to redesign the chip. And so, that is a type of Moses solution. But it also required talking to the DoD about what they cared about. It required talking to the auto industry about what they cared about. It required talking to the semiconductor industry about what they cared about. And talking to commerce about what they cared about.

And what that meant, if we're sitting in that neutral place in the middle where you could have those conversations, was then talking -- so, how do you sit, whether that be in government or outside government, in a way that can have those conversations and bring everyone to the table?

And I guess what I do believe is that we need a distributed, flexible capability

that can bring the right partners from industry, the right partners from academia, and the right partner from government to the table and chart out the pads. Okay, we need a Moses type solution, or we need a risk five type solution in this context. Does that belong in OSTP? Does that belong in an FFRDC? Does that belong as a distributed network across the country that is deeply tied to commerce? I don't know that answer.

MS. FAZILI: Can I just build on that for a second? I do think that we don't have to tie ourselves into knots about where to place that capability. we need to have, like, redundancy and capabilities. And so, having multiple agencies be able to serve that function is really key. And then the CHIPS and Science Act, we now have the NSF empowered to kind of do this kind of flexible multistakeholder grant making and so we can get to work.

The vision and what we've legislated in that is that it's not just industry, academia, and the government working together, but it's a broader lens in terms of bringing in other stakeholders, like labor, like local communities. Because if you -- you need to think about the different uses and users and have more user-designed conversations, or the end users kind of infusing that conversation so that we develop strategies that, as Erica said, kind of serve national missions.

And so, that requires a lot of collaboration with players who I think in the past we didn't give as much of a voice to, didn't give them as much of a voice in the science and technology kind of process. But we now have the ability to do that with the changes that have been made at NSF.

The other place that we had thought it made sense to put some of this capability was at the Department of Commerce, something called a Critical Supply Chain Resilience Program, which, you know, was in the House and Senate versions of the CHIPS and Science Act, but didn't quite make it through conference. But I'm hopeful that they look at that again and think about ways to empower the Commerce Department to play a bigger role.

MS. FUCHS: And I guess I want to riff off of Sameera for one moment. So, I agree with many of the things Sameera said. I think that we need the statistical agencies, the Economic Census, the Bureau of Labor Statistics, the National Science Foundation's Engineering and Science Statistics body to continue doing what they're doing. I, by all means, agree with bringing a broader population to the table. I also --

MS. FAZILI: And they've done it successfully at CMU with some of the work you guys are trying to do with labor. I will give you credit.

MS. FUCHS: Thank you very much. And I think at the same time, I agree with the NSF tip, in being in a very interesting position. I think we need an organization that has the ability to be strategic, that has the ability to say -- just as Sameera was saying earlier, both security and health of our population, who's really getting hurt on equity issues, need certain medical interventions, need -- or biotechnology solutions, need energy solutions, need semiconductors.

And I think it's really -- to survive in government, I argue this -- I would argue that this entity needs to stay strategic. It's not trying to replace the Economic Census. It's trying to

say, "Look where the world is moving with modern data analytics, we can help you bring inside." And actually that happened in our case, they saw -- they hired two new people. And that would be a success for the agency who called us and said, "We're going to do this type of work now inside because surveys have their place, but also modern data analytics do."

MR. SCHIIMDT: So, conveniently, we have -- before your answers, we have a follow-up question from the audience. And the audience question is, so why can't this capacity function outside of government? You're having a government centric conversation, but wouldn't it be better in the American system to have most of this be done outside of government?

MS. FUCHS: That's a great question.

MS. FAZILI: I think it's a great question. So, I what I'm really excited about, now that we have 10 years of runway to, like, build at speed and scale right now, is the kind of innovation that's going to lead to in our civil society organizations and our government kind of structures and institutions. Because that is where we need some really serious innovation and new ways of doing things.

We have not only under invested in things like infrastructure and science for decades, we've also under invested in government, and we haven't modernized. We haven't -- if you look at the way the administrative acts -- administrative state acts and functions today, like we aren't pulling in modern communication technologies and data analytics, because things follow a very old school kind of --

MR. SCHMIDT: That's called using email and Zoom in the government.

MS. FAZILI: We can't even use chat in our Zooms at the White House. But just, you know, noticing comment was a way in which the administrative state tried to engage with the electorate. And is that really the right way and the best way to pull in voices today? You know, you used to have to -- at the local level, you still have these requirements to post things in the newspaper or post a sign outside. There's no way that people are notified and able to bring their thoughts.

And so, I'm really eager to see ways in which we build new institutions that help kind of knit our country back together to and bring people together. And I'm really optimistic about it. Because I think having the ability literally -- we're not going to have a theoretical debates, we literally have to agree on how to spend, like 5 billion here and 1 billion here and 1 million here. And having deeply transactional level conversations are actually quite productive and making people work together.

MS FUCHS: So, why does it need to sit in government? Because government is a stakeholder. The government is a stakeholder in the sense of national security. It's a stakeholder in the sense of representing the people in terms of their equity, their jobs, and in terms of their security to continue to have the freedom that they have today. It's a stakeholder in terms of the economy. And when the -- there are national interests out there, and we have a stake. And how we play that game is going to change the outcomes for everyone, for all citizens in the economy.

That said, one other sentence would be, I do think this capability may need to have an ability to act with arm's length from government. Because just like in the example of the FAA, the airlines didn't want to share their data of near accidents, because they were worried about what the government would do with it. I think there are cases where we both need to leverage the talent across the nation, in industry, in academia, and in government in answering this question. And we need to make sure that everyone can come to the table.

MS. FAZILI: Yeah, government has the voice of the national interest. It's really key in helping shape the questions that get asked.

MR. SCHMIDT: Let me just say, very well said. Let me combine, as our last question, two questions, which are interrelated. How does managing competition among the larger legacy U.S phone and semiconductor and even tech companies factor into maintaining U.S. competitive edge? And a similar question, how does this strategy keep tech investments on the cutting edge?

So, I think the audience questions were basically, how do you deal with the incumbents and their lobbying and et cetera, et cetera? And how do you make sure we're really at the cutting edge? For both.

MS. FAZILI: Now, on the incumbent side, I will say we've -- especially in CHIPS implementation for the $52 billion -- really 39 billion of manufactured incentives, are thinking really deeply about guardrails, corporate guardrails of various kinds. You know, in the legislation, we had restrictions on stock buybacks.

And we also place really strong guardrails around what companies could do and build in China, to help make sure we were staying at the competitive edge. And then did a lot to ensure that the benefits from these investments weren't just flowing to the executive, but were flowing to workers and small businesses and the communities in which these fabs are going to be built.

So, we've thought about that in a few different ways really around having the right guardrails, around capturing the right kind of economic value from -- and thinking about who benefits and who captures a value from these incentive programs.

I think the other thing we're really keen to do is use this as a moment to really diversify the U.S. industry. We are eager to see international competitors come in and build here on the U.S., like TSMC and Samsung. And so, we've always been really clear that we want to see a diversity of firms here in the U.S.

And in all of the work that I do on our manufacturing policy and our industrial kind of policy at the White House, we love that the U.S. is a site for FDI, and that companies from around the world -- if you look at battery charging, the EV chargers and EV batteries, not just semiconductors, we're bringing the best of the world into America.

MS. FUCHS: So, I would argue we need more technical expertise in government, but we need to bring the technologists together with political scientists and economists. I also would argue that academia today does not support in the way that we need economists and political scientists, sociologists, psychologists, and technologists looking at real-world policy

problems in technology.

When we think about lobbying, the DoD has different interests than the automotive sector. The semiconductor industry has different interests than the DoD or the automotive sector. But when you bring them all around to a table, if you have sufficient technical, economic, and social science, more broadly, expertise, I do believe you can find paths through that that are win-wins.

I think that when we think about the exact question on semiconductors, we are going to need legacy semiconductor. Those aren't going away. We are going to need them in Stinger missiles and in the sensor that tells you a person's in the automobile in your airbag. And we're also going to need the next generation of semiconductors. And here, I may -- I would argue that AI, in continuing to enhance our vision in AI and what we want to have possible there, requires probably a new logic device and probably -- or at minimum, more computational capability than we have today.

And so, we need a government that can tell the difference between those two, and we need the people at the table. If you bring enough of them at the table, then they're going to flush out their different interests, and you can start to balance it out. But you need people who can talk the technical detail and who can talk the economic policy and political science of those questions.

MR. SCHMIDT: So, we ran out of time. I would say that the combination of the CHIPS and USSICA Act, and then now the IRA, are really a game changer in my world. And they

are -- they're profound changes in the way we're going to operate going forward.

But to me, what's more interesting is we have a new generation of thinkers and leaders very well represented here, who sweated the details, got the subtle things right. And that's why I'm so much more optimistic that this is going to work. The government has historically tried these things. There's all sorts of failures. My judgment is these guys' work is going to work. Thank you so much.

(Applause)

MS. EDELBERG: All right, we're going to switch gears a little bit. But in fact, Secretary Raimondo set us up very nicely in her comments or in her conversation, talking about industrial policy in the context of everything that we just heard in our previous panel, about the technology sector, about semiconductors, more specifically in the CHIPS Act, but also about service sector workers, and about how we need industrial policy to make jobs in the service sector better. In fact, she specifically mentioned long term care workers, so I'm hoping that we can get to that.

So, it's not quite as much of a change in topics, as you might think. And so, I have Dani Rodrick, who is a Professor at the Kennedy School, and Mary Kay Henry is the President of the SEIU, perfectly positioned to have this conversation. I'm very excited.

And Dani, you wrote a proposal for the Hamilton Project about how to create a modern industrial policy. Why don't you tell us about it.

MR. RODRIK: Thank you. Thank you, Wendy. Thanks to the Hamilton Project for

organizing this. I think it's really nice that we're talking about the "how" of industrial policy rather than the weather. And I think that -- I hope that the question about "should you have industrial policy or not" is not a question that that we spend a lot of time thinking about it. If not nothing else, the practical, pragmatic reason that -- whether we decide one way or another, governments do it anyhow. And therefore, I think it's much better to do it self-consciously thinking about it and articulating principles, rather than hiding behind some ideologies.

So, the proposal that I've written about, it's a paper called a "Industrial Policy for Good Jobs." So, let me step back here and sort explain where this is coming from. You know, first, why good jobs? I think this is -- for the last 30 or 40 years, you're all aware that our labor markets haven't really been doing very well. It's not that we haven't been generating jobs, it's really about the structure of jobs.

There has been a squeeze in the middle of the scale in wage distribution. That combination of automation, technological change, new technologies, and globalization essentially hollowed out the middle of the distribution in terms of factory jobs disappearing, but also in services, sales, and clerical and various sort of middle class. Traditionally, sort of ladders towards middle class kind of jobs essentially disappearing.

And this has created a significant problem, not just in terms of inequality and its economic consequences, but I think it's a tremendous problem in terms of our society and the way that our polity and our democracies function. By now, there is a significant amount of empirical evidence that shows that the disappearance of these middle-class jobs, good with

jobs, and the squeeze on the middle class, which really has been extreme in the United States among all advanced industrial countries, has all kinds of adverse social health and political implications, including sort of increased support for right wing authoritarian governments, the erosion of democratic values and so forth.

So, this, to me, is really a fundamental problem. The disappearance of good jobs is a fundamental problem that economies face, and it's -- you know, if climate change is the biggest problem for our physical environment, I think the squeezing, the disappearance, and scarcity of good jobs is the biggest challenge that our societies and our polities face. So, that's why I would focus is squarely on good jobs.

Why industrial policy? Well, you know, I think it's -- we often -- when we think about sort of what's happening at the bottom of the income distribution or in terms of economic opportunity, disappearance of career ladders, we think about social policy. We think about in terms of investments in education. We think about transfers. But really, if you think about the only way that you can significantly achieve an increase in good jobs, it's y enhancing the productivity of those jobs. So, it's only by really addressing a productive problem that you can solve this this issue.

And that's really where industrial policy comes in. Because we've talked -- been talking about industrial policy, nobody has actually defined it so far. So, let me define it for you. Industrial policy is set of policies that are targeted at accelerating or just changing the structure of the economy. And typically, we think about it as investing in high-tech sectors, in advanced

sectors, in manufacturing. But the point is to enhance overall productivity of the economy. And that's -- when it's successful, that's what it achieves.

So, what I'm suggesting in my brief is essentially a focus on refocusing industrial policy, in addition to all the concerns you've heard about the geopolitical competition with China, resilience in terms of supply chains, addressing the green transition, all of which are very important. But I would argue, on their own, they're not going to address the central problem of what's been happening in the labor markets.

Take, for example, the focus on manufacturing or advanced manufacturing. If you look at even sort of the countries that have performed the best in this area, essentially, the share of manufacturing employment has been on decline everywhere. And this seems to me to be a fate that is going to be very difficult for the United States to avoid, even if it's successful, in terms of shoring up its supply chains and moving forward in terms of advanced manufacturing and supply chains, all the objectives of the CHIPS Act.

Therefore, as a practical matter, if we're going to be thinking about where the jobs -- and hopefully, the good jobs -- are going to be coming from, they're going to be coming from services. So, I think number one is that we need a shift, at least a complementary focus on thinking about how we focus on the needs of not just international companies, not just global competition, not just manufacturing, not just semiconductors, all of which are going to achieve their own ends but are going to be a very blunt and very ineffective instrument with regard to jobs.

Therefore, we need to focus necessarily on services. There's going to be small and medium-sized enterprises. There's going to be sectors like long-term care, education, retail, health services, and so forth.

The second, I'll just say this briefly, is really about how we go about doing industrial policy. The typical way that we think about industrial policy is that we subsidize things. We just throw some money at things, in the hope of changing private sector incentives. This is not how the best kind of industrial policy around the world -- in fact, including the best kind of industrial policy -- that the United States has practiced.

If you look at the way that DARPA, for example, has worked traditionally, it's not really by simply throwing money at things, it's by enabling organized cross sector collaboration across different actors and stakeholders. That's business, academia, entrepreneurs, interpreneurs, and the government. And I think that model of collaboration where the public sector brings in to the table, around which coordination can happen, some public inputs, but in return there's a quid pro quo that the private sector and investors undertake in terms of undertaking sort of (inaudible) investments here, it would be creating good jobs.

That quid pro quo, I think, is the essential (inaudible) of a good industrial policy. And so, I have some suggestions about how to proceed on that in my specific proposal.

MS. EDELBERG: Thanks. So, Mary Kay, so tell me from your point of view.

MS. HENRY: It's unbelievable, we're talking about industrial policy in the service sector.

MS. EDELBERG: I know. I am very excited.

MS. HENRY: I'm incredibly grateful to the Hamilton Project. I just, like, couldn't believe it that we were having this conversation. That's my point of view, Wendy.

MS. EDELBERG: I'm full stop, I think we should all go home now. I think we should all go home now. So, tell me, what are your highest priorities? What in your mind is a good job? And what are your highest priorities for how we should reorganize the service sector to better serve workers?

MS. HENRY: Well, I thought, Dan did a really good job of outlining the "what is a good job." I think my highest priorities is to think in a meta strategy of the combination of the first two panels with this one, which is if you think about the amount of government investment that is now going to catalyze clean energy sector or the chip sector that we've just heard about, and then Gina talked about the ancillary services, all of the people doing those jobs are going to need care work done in order to perform their work. And it's a crisis for American workers right now, either childcare or long-term care.

And so, my dream would be to think about if you're escalating those two parts of the economy, how do we think about the service jobs that exists now but also need to be created, and make them the good jobs that Dan talked about?

And I just wanted to speak to the technology part of your paper, which is under the Affordable Care Act, we had an innovation grant. And 75,000 homecare workers in L.A. for two years got access to technology to perform their work. Because the Affordable Care Act

incented trying to create good jobs in long-term care as a way to prevent hospitalization and decrease costs for elders.

And 35 percent reduction in hospital costs occurred because the provider was oriented to an iPad that communicated with the primary care physician. And she was allowed -- a black woman or a brown woman generally doing this work, she was allowed to communicate in her own language. So, there were nine different languages afforded access for the worker. And was able to do weight and skin tone and blood pressure, and all the things that she's able to do, but connected to the system to reduce costs.

And the iPads went away when the innovation grant ended. Because we didn't think about, "Hey, it's a test. If we can reduce costs, can we plow the Medicaid dollars back in and arm the 400,000 women that are doing that job in California for the lowest -- for the poorest people in the state?" And then scale that to the entire workforce, which is 2.5 million today, but it's going to be 5 million in three years, as the aging of the population.

So, what's exciting to me is if you think about each one of the stories of the parts of the service sector workforce that are frankly left behind, we were thrilled about the Inflation Reduction Act, but I have to say heartbroken and enraged that we couldn't get the investment in the Care Act that we heard in the first panel.

And we're not giving up, obviously. But you speak to long-term care specifically in the report, and I just think it's a really good example that unless we make a decision as a society to invest, there's no private sector investment that's going to be done on the scale

that's required to provide that work in a way that's a living wage job and allows other workers to do their jobs.

So, Dani, let's talk a little bit more about your ideas for technological development. And the way I read it in the papers, there are really two very different ways that technology can be used by a firm. It can be used to -- or at least among others, it can be used to displace labor, or it can be used to actually enhance labor and make labor more productive.

Can you talk a little bit more about that and your ideas for creating more innovation and the kinds of technology that makes labor more productive?

MR. RODRIK: Yeah. So, we -- it used to be that some maybe 10 years or so ago, if you asked any economist what is the reason while -- for the rise in wage inequality in the United States, the number one reason that an economist will tell you is skill-biased technological change, that there has been a particular form of technological change that has favored the most skilled and professional and managerial classes. And that's why those at the very top have seen their incomes rise, while those at the low or middle parts have not been so lucky.

I think these days, there's a much greater understanding that we need to unpack this notion of technology in a number of different ways, that this technique -- you know, sort of the direction of technological change that is to say "who does technological change privilege is not a predetermined." It depends on a whole bunch of decisions that we make as a society.

Some of those decisions are made implicitly without thinking much about it. So,

for example, in our tax code, we tend to privilege physical capital investment. We have all kinds of subsidies in our tax code that incentivizes investment in plant and equipment. On the other hand, we tend to tax labor because of our particular tax system.

So, what kind of incentives are we giving innovators? We're giving them incentive to, essentially, replace workers with machines. And that's really what automation is. And that's why we've had so much -- partly why we've had so much automation.

But they're also, you know, sort of other ways in which we can give the direction to technological change much more explicitly. So, when we're talking about, for example, the green transition and investments in green technology, that's a very explicit decision by society to say that we're going to, you know, sort of emphasize certain kinds of technologies, clean technologies over dirty technologies. So, that means that we actually think that we can shift the direction of technological change.

So, the idea with respect to thinking about technological change in the context of what it does to labor market, what it does for good jobs, is very much similar. That is to say that, you know, society and employers and innovators face these choices about what kinds of technologies they invest in, what kind of technologies they deploy. Some of them may be -- you know, if you're a retail firm, you may invest in technology that's going to track very closely what your workers, and that's sort of to discipline what you're doing.

Or you can invest in technologies that's going to -- actually, in ways that Mary Kay was saying, which is going through much more autonomy and responsibility, ability to act

on the basis of real-time information to workers and sort of augment the skills that they have.

So, in general, one of the points that this literature in economics has made is that the more you can expand the range of tasks that are produced, the more you can counteract the tendency of technological innovation to displace labor. So, one way you counteract that is by creating a wider range of tasks, making those tasks more compatible with the skills that that lower skilled individuals have, and providing, in general, much greater avenues for customization of the service that it's providing.

So, a retail worker that's actually able to provide much more specific customer assistance, based on AI or digital tools that she or she might have, or a nurse or a long-term care aide that's able, you know, to affect, you know, the food that is provided or the provision of medicine or other kinds of service on the basis of decisions that he or she can take, as opposed to their job being completely rigid.

Those are the tools that we invest in a lot more, thought a lot more creatively about. It would directly go towards both increasing productivity and increasing the livelihood and the kinds of careers that these people have. And it increases productivity because you can then provide these jobs more effectively, you're going to reduce turnover in these firms, you have happier workers. You're going to, essentially -- in long-term care or health services, you're going to reduce, through better service, sort of the incidence of chronic diseases. It would reduce hospital attendants, where of course it would be much more expensive to have people.

So, this is, I think, is just -- you know, it's a direction that we can start thinking

about, where I think we have given very little thought to, because we -- you know, we tend to start from the presumption that technological changes falls into our lap. But of course, you know, it's just -- it's a whole bunch of decisions that are going into that process.

MS. EDELBERG: There are a handful of questions here that want -- they're trying to relate these questions to the current economic environment. So, we have, "by many measures, a very tight labor market, by some measures an exceedingly tight labor market" and "is that enough?" So, is getting workers more bargaining power or more market power just, you know, in negotiations with employers, is that enough?

Like, I guess what I'm what I'm trying to press on is Dani's proposal really comes at this from, well, an industrial policy angle from -- that we need a strategy that changes the way firms do business. But maybe we don't need -- maybe government doesn't need to be involved, and having workers just have more power would solve these problems. Does that resonate with you?

MS. HENRY: Well, if the question suggests that I individually have more power because of a tight labor market, I would say no. Workers need organization and a way to have a say with their employer that's organized. My preference is the form of collective bargaining or unions, which I think Dan says -- I've left out -- because the policy needs to be augmented by other things.

And in the case of publicly-funded jobs by Medicare or Medicaid, other kinds of public investment, I think government can play a role in incenting setting of standards, of

encouraging the ability of workers to be able to join together in union -- which has been written into the Infrastructure Act, the Inflation Reduction Act, all of which, especially as we open these new sectors, I think is a really healthy way to ensure that tight labor market or not, workers can engage in the introduction of technology that is, in fact, complimentary because they have an organized say, is just one example, or can take a poverty job because they have a collective say, and make it a living wage job that the future generations can benefit from, as opposed to the way the care sector or many service sector jobs are today.

MS. EDELBERG: So, should I understand then that bargaining power -- let's say, from a much broader unionization -- is necessary but not sufficient, or is it -- if we had strong enough unions, would that would we have the kind of results that that Dani is hoping, just through a different -- through that change?

MS. HENRY: No, it's necessary, but not sufficient. Bargaining power by itself, without an industrial policy that looks at a tripartite way of -- or the multiple stakeholder way, that Sareem (sic) was suggesting in the previous panel, I think is required, but necessary is what I would underscore.

MR. RODRIK: I think there's a complementarity between the two. I think that's important. Certainly, increasing workers' voice is essential. You need to have, you know, sort of a voice from within that's going to have to want to make these changes. And we know that on its own, it does make a difference in the way that technology is adopted.

If you compare Germany, sort of the way that technology is -- automation, other

new technologies' adoption works in Germany compared to the United States, you know, there are studies that show that it works very differently precisely because of, you know, sort of the German tradition of codetermination and much stronger sort of -- so, that that makes a difference.

But you can make the voice much more powerful by essentially saying that it's not simply about redistributing income within the firm, but it's also actually making workers more productive. And I think that's where the complementarity comes in with the kind of policies that I'm talking about.

I think right now we're coding as sort of what an economist would call a bad equilibrium, which is low productivity jobs and then sort of very high rates of turnover. And very bad jobs that are sort of mutually reinforcing cycle with too many service sector firms essentially resigning to say, "Yeah, I'm paying very bad wages, and productivity is very low in part because turnover is so high. But I'm just making up the losses because I'm paying them very low in any case." So, you can -- you sort of need to move to a higher productivity, a better job kind of equilibrium.

MS. EDELBERG: So, I want to press you on that a little bit, and I think maybe get a little bit more at what is a good job and what a good job isn't. So, in your proposal, you're imagining a variety of incentives created by, you know, a wide ranging national policy that is really being implemented by local agencies or local officials, and that they're working with firms to be able to, you know, give them the resources they need in order to create good jobs,

instead of creating bad jobs. Am I in the ballpark?

MS. HENRY: Yeah.

MS. EDELBERG: Awesome. Okay. So, I want you to walk us through a hypothetical of this local official with their pot of money or their pot of incentives that they've been given, you know, by the federal government. And I want you to walk us through somebody walking in the door and asking for help or money within this program and being told no, and somebody else walking in and being told yes, and why one person hears "no" and one person hears "yes."

MS. HENRY: So, what Wendy is not talking about is another part of the proposal, which -- so that people just don't get confused. So, we've talked a bit about the technology part, which is very much kind of a national federal scale kind of effort, what I call the ARPA for workers.

Then there is a part in the proposal, which is much more sort of local, which -- the idea is to build on existing local, public-private partnerships, where this kind of work is already being done, although perhaps the focus is not exactly this or it's not been sufficiently empowered.

So, let me ask, for example, how many people here are familiar with or at least have heard of the regional challenges of the Department of Commerce? Okay, more than I would have expected, but this is Washington D.C. But everybody here has heard of CHIPS, right? We've been talking about it the whole time.

So, the point is that, you know, if you know about what these regional challenges are, it's an example of sort of, you know, federal attempt to mobilize these local development -- local economic development efforts. Where basically, the federal government says, "I'm going to make some resources available, but you have to come to me with a plan." And a plan shows what you intend to do, who are your partners, what are your local -- you know, your stakeholders, what are your goals, and what's going to happen.

So, his is not hypothetical, this is -- actually does exist. But it doesn't quite exist in -- because a lot of it's just ad hoc. A lot of it exists outside the machinery of the government. It's just locally generated, which is good. But lots of it also is focused on business retention, for example.

So, if you look at some of the best programs of the sort, like the, you know -- sort of the right place in Grand Rapids, Michigan, which is where I think it's one of the most successful examples of basically a local private sector government, community colleges, other sort of small business administration kind of collaboration, locally, sort of -- you know, 80 percent of the job of the people who are doing this is basically working with international corporations, multinationals, and trying to either prevent them from leaving or trying to bring them in. It's heavily focused on manufacturing, like aerospace, or advanced manufacturing.

So, we have -- you know, even when it works, it's actually doing a very good job in terms of bringing in big employer -- big investors, but not necessarily big employers in terms of -- so, I think we need to have -- bring in these habits of collaboration. First, a much greater

support from the federal government. And second, you know, sort of an understanding that we need to extend these towards smaller and medium-sized enterprises and service firms locally.

Where, essentially, the quid pro quo is "I'm providing -- I'm the local economic development district, I'm going to provide you with a bunch of public inputs that might help with infrastructure. It might be business extension services. It might be some credit, and here's where you can get them, all these government agencies. But in return, your soft commitments on sort of the provision or increased supply of what would be by that region or by that context considered sort of good jobs."

So, kind of a quid pro quo of that kind, which is not so different from what the federal government hopes to do in CHIPS and other of these investments, we're basically making these investments or subsidies conditional on certain labor standards or other -- by American standards are sort of being fulfilled.

MS. EDELBERG: I'm still going to ask my question again. So, give me an example of a firm coming in who wants to be a part of this program and you would just say, "That's not a good job."

MR. RODRIK: Not a good job. Well, I think -- you know, so this is about the definition of what a good job is. So, I think there are two ways you can think about what -- how to quantify this or to operationalize this. One is simply by, you know, sort of asking people, the workers, what they think are good jobs.

And when you do that, you get a whole bunch of characteristics. It wouldn't

surprise us. It's not just about pay, it's also about sort of degree of personal autonomy, predictability, or their career ladders, how are the superiors treating them. There's also -- so, a lot -- there's a bunch of these indices that are already in existence. And they're mentioned in the policy brief, if you want to look at it.

The other kind is sort of more objective indicators, where you basically actually look at actual wages, actual rates of turnover, whether there are programs that provide for training or their explicit job career, career ladder opportunities. And the OECD actually does a good job of collecting these statistics for across OECD countries, where you can look at how different countries are doing industry, by gender, and by -- and so on. So, I'm -- you know, I think this is going to be very much a kind of a local effort that's going to build on these local initiatives.

I think which way these initiatives go on I think would it would be a kind of community standard, if you will, that that sort of these -- there will be some expectations about what a good job is -- an evolving one, of course. But there will be some aspirations to begin with, and then they could they could be monitored and revised over time.

MS. HENRY: The thing that provoked me on the local thing, that you're pushing on Wendy, is we still have a situation in that example of -- let's pretend it's infrastructure money or the clean energy transition coming into a local community, and there's two bidders, right? And they have different job standards. And so, the local official goes to the higher standard job. And maybe it does cost more, which we've hinted around at.

What happens in that example is we're still not dealing with the service sector workforce around the new investment that tends towards making things, building things, repairing things. So, what about all the fast-food workers in that community? What about all the homecare providers in that community? How do their jobs get transformed in the local and regional is what made my mind think about it.

Because that local official, in that case, may have given a tax abatement to have Walmart build or to let the McDonald's -- you know, like maybe it was a long time ago a tax abatement. But how are we then intervening through this service industrial policy on transforming those jobs, the 100 million that currently assist the country? That's really what I feel like the policy paper tries to get at. And local officials have less levers, that's part of the problem on the local and regional --

(Audio gap)

And the debate is about the International Franchise Association saying they don't want their franchisees at a state table to raise standards for those jobs. And I think that's a dilemma for us, as a nation, on the service sector, especially the 4 million fast food, the 8 million in retail, the 4 million and care. There's a scale to this problem that we can we can innovate, I think, kind of around the edges. But it really is more of "are we going to decide that it's part of our global competitiveness," ultimately.

MS. EDELBERG: I'm very glad that you mentioned scale. Because I think that's a crux of the issue here, which is that I think Dani's proposal imagines this happening on a very

small scale, very broadly across the country, recognizing that different localities have different have different challenges, and, you know, our best place to put in, you know, different solutions is to meet those challenges.

And so, he mentioned low and, you know, small and medium-sized businesses. And I'm wondering, how does that intersect with a union movement that is probably best placed to be successful with regards to larger businesses. And then you also mentioned needing to create some of these decisions at a higher level and not just locally "one of," and that it has to be done to scale.

I'm sort of dancing around a large point here. If either of you, does it -- I'm going to stop talking.

MR. RODRIK: No, I mean, I think this is -- so, yes, I mean I think we need national standards, I mean, in a lot of these areas. But it again goes back to the complementarity issue, that national standards on their own are going to create some costs.

So, if you go to France, you know, you have much higher standards of minimum wage and so forth. But it has created a significant problem of youth unemployment at the same time. So, it is very -- it's proving very difficult for school leavers and young, relatively unskilled workers to find entry-level jobs. And so, that's the, you know, trade off, which is that -- you know, the tradeoff between sort of wanting to mandate high standards.

I do think we do have to start by that. Because one thing we know from sort of how new technologies and climate change have worked, for example, is by actually beginning

with the standards. And then that forces in innovation to meet those standards. I mean, that's exactly -- I mean that's what California is doing right now, right? Or has been doing for a while.

So, maybe not prospectively, you know, it's -- so I think that has to be part of the picture. But then you have to have mechanisms whereby -- you know, that increases in productivity that's going to validate those standards down the line, that those mechanisms are also in place. So, again, back to this issue that, you know, it's not either/or. I think they have to work together.

MS. HENRY: Well, just on the union movement, I think we're -- this conversation is happening at a time where there is more worker organizing than in my 40 years of being in the labor movement. and there is a level of dissatisfaction that is expressing itself in people organizing in one coffee shop, across Starbucks, in Amazon warehouses, you know.

So, I don't think it has to all be one way. The wonderful thing about our country, in my mind, is that there can be innovation in small areas that gets scaled. And what we've seen from the Biden Administration is a willingness to take risk to do radical government investment and insist on equity at the same time, which no administration has done in our lifetimes or in a century.

So, I just think both things can be possible at the same time in understanding that, you know, 45 percent of the American workforce has no legal right to organize. Because they are not employees under the old act that was written, you know, 150 years ago. And more than half of the current minimum wage workforce are people of color. And that's not an

accident. And 80 percent of the minimum wage workforce is women. And that's not an accident.

And those things aren't going to change by the market. The market isn't going to improve the social mobility problem and the economic inequality problem that Erica talked about. And so, I think the thing I've been struggling with, frankly, and I think about it in a audience like this is how to connect what I consider to be an injustice that fuels me, and understand that that's not everybody else's goal. And how does the industrial policy establish goals that business leaders would support, that are going to also impact the terrible, you know, structural racism that we have, that may not be motivating American business to fix, but that there's got to be some common ground.

Because we know that the level of polarization that we're experiencing as a nation, and the inability for more than half of our population to expect that their children are going to do better than we've done, is a crisis. And I think this administration is trying to intervene on it. And I guess what I'm -- I'm supporting this notion of "how do we think about a service sector industrial policy that the federal government could eventually work on," but that there could be innovations in places that would lead people to think, "Oh, yeah, a fast-food worker isn't destined to have a shitty job." Like, that job shouldn't be a bad job.

And there's a way in which I've experienced in working with these workers that there's kind of a popular imagination that "oh, that's just an entry level job that a high school kid does and then they move on." Well, that's actually not who's doing those jobs right now.

And that that's not happenstance. That's a set -- you make the case in the paper that that's a set of decisions that we've made as a nation, you know, through our government, and by allowing corporations to operate in our nation differently, by different rules, than they operate around the world.

MS. EDELBERG: And one of the things that I thought was very powerful in the way you describe good jobs, that really resonated with me, is this idea of a career ladder. So, you know, a sad way of describing, you know, the kinds of jobs you were you were talking about is "dead end jobs."

MS. HENRY: Yes.

MS. EDELBERG: Basically, there's no room for improvement. There's no room for within that job to grow. And it's made worse by algorithms. So, even if you wanted to go to school, outside of that job, there is no bloody way you can earn a living and do anything else. Because you are on call to earn a paycheck. And that's the other thing that's sort of happened over the last 10 years that's shocking for tens of millions of workers, you know.

And I'll give you the last word, Dan. So, how do we create these career ladders? Like, it's one thing to make an individual job more productive. It's another thing then to create room for growth. How should policymakers think about that?

MR. RODRIK: Well, I think, you know, in the first place, of course, you know, these decisions will have to be undertaken by private firms in the private sector, and hopefully when workers do have a collective voice, whether in the small firms or not.

For the small firms, by the way, I think -- or, those, you know, who are not unionized or is not possible to unionize, I think thinking seriously about sectoral bargains, where you said -- you know, have bargaining at the level of sectors and setting minimum levels there, I think, is one alternative to thinking about unionization.

But ultimately, it will have to be, you know -- the firms will have to be convinced that having happier workers who stay for longer are actually sort of, you know, productive decisions. I mean, we have examples in the private sector of firms, even in retail or in food services, that have actually chosen that way, following what they call good jobs strategies. But, but it remains relatively limited.

So, I think one role for the government is actually to create these experiments, allow these experiments to thrive, and to have examples where these things can work and disseminate those examples.

So, that was another role in the paper that I was saying, sort of connecting the federal level of technological investments with this sort of lower level local experiments is giving, sort of establishing a platform in between where technology can be disseminated. It's sort of like the old American tradition of agricultural extension and the land grant colleges, but working both ways, both from the local and the top.

So, these are things that are all in the American tradition of economic policy. And I think, you know, some of us have forgotten and others like me are just now learning.

MS. EDELBERG: Well, thank you very much to Dani Rodrick and Mary Kay Henry.

And thank you all for being here. And for the many hundreds of you online, read the papers.

Read the papers.

(Applause)

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I, Carleton J. Anderson, III do hereby certify that the forgoing electronic file when originally transmitted was reduced to text at my direction; that said transcript is a true record of the proceedings therein referenced; that I am neither counsel for, related to, nor employed by any of the parties to the action in which these proceedings were taken; and, furthermore, that I am neither a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

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