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US POLICY IN A CHANGING NUCLEAR LANDSCAPE

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PANEL 1: THE CHANGING NUCLEAR LANDSCAPE

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KEYNOTE

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Ranking Member, Armed Services Committee, U.S. Senate

MODERATOR: MICHAEL O'HANLON

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PANEL 2: THE WAY FORWARD FOR US NUCLEAR POLICY

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KARLIN: Good morning. My name is Mara Karlin. I'm a visiting fellow here at Brookings, and I am really excited for our morning together. It used to be -- I'm a professor, it used to be that when I hit the module on nuclear weapons, I felt like many of my students would start falling asleep a little bit. And maybe that was probably good for the world, less good for my classes, but probably good for the world.

We're not in that place anymore. And I think as you'll hear throughout our different conversations this morning, this landscape on nuclear issues is changing rapidly. And I think you might find that it's changing in ways that should be a little bit worrisome as well.

So our plan for this morning is we're going to start with our diagnosis panel. Help us understand what's going on, how and in what ways is the nuclear landscape changing, particularly looking at a couple key regions. Then we'll get to hear a moderated conversation with Senator Jack Reed, the ranking member of the Senate Armed Services Committee.

And then some of my colleagues are going to come up and they'll help us a little bit more with prescription. And now what do we understand the implications to be here, particularly as it relates to the United States? So I'm really excited to introduce this panel. We've got Tom Wright, who is a senior fellow here focused on security strategy and technology, and he spent a number of years in government at the White House dealing with a wide range of security and strategy issues.

Next to him, we've got Suzanne Maloney. Suzanne is the vice president and director of Foreign Policy here at Brookings. She is a serious Middle East expert and one of the foremost experts on Iran in the entire world. And then of course we have Andrew Yeo who is a senior fellow here focusing on Asia and in particular on Korea, and where he is one of the foremost global experts.

So we've just got a tremendous panel to try to explore try to explore these issues. So I'm gonna start by asking my colleagues to give one numerical answer. All right. So they focus on Europe, the Middle East, and Asia. And so what I'd like to hear from you all, on a scale of one to 10, how worried are you about nuclear issues in your region?

WRIGHT: I'm like a six.

KARLIN: Okay.

MALONEY: Today, specifically, I'm probably at a nine, but I think that's perhaps an overstatement. If one were to take out the, the drama unfolding right now.

KARLIN: Okay. And Andrew,

YEO: I'm at a six or seven. I'm not just saying that for my middle school kids, but I think we're there for Asia.

KARLIN: This panel will blow up on TikTok, no doubt. All right. Thank, thank you for those pithy answers. Do y'all wanna give us maybe a moment of telling us why, why are you at that place now? What's been changing? I'm guessing that you're at a higher place now than you would have been if we were having this panel a couple years ago. Tom.

WRIGHT: Couple of years ago, I probably would've been like an eight. It's true. But you and I were, in government in 2022 when I think we definitely felt we were on the cusp of the first sort of use of nuclear weapons since World War II in by Russia, against Ukraine. And we first began to get concerned about that when we got information in June of 2022 that went in different cycles over a few months. It came back in the fall and culminated at the end of October. But I think that to many of us was a searing sort of moment to realize that actually the norm of sort of non-use is not fixed. And we have done a lot of work on how to deter nuclear use against an allied state, but we actually didn't really have much conceptual work about how to deter or stop nuclear use against a non allied state where there is no Article Five.

But even if that happened and it wasn't an ally, that is obviously still a world changing event that would fundamentally change the nature of geopolitics because if Russia had done that and gotten away with it then it would normalize and tell other countries that you can use, nuclear weapons in conflict.

And if they, if, if they did it and it didn't work or resulted in a larger conflict potentially involving the United States, obviously that would be very problematic in its own way and very, very significant. So I think, that didn't happen. But I think why it didn't happen is a little bit unclear.

I think the main driver behind it was that Russia was going to do this if it felt it was on the verge of a catastrophic defeat, the dissolution of the Army, or some major defeat in Ukraine, and the lines ended up basically freezing. I think our deterrence efforts did have an effect, like we communicated to them that the consequences for Russia will be catastrophic and it will create national interest for America that hadn't previously existed because we have an interest in nuclear weapons not being used in this case.

And so I think right now it's relatively, the reason I said it might be a little more alarmed is right now I think it's a little bit more stable, but I don't actually think the risk has gone away because that dynamic is still, there in the background. I don't think Russia would use nuclear weapons to win the war, but I think that, that, that they have it does come into their planning in some ways.

But there's other things they're doing too. This has been reported by, I think in the threat assessment last year, that they have are looking at ways of putting a nuclear weapon in space that could basically disable, almost all satellites in lower earth orbit and wreak havoc with we havoc with civilian life. We've had the IIC missile, which is the multiple entry vehicle for conventional, which can't really just be distinguished from nuclear. So that's a little bit of a, a side issue maybe, but it's still significant. So I think there's lots of different vectors of instability. There. And then, as I'm sure we'll get into, Russia's also part of a global, we, we see the buildup with China, increasing integration with China. I'm sure. We'll, we'll, we'll get into all of that too. So I think definitely maybe more worried than three or four years ago.

KARLIN: It's a very good point. According to the media in October, 2022, the intelligence community in the United States warned that there was a 50-50 chance that Russia would use nuclear weapons. And that's about 50% higher than I think anyone would ever like it to be.

So, Suzanne, you gave us a nine in terms of how concerned you are about nuclear issues right now. Can you share a little bit more?

MALONEY: Well, as you define nuclear issues, I think we have to have in our minds what's been playing out over the course of the past several weeks. The buildup of American forces in and around Iran largely in response to protests that erupted in January, but the, since that time efforts by the Trump administration to try to achieve.

A longer and stronger new nuclear deal with Iran having walked away from the original nuclear deal that had been negotiated during the first term of the Trump administration. Those negotiations took place, as we all know yesterday in Geneva. There seemed to be dissatisfied rumors coming out here in Washington in terms of what it was that the Iranians put on offer, which did include apparently some fairly new concessions on the part of the Tehran for their nuclear program, but did not extend to other issues that the administration is seeking.

Some kind of significant concessions from Iran, particularly around its ballistic missile capabilities. And so, I think we will wait and watch over the course of the days to come. But I, but given what we saw play out in June, which was I think the successful coercive use of coercion in order to stop proliferation really set back Iran's nuclear program quite significantly.

And for the first time in more than 20 years, Iran is no longer enriching uranium. The fact that the administration now is poised to strike yet again, I think may leave us in a situation of considerable disarray within Iran, may provoke serious retaliation against some of Iran's neighbors and allies and partners of the United States, not just Israel, but of course Saudi Arabia, the United Arab Emirates, and Qatar as well may disrupt tanker traffic and oil exports from the Gulf and may lead to a larger crisis, which could be quite dramatic and quite messy.

So I think that that is the, the lar largely the basis for my high ranking here. But I think that there's a broader set of concerns about proliferation in the Middle East that we have to take quite seriously. And they're very much framed and I think accelerated by exactly what Tom had to say, this sense in Europe, that there is that there has been a, the, at least the contemplation of the first use of nuclear weapons in decades, and that that in fact is a conversation that is being watched and, and studied around the world.

Of course, there has been a, a creeping proliferation, which has been largely turned in the Middle East over the course of the past several decades. When we think about Syria and Iraq, which were once upon a time, very serious concerns, they no, no longer are and no longer will be in the near future, but we do, of course now have.

A civil nuclear program in the United Arab Emirates, which of which adheres to the gold standard, but a new conversation among the Americans and the Saudis about potentially developing a nuclear program there that might, in fact permit pathways to enrichment, reprocessing of spent fuel and other things that would be of some potential proliferation concerns.

So I think that, setting aside the Iran issue, which of course is difficult to do today, there are real reasons to watch what's happening in the Middle East and it extends beyond the Middle East because of course, what we've also seen in the, in recent years is these announcements of agreements between the Saudis and the Pakistanis.

A formalization of what we all understood to be true in terms of the, the kind of nuclear deterrent that Pakistan might provide to the Saudis. And the same on the part, somewhat

some more subtly between the United Arab Emirates and, and India. And so, to the extent that we see this kind of extended deterrence not being provided by the United States, but potentially by other nuclear actors, I think that adds to the instability that Tom spoke about.

KARLIN: Yeah, thank you for that. So, a real reminder that this does not just, not only not involve the United States, but also is looking trans-regional and bringing, bringing in others Andrew, you gave us a six-seven answer.

YEO: Yeah.

KARLIN: Talk us through that.

YEO: Well, let me first just, I wanna bounce off of what Suzanne said, and it's really important about how much context matters, 'cause if you asked me in 2017 what number I would give the region, I would've said nine because of the escalation in North Korea. But it's not that North Korea's capabilities have, they've improved, it's actually gotten worse. But because the focus is so much on the Middle East or elsewhere, that, that's why one of the reasons why I gave either a six or a seven.

But but there are really two concerns here. One is proliferation with our regional adversaries, China and North Korea in particular, but also Russia. We sometimes forget that Russia is also an actor in Northeast Asia. And then the second is about us credibility as it relates to extended deterrence for our friends.

So let me just expand a little bit about proliferation with regional adversaries. Of course, China is, is the big focus here. The number of nuclear warheads between 2020 to 2025 has tripled from 200 to about 600. That's still far less than the United States, 5,000 plus nuclear warheads. And therefore, China's strategic capabilities may not be a threat a threat to the nuclear balance today.

But down the road for China, they've been developing nuclear weapons with little transparency. Without any without any known limits. So the trend does not really look good. They're on pace to develop out a thousand nuclear weapons by 2030. Then we have North Korea, as I mentioned, they have an estimated 50 to 70.

Nuclear warheads to date, and they're also not scaling back. There was a ninth party, Workers Party Congress and Kim Jong-un said quote that, that their nuclear, their nuclear power status is permanent and irreversible. So again, reiterating that they're not giving up nuclear weapons.

And we've seen the expansion of nuclear sites like the Yongbyon facility recently, and then I also mentioned Russia because of the expiration of New start that gives us less assurance about about nuclear restraint from, from Russia. Now, when it comes to credibility of, from the U.S., understandably, China's nuclear development has spooked Tokyo and Seoul to the Trump administration's credit, U.S. officials have repeatedly conveyed their commitment to extended deterrence for allies. But of course, the mercurial nature of President Trump does cast doubt on U.S. credibility, and it's led to conversations in Tokyo and especially Seoul about moving in a nuclear direction.

So even if, there, even if the nuclear balance in Asia has yet to shift significantly in favor of our adversaries, the perceptions of any shift will be felt earlier and more acutely by Japan and Korea if they believe that the US is less committed to regional security. So, right now, again, the six or seven is because of there are these looming concerns, even if the strategic balance hasn't shifted today, I think it's just because there hasn't been any kind of crisis at the moment. If there is a crisis, we could shoot up to a nine or a 10.

KARLIN: Thank you for that, Andrew. I wanna push you a little bit. You started to walk us towards how Tokyo and Seoul are feeling, which is filled with trepidation. And I've been struck by polling in both places that show in Seoul high support for getting nuclear weapons. I think it's about 70% or so. As a relatively recent polling and in Japan, very high percentage of Japanese wanna relook their non-nuclear principles. So that seems to be a step going a certain direction also. What, how do, how do these things play out in those two capitals?

YEO: So, first, lemme just say at the outset, I don't see South Korea or Japan acquiring nuclear weapons anytime soon. But if the US nuclear umbrella isn't assured, they may feel the need to compensate for declining US credibility. So in South Korea, South Korea and Japan are actually in different places. So South Korea, public opinion in favor of, of its own nuclear armament has been over 70% for the last five years or so.

The last poll I looked at was one from the Assan Institute in November, 2025, and it was 76.5 percent. So very very high. And the discussion there has ranged from, perhaps we we need to redeploy US technical nuclear weapons to. Just outright building a bomb. Or recently what's been discussed much more heavily is this idea of nuclear latency.

The ability to rapidly develop nuclear, nuclear weapons using existing civilian technology and expertise and fizzle materials. And we're seeing the Koreans are really, asking the United States to be able to process, enrich their own uranium, which the Trump administration has actually agreed to.

They're still negotiating what, what those details look like. But, a former defense official once told me during the crisis in 2017 with, with North Korea, that he, he was once asked by a Korean citizen, what can you do for us to protect us if there's a nuclear attack from south from North Korea?

And he said that he, he felt assured. He, he thought that the US is committed to our defense and to extended deterrence. But the response from him was really, well, we have to trust the US because we don't have our own nuclear weapons at that time. He said he, he actually felt quite ashamed that I'm, I'm a high level official in the Ministry of Defense, yet the best answer I can give is we have to trust the us.

So it's about agency, it's about, being able to hold onto your own being, being the masters of your own security, I think is what's at stake. And for Tokyo, yes. Recently the LDP had said that they wanted to, maybe revise or relook at the three non-nuclear principles. But there is a huge backlash though, from the public.

So I think the public is still very much opposed to moving the direction of, making nuclear weapons more permissive. But these conversations are taking place among the leadership even though, even if they're much behind South Korea. Yeah, I think I'll stop there and we can discuss further maybe in the q and a.

KARLIN: Yeah. Thank, thank you for that. It's useful to sit in these different capitals and see how they are perceiving this situation. Suzanne, you started to tell us a little bit about what's, what's going on with Saudi Arabia and Pakistan. I've personally been astonished at how little attention this gets where Pakistan is effectively giving an extended deterrence commitment to Saudi Arabia.

Do you wanna add a little bit about what Riyadh's thinking might be at the, on that front? And if you also wanna add, how's Jerusalem thinking about nuclear weapons right now? Or maybe how Tehran is as, as well?

MALONEY: Well, I think from the Saudi perspective they are also motivated to some extent by some of the same dynamics that Andrew described about this sense potentially that the United States is no longer the partner that it had been for much of the history of the, the relationship between Washington and the Kingdom.

That sense of confidence in the fact that America would come to the kingdom's defense was. Fairly ironclad, I think up until 2019 when Iranian backed missiles and drones struck Saudi oil facilities in an unprecedented attack. And there was really no response from the Trump administration at that time.

Obviously, that was a prelude to other strikes by the United States on Iranian forces, including the assassination several months later of QM Soleimani. But I think that that crystallized for the Saudis, the fact that they were very much on their own, that they, like other capitals needed to be confident that they could provide for their own defense against adversaries that in, in the case of the Middle East, were trying to pursue nuclear weapons.

And so they have always had a relationship with the Pakistani government. There has always been a presumption that there was a kind of tacit agreement that was not to be made public, that the Pakistanis would make their resources and their weapons available to the Saudis if and as needed. But now of course we have a kind of more formalized and public statement of that from, from Pakistani officials.

And I think, it coincides with the Saudis, both because of their own economic plans, but also because of their growing strategic role and assertiveness, not just in the Middle East, but more broadly around the world, that they see nuclear capability as important to their own development.

Important to their own strategic position. And at a time where we have, it, it's, it's still fairly nascent, and I wouldn't overstate this, but there is a growing rivalry between the Saudis, the Emiratis, the Israelis. These tensions create more factors of instability, I think in the region.

The, the Iranian nuclear threat will always I think be first and foremost in the minds of, of all of the Arab states, of all of the major powers in the Middle East, including, and especially of course, Israel. And frankly, that will probably continue irrespective of what happens over the course of the days and the weeks to come.

We know that the Iranian nuclear program was actually first established by the, the monarchy and the Nixon administration was quite concerned about the proliferation risks and, and what the intent of that program would be. I, we can't predict what's going to happen over the next few weeks or even beyond in Iran, but I think that Iran, any Iranian government, will see itself as a great power.

The, the revolutionary regime first shuttered the nuclear program in 1979 and very quickly picked it back up, working in secret for many years to try to reestablish the program and to ensure that they had some kind of a deterrent in part because of their own experience with the use of chemical weapons by Saddam Hussein in Iraq.

So I think, one of the challenges that we have, and it really comes back to this town. Is if, and as the United States is not seen as a reliable partner and ally to those countries with which it has had longstanding and very important relationships that have helped preserve order, that have helped to avoid conflict, that we are going to see many, many countries look to what their options might be, whether that is the development of their own resources or these kinds of proxy relationships with other parties that might have the weaponry.

KARLIN: Absolutely. So what we're hearing is profound uncertainty in Asia, acute uncertainty in the Middle East, and these issues are getting a lot louder in Europe as well. It is striking, in particular a couple capitals,

Tom, where I want you to, to sit in and tell us what, what they're thinking. Berlin, we're hearing a lot from the German chancellor looking at what it might look like to have the Brits and the French offer some sort of form of extended deterrence. Poland where we're hearing the prime minister talk about how his country must pursue nuclear weapons. Can you tell us a little bit about, about what, what's happening in those different spots?

WRIGHT: Yeah. I just wanna make one comment on Pakistan first, because in addition about Suzanne said, at the end of the Biden administration, I think there, there were sanctions imposed on four Pakistani companies that were involved in basically building an ICBM, the Pakistani ICBM capability. Which, the then Deputy National Security Advisor Jon Finer gave a speech next door in which he laid out the declassified intelligence on that. That has basically gone completely silent over the last 18 months. President Trump has developed quite a close relationship with the Pakistani government and with Munir, the, the top general who he's met sort of several times. No one to my knowledge in the press has asked any sort of serving official, if they still stand by the assessment that Pakistan is actually pursuing this capability. And we don't really know if the sanctions are -- the sanctions are still on the books. Whether or not they're being enforced or not, we just don't know.

And, and that is striking when, Secretary Rubio talked the other day about Iran looking to build sort of an ICBM capability, which obviously is a way, way, way down the road because they don't have nuclear weapons, and because it would just take them a very long time to develop that, whereas we have another country where actually that's much closer. Now, I'm not saying they're identical in terms of threat level or anything at all, but I, I do think it's another sort of example of these multiple vectors of instability and pressure, which is something that I think was surprising when it emerged. And it hasn't gone away. All of these are are problems that gather, right. It will take five, sort of seven years. It's not immediate. But but it's still a pressing issue.

On Europe. I think the administration's position is that Europe ought to do more for its own defense. That Europe is not really of all that much strategic interest to the United States. Right. That they're capable of doing it. And that, there is ambiguity and hesitancy around whether or not if Europe was attacked, the US would really, go to war with Russia to defend Europe. Now there's been different contradictory things set by different officials.

They have basically said they would uphold Article Five, but also noted it's ambiguity. So that's part one. Part two of their position is as Bridge Colby laid out in, in Munich, or sorry, the, I think it was the NATO ministerial recently in Europe, that the US will continue to provide extended de terms.

So we're meant to believe on the one hand that for more limited contingencies, the US will be risk averse and not really do all that much, but for the most dramatic. Expensive contingency. The US is all in. And of course, article five, the nuclear extended deterrent is not just defending against nuclear attack, it's also potentially using nuclear weapons against a conventional attack.

Right? So if Russia invaded the Baltics, that would be on the table there. And so I think there is, doubt about it and that's why you're seeing these sort of conversations that you mentioned in Poland and elsewhere on it. It's different I think, to Asia. I think they're not as far along as the South Koreans, and I do think, to me South Korea is a unique case.

It has broader repercussions on the region and Japan and China, but like they've got a very particular sort of problem that I don't think is replicated in Europe. Europe's problem is a little bit different. So I think they're further away from, allied proliferation. The French position I think is interesting, which has been a a brief moment on, because their position is not that they would replace the US as the provider of extended deterrent, but they are looking at ways to broaden their understanding of the national interest, right.

To say that nuclear weapons would play some role in their broader European policy. So for example and just if you, if you think about it, that France might consider. Using these weapons if their vital interests were at stake, we know that if Paris was invaded, that would be triggered. Right?

That obviously. But they are also saying, well, maybe there are broader European threats to European security that would also be vital interests. And so it wouldn't be a cast iron guarantee, but it would be a factor. Right. And so I think they're looking at different ways of, of developing that. The UK I think is maybe in a slightly different sort of place on it, but there are definitely cons.

There's considerations being given to options in Europe that wasn't previously the case because ultimately, allies need extended turns to work a hundred percent of the time, not just 50% of the time when one party's in power, right? So that, that's, and they can't rectify that at a very late stage.

They need to rectify it early. Like, if they think it's gonna be a problem in six or seven years, the time to make preparations will be now, right? Not in like six or seven years.

KARLIN: Yeah. Thank, thank you for highlighting that. I'd like to turn to our audience questions. So I've got a couple questions that came in online and I'm guessing that there are probably some questions here.

So while you all begin brainstorming we'll, we'll come around with a microphone in just a moment. Let me throw out a quick combination to you, Tom, of some good questions that came through. How do you think the US government would perceive a more autonomous European nuclear deterrent, and how realistic even is this? Can the, can the Europeans actually get there?

WRIGHT: To some extent the French are obviously there now, right? But not in a, not in a broad force that is capable of an extended deterrent.

KARLIN: Yes. The French and the Brits.

WRIGHT: Yeah, well the Brits are, I think, are more integrated with us in some way. So you could argue whether or not that's fully autonomous.

I guess I do find it a little bit curious that sometimes in these conversations, not in our conversation here, but in the broader conversation, the worst case scenario is often like democratic ally governments getting a nuclear deterrent. Right. That is not the worst case scenario. That might be, it might be difficult, there might be problems, but the drivers of the problem here are the Chinese buildup, the Russian buildup.

They're increasing alignment as US adversaries and rivals are competitors with the North Koreans as well. And sometimes, the Iranians and a lot of other different issues that arise. And if allies decide at some point that the stability of their deterrent relies on their capability.

I think that is a, potentially a problem with lots of different aspects, but we should work through that in a rational, methodical way rather than thinking, boy, like, the, the Russian and Chinese actions are manageable, but the real disaster will come if. If there's allied proliferation, I, I do agree it's better to have extended deterrence to be clear on that.

But I think we are getting into it, a different phase. When we need to think pretty systematically about, about all the, all the different potential difficulties.

KARLIN: It's a really sobering point. You opened telling us just how worried the Biden administration was about potential Russian nuclear use in October, 2022. Andrew's talked to us about Beijing tripling its arsenal in just a couple years, and there's a whole lot of fuzziness and opacity about how they're thinking about this arsenal. And Suzanne, of course, has shown us just how close we may be to yet another conflict in the Middle East tied, tied to these issues. So that, that's a sobering, helpful point.

Alright, let me turn to my colleague. I see we have a question right up here. A fellow in a brown jacket. And please do make sure your questions end with a question mark.

AUDIENCE QUESTION: Hi, I am Kevin Cirillian. I'm the founder of Meet the Future. And I just had two quick questions. The first is with regards to space. You mentioned it, Tom, in your first answer. It seems that particularly with nuclear weapons, that more and more countries, including our own or actively thinking about that possibility, how is that changing the geopolitical negotiations? And secondly, with regards to artificial intelligence, it used to be that humans, Suzanne, are, are the ones making the decisions, but now artificial intelligence systems might be making the decisions before humans do. How are, how is that impacting this issue as well? Thank you.

KARLIN: Great. Thank you for those pithy questions. Please.

WRIGHT: On the space issue I don't think there's really much negotiation on it. That's part of the problem, right? We don't really have, we're almost in a post arms control sort of environment.

I think there's various things that we can do. None of them like perfect to to address that or probably can't get too much into detail on that. But I think, I don't think we're gonna see a real multilateral effort because ultimately I think from the Russian point of view, this is something that they believe would be useful to them in certain contingencies.

And they have fewer assets in space, obviously, than we do, or that China does.

KARLIN: Thank you.

MALONEY: Thank you so much for the question about AI and nuclear weapons. I, it gives me an opportunity to plug some of the work of my colleagues here at Brookings. Our China Center has had an ongoing track two dialogue for seven years now with Chinese counterparts very much on the, on these issues looking at AI and military use overall. But we've specifically spent a lot of time on on the nuclear question and a lot we've built a glossary of trying to understand mutual terms. We've done a lot of work to try to ensure that we, we've thought through different types of scenarios in, in, in, in the sense of how AI can implicate nuclear use.

And one of the, the important aspects of this dialogue has been that it contributed to the Biden Xi agreement in November, 2024 to maintain humans in the loop in nuclear launch decisions. And the teams on both sides are really looking now at how we might be able to expand that kind of agreement to the P5, that this should be something that all of us as humans can agree that machines should not be making decisions about the use of nuclear weapons.

So I hope that that's work that we can continue to progress and I would really commend there's a lot of information about that project on our website that you can find.

KARLIN: Terrific. Thank you. We've got a question right up here in the front.

AUDIENCE QUESTION: Thank you. I'm Harlan Ullman. I'm a commissioner on the Congress's future Navy study. Let me expand the discussion to the United States. New START is over. We're in the process of rebuilding our nuclear forces, let me say at huge expense understates the issue. If we go above 1,550 warheads, the only place we're likely to expand are in B 20 ones, which are probably gonna cost a hundred billion a piece, a billion a piece, or sentinels, which don't seem to work right now, and Golden Dome.

So I wonder how you would look at what the Americans are likely to do if we lift those warheads, given the fact that we're really paranoid about China, that Russia has already modernized, and that quite frankly we are not necessarily in good shape in our own programs.

KARLIN: So that is a terrific question and in particular in the next panel, I think is going to address it quite, quite smartly.

I might offer just a 30-second response, which is over the last few years, I think, not least because of many of the topics we've discussed, the US has decided to make a concerted investment in modernizing its nuclear arsenal. For the US this was often a two party game. The US versus the Soviet Union slash the the Russians, right.

It grew more complicated when you had, obviously the North Koreans involved. There were these questions of Iran and then over the last few years, as Andrew highlights for us, the Chinese have come to the fore. And so what had been more of a two player game is at a minimum, a serious three player game. So if I had to hypothesize, I would expect you all are no doubt tracking that the defense budget is supposed to surge quite considerably.

I would expect to see a lot of serious investments on, on nuclear issue, on, on nuclear modernization, the triad and command and control. We have a question right over here in the middle.

AUDIENCE QUESTION: Thank you. Thank you. I was just wondering, given the prevalence of non-state actors operating within the boundaries of Pakistan, and especially given the outbreak of conflict between Pakistan and Afghanistan recently, I was wondering how what the likelihood is that these, that Pakistan's nuclear weapons arsenal could potentially fall into the hands of non-state actors?

KARLIN: Who wants to take that one?

WRIGHT: I, I would just say I have no reason to think that I mean I may be a risk, but it's not, it's not something that I've seen reason to be particularly concerned any more than normal concerns about nuclear leakage.

KARLIN: Alright, so we've got about three minutes and we have a couple good questions.

So we're gonna take them and then let folks answer and do wrap up. So I see one right in back. And then there was the fellow right up front, and then the third one right there.

AUDIENCE QUESTION: So I was quite interested in the comments about Pakistan now being a guarantor of Saudi situation. Extended deterrence is by its nature, uncertain. I don't know if I were a Saudi, I'm not sure I would be particularly ha or, or, cons believing that the Saudi, that the Pakistanis would come to my defense in, in some situation. I I'm wondering how, how do people see it there? What do you think is the is the reality of all that? Thanks.

KARLIN: Great. Thank you for that pithy question. Got a fellow right up here and then right over there.

AUDIENCE QUESTION: Thank you very much, Mara. Darryl Kimball, arms Control Association. Very good discussion. One other new factor that could upset things is the possibility that the United States might resume nuclear testing.

President Trump has said, he will, has ordered the, the the system to prepare to resume nuclear testing on an equal basis. There are charges not fully substantiated that China may have conducted a test in 2020. How would the resumption of nuclear testing by the United States affect every one of the three regions that you're talking about?

KARLIN: Great. Thank you for that. And then last right up here.

AUDIENCE QUESTION: Hi. Thank you so much. Obviously in the recent years we've seen the US move more towards an isolationist stance. We're receding from being the world,

we're somewhat receding from being the world's policeman, and you're seeing some of these alliances, not fragmenting, but cracks being shown.

And then in this new era of increased nuclear per proliferation and increased threats, I'm curious what role should alliances play in this new era of a return to great powers and nuclear per proliferation, especially as the power of some of these international institutions has waned and how would the United States navigate that in the years to come?

KARLIN: Fantastic mix of questions to wrap us up. So, Andrew, we'll start with you if folks wanna tackle, Suzanne, I'm assuming we wanna tackle how the Saudis are thinking a little bit about this. Of course, Pakistan and Saudi militaries have had a very, very longstanding relationship. So we've got that. How's your region thinking about nuclear testing and then what do alliances look like as we are having these conversations?

YEO: Yeah, let me actually first tackle the Pakistan Saudi question because it's really about a matter of trust. And you're right that this, can the Saudis really trust the Pakistanis? You have alliance, very strong alliance relationships like US South Korea, or US and Japan, and the US South Korea relationship, even just three or four years ago, the Koreans couldn't really, there was this trust gap, I think, with the United States to the point where they had to have discussions and negotiations, which led to something called the Nuclear Consultative Group to reassure the South Koreans.

So if it's that hard among friends that have been all allies for 70 years, you can imagine, how much trust the Saudis would actually place on the Pakistanis. On the Darryl, on the, on the nuclear testing, that's a terrific question. And I think because Trump had stated that he would, go back to nuclear testing and because of now the revelation that we've been hearing about China having possibly conducted a nuclear test in 2020, that's a real danger.

And if that were to occur, I think you would be definitely receding a a, a norm, the idea of a nuclear test ban that's been in place that would be highly problematic. And for the region, of course, we think about North Korea. North Korea hasn't conducted a seventh nuclear test, but it would certainly give them license or, and create a permissive environment to allow them to do to conduct that test.

And on allies, I, I still think, despite tensions and among the US and its allies these days, as I mentioned, we are seeing the Trump administration continue to reaffirm. US extended deterrence. I think that's that's still important. I, I I do think South Korea and Japan though, are having these conversations because of the cred about the the gap in credibility right now with, with Trump.

But but these are conversations that I think you need to continue having. I would hope that the alliance would continue that Japan and Korea don't go in the nuclear direction 'cause that could open up a whole can of worms. You already have a nuclear China, a Russia, North Korea. To have add two more countries to that mix just is, is is not good.

KARLIN: Yes. Spot on. Thank you. Suzanne, and Tom, if you can give us about 45 seconds.

MALONEY: I'll be super brief and I will just plug the article that Mara and Phil Gordon have in the January edition of Foreign Affairs on US alliances. And I think it's a really critical part of our entire national security discussion.

Agree with everything that's been said already about Saudi views of the relationship with Pakistan is important, but it's not sufficient. And, and I think what we see happening with respect to the Saudis and their own nuclear ambitions is, just consistent with a rising power. It probably would have developed in a similar fashion, irrespective of the sense of a lack of trust in Washington. In terms of what happened with the defense in, in 2019 of Abqaiq and Khurais, I think this, the Saudis are, are asserting themselves. They're looking to play a much larger role in the region and on the world stage, and part of that is developing a nuclear program.

KARLIN: Great, thank you. And Tom.

WRIGHT: Yeah, just, super quick, Darryl, I think that, this is totally unnecessary, I don't think the US needs to do testing. I agree with Andrew that it, I think it opens up the North Korean seventh sort of test, which obviously we thought was gonna happen sometime ago and never did. But I think in Europe, obviously they will be, be very concerned by this.

But I think it may not happen because one thing we haven't really talked about much is just for, for President Trump nuclear issues as, like our, our play a odd psychological role is makeup. I think, it goes back to the eighties. He wanted be part of, he offered the Reagan administration to be part of the arms control team.

He thinks he developed an expertise through osmosis, through his uncle in MIT knowing everything there is to know. So I think it's very hard to interpret, just a normal statement from a normal president saying, I'm thinking about testing. You're like, boy, they're really, really close with him. I just think there's so many different psychological things going on in this particular issue that it's really difficult to, to get any clarity.

KARLIN: Thank you for that. As we wrap up, I'm really struck by a comment that Andrew made about agency. As we're looking at the changing nuclear landscape, we see there is profound agency being held by US allies, adversaries, and partners. And as there are questions about what has always been a bit of an ephemeral idea of extended deterrence, we're seeing that agency exerted in different ways.

So please join me in thanking this terrific panel. Thank you. And I'm gonna ask you all to stay in your seats because my colleague Michael O'Hanlon and Senator Jack Reed are now going to come on to the stage to talk about these issues. Thank you so much.

O'HANLON: Good morning everyone. Thank you again for being here, and I am thrilled. I'm Mike O'Hanlon in the Foreign Policy program. Thrilled to have Senator Jack Reed here today. A great friend of Brookings, a great public servant, now in his 30th year in the US Senate from the small but mighty state of Rhode Island.

Lemme just give you a quick bio for those of you who don't remember his background. He grew up in Rhode Island. His dad was in the Navy. He went to West Point in the fall of 1967, summer of 1967, right during the Vietnam War. Graduated in 1971. Took, from my Princeton and Columbia perspective, an unfortunate detour through Harvard for a while, but nonetheless kept his, kept his bearings and served in the US Army with the 82nd Airborne, as well as teaching at West Point for a while.

Did some law, got interested in Rhode Island politics in the 1980s, then served as congressman from Rhode Island in the early nineties before being elected to the US Senate

in 1996. As he's currently the ranking member on the Senate Armed Services Committee, as well as doing many other things for the good of this country.

So if you would please join me in welcoming Senator Jack Reed.

REED: Thank you. Thanks Michael. Thank you very much.

O'HANLON: So, Senator Reed, I want to talk about some of the specifics in the nuclear weapons agenda that you're dealing with on the Armed Services Committee in a minute. But I thought in the spirit of the first panel, I would just ask you for your general feel about the state of the world and where you have the greatest concerns about nuclear weapons today.

Just to give you a quick summary, the previous panel with a regionalist from Europe and the Middle East and Northeast Asia, Mara Karlin asked, what, what's your feel for how dangerous things are today and, and how much the nuclear issue is paramount? Well, Suzanne Maloney, who's an Iran specialist, said nine, given where we are, but the other answers were more like six, but that's not a comforting number. And then of course Tom Wright said that in Europe a couple years ago, 2022, he might have said eight or nine during the worst of the Ukraine crisis. And Andrew Yeo said maybe in 2017 he would've given a score of eight or nine for the situation in North Korea. But let me just turn to you, whatever, whether you wanna use numbers or just be curious for your sense of where we are in the broader nuclear weapons issue today in the world.

REED: Well, we're in a brave new world, frankly. We're, we're now looking at the competition between China, Russia, and United States. It's no longer a bipolar nuclear problem. It's a tripolar or multipolar when you take in other nuclear states. So we're emerging out of a rather stable period of the, the Cold War and the post Cold War into something that is quite dynamic.

China is gearing up. It's estimated by 2035, they could have 1500 warheads. The Russians have about 1500 strategic warheads. That's a lot to contend with. We've never had that force ratio against us before. We're also in a situation where we've seen the, the end of formal arms control treaties. I hope that's temporary, because arms control was a way that provided some certainty, some verification, and some lines of communication, which are absolutely critical in a crisis moment.

And we have to renew an effort, a sincere effort to get back on the negotiating table with both the Russians and the Chinese, probably not simultaneously, but get in motion these discussions to try to limit nuclear weapons, to try to verify and to coordinate so we have opportunities in emergencies to communicate and things like that.

And then we've got the proliferation that could take place. It's disconcerting to note that in 2022, National Defense Strategy, extended deterrence was mentioned 16, 17 times. The last one in 2026, 0. We're not talking about providing that kind of context for our allies where they don't have to rely on nuclear weapons and proliferation is much more problematic today than it was. So we are in, again a new experience for us.

O'HANLON: Thank you. If I could, I want to get a little bit more programmatic now, and we didn't talk about that a lot on panel one, but you obviously live this stuff day in and day out. And for a decade now at least, the Pentagon's been saying, through Republican and

Democratic administrations, nuclear modernization is our top priority, and the Congress has tried to support that agenda.

Overall is -- just to remind folks of where we are, we've got B-21 bombers starting to be produced and starting to fly. They're gonna replace some of the existing nuclear deterrent, but they're not yet operational in deployed units. We've got the Columbia class submarine about to, I think the first boat is supposed to hit the water in next year and maybe be deployable within about five years. And then the ICBM, the Sentinel ICBM, has had some delays, but it's expected to replace the Minuteman in the 2030s. And then of course, there's all the warhead modernization, and then there's the cruise missile. Both air-launched and sea-launched. I wondered if you could just give us a sense of how you feel, how these programs are going, and just your gut feel for how we're doing.

REED: No, we're at a, a critical moment where every aspect of the triad has to be updated, modernized, and that's expensive, time consuming and difficult. And that is a challenge, both in terms of budget and in terms of technology.

When you look at the Columbia, it's a year behind schedule. There are great efforts now, both from the Pentagon and Deputy Secretary Feinberg, I think is really engaged directly to try to get that program back on track and on budget. But it, I expect it's gonna be a difficult process to to, to do that. And we need it because our six, our previous Ohio class submarines are literally wearing out. They can't be forever at sea. So that's one program that's behind and, and very expensive.

The B-21 is a success. It's done quite well and I, commend the department and the contractors for doing it. The problem is we have to build a hundred of them. And they're replacing, in large part, the B-52. The last B-52 was built in 1962. So we're in a real dilemma there. We, we have good, good technology, but we've gotta multiply it extensively.

When you get to Sentinel, it's really a, a problem. It's had a Nunn-McCurdy breach already. It's it's very expensive. And it, it is in reality, the largest military construction project we've ever undertaken in terms of dollars. And we're running into the same problems we're running into other areas of our economy. We don't have the workers to go up there into the, the plains of Montana. We don't have the access to the raw materials, et cetera.

It's a very difficult problem, and we have to do that. So we're facing a very challenging situation. And then of course, we've got, as you mentioned, new weapon systems that are coming on that we have to develop responses to. We're, we're talking seriously about, can we use lasers to deflect some of these new sophisticated weapons? That's research, but it's not in the field yet. And put on top of that, the president's proposal for Golden Dome. Which is a very expensive and technically challenging operation. So we're in a very, I think, precarious moment in terms of all of our triad and our deterrents.

O'HANLON: I wanna get to Golden Dome in a second, but first on a couple of the specific offensive weapons programs.

You mentioned Sentinel, but there's also been efforts that you've been part of and had an important role to try to extend the life of the Minuteman in the meantime. So we still have a land-based ICBM component to the triad. Are, are you comfortable that that's gonna be okay, that's gonna bridge us to the point where Sentinel can be deployed?

In other words, is your concern about the ICBM primarily about expense, which obviously is serious, but is not necessarily gonna threaten our deterrent? Or do you think there could be a gap between the two programs?

REED: I think we'll do everything conceivable to avoid a gap. That might be not only extending the life of Minuteman, but thinking of other creative ways of repositioning systems that might be able to, compensate in some part for the failure of our Sentinel system to go on board.

But we're working very, very hard to prevent any type of gaps. We, we need a triad. It, it's been a sturdy from of deterrence over 60 plus years and we understand that. But it's difficult to predict given the technical complexity of these systems. And also, as I pointed out with the fixed Sentinel, some old fashioned bricks and mortar problems, we just can't get the people to do the work.

O'HANLON: Could I come back to that issue? And from the great state of Rhode Island, of course you're involved in building submarines, nuclear armed, as well as nuclear powered attack submarines. Could you give us a quick update on where we are in trying to strengthen and enlarge the submarine industrial base?

REED: We are taking strong steps to do that. I think everyone recognizes that the strongest aspect of the triad is our submarines, because they're very difficult, if not, we hope, impossible to detect. But they provide the real essential counter-punch that we need in a situation that could develop.

What we've done, and this started back in 2017, with John McCain, my good friend and a remarkable senator. He didn't go to college, you know. We went -- that's a joke, ladies and gentlemen. He went to the Naval Academy.

O'HANLON: Harlan gets it.

REED: No, John was one of the most remarkable and greatest senators I've ever served with.

But back in 2017, we created this industrial submarine base fund, which was designed to give the tools to the companies, particularly in training manpower. That was one of the great problems, getting the machinists, the welders, the people into the, the yards. So that was adopted by the Navy and now that's a official Navy program.

But the administration, both the Biden administration and Trump administration, has really stepped up in trying to incentivize, encourage and demand that the companies expand, they invest more of their money into the submarine industrial base. And that we are -- because we, this is the key, I think-- if we can produce for replacements for the 688, the Ohio class, then well, I think we'll be in, I think we'll be in a good shape, in terms, particularly as you mentioned, if we have a slight gap in one of the other aspects to try it.

We're making progress, but we have a long way to go. We have to build new facilities. We have to also establish warehousing capacities. One of the problems in the submarine industrial base, and I think in the other industrial bases, is we're not sending constant demand signals to suppliers. It was every year, maybe every year, maybe, probably, et

cetera. What we have to do is be able to send that constant demand signal, which means Electric Boat has to be able to store equipment that they can't -- and parts -- they can't use right away, so they can still keep buying them from the suppliers. So those are some of the aspects that we're trying to develop. Now--

O'HANLON: Do you feel like the policy is basically on the right path, in terms of strengthening and enlarging the industrial, the submarine industrial base, or do you feel like there are still major new ideas that are needed?

REED: Well, I think it's on the right path, but it takes constant supervision and it also takes the focus to, we've gotta get this done, and that I hope is gonna be apparent and evident everywhere throughout the industrial base.

Congress is committed to the submarine. That's one issue that's not debated on partisan or parochial or geographic lines. We understand this system is the number one priority to the Navy and probably the DOD. So that's, that's good. The financial support will be there.

One thing we have to do, and this goes I think for all systems, is we can't let the the perfect be the enemy of the good. We have to go ahead with technologies that might be improved, but they're, they're good now. Let's get 'em in, to get 'em to sea. And that's something that I think along the way we've been tempted, the multiple redesigns of, of systems, the multiple changes to make them better slow us down. And we'd rather have, I think, a very good ship in the water rather than a perfect ship someday.

O'HANLON: Lemme ask you, if I could, about missile and air defense and drone defense, Golden Dome. Because you and I have both been around this debate a while and it's now been 43 years since President Reagan's Strategic Defense Initiative, Star Wars speech. But it's now about a year since President Trump's vision for something similar. And the stated goal is to be able to defend the entire country against many types of attack, including large scale Russian and Chinese attack, if I understand the vision correctly.

Is that your understanding of the vision as well? And is that a realistic standard, or should we be maybe ratcheting down our expectations just a little bit?

REED: Well, I, I, I think what we should do is look very carefully at can we produce a system that is both effective and reasonably cost efficient? I hope. I think we have to make that investigation seriously, which we're doing now. We have to understand though, that our key aspect of deterrence is our triad. It's, it's not Golden Dome, it's our triad. And that should be the first priority.

Golden Dome, I think, is gonna have to incorporate different aspects. Some of 'em novel. We talked before about laser weapon systems, to hit things like hypersonics that are coming in. Ballistic missiles aren't gonna help a lot. Some lasers might. That's something we have to work on and we have to work on it regardless of whether we create a big Golden Dome system. We, we need those, well, platforms.

Then I think also the communication system and the command and control systems are critical. But they're critical for not just Golden Dome, for our whole military system. But part of the development of Golden Dome has to be and should be integrated with the development of a comprehensive command and control system for nuclear weapons and for operations in general.

So I think it has to be explored and we have to make some hard choices along the way. Is this feasible or is it too expensive or is it just technologically not achievable? But we have to start.

O'HANLON: Are you getting any sense yet of what the architecture might look like? I was reviewing the Bush, the first Bush administration's GPAL system, Global Protection Against Limited Strikes, for the old timers in the room who've been around this debate as well for a while. And, and that was a vision to maybe have about a half dozen strongholds of defense capability, more or less along the perimeter of the United States, but -- East Coast as well as West Coast, maybe even southern border, as well as northern border. And to think about limited strikes, accidental strikes, unauthorized strikes from whomever.

It seems like that logic is even more compelling now when we have drones that could be launched from who knows where. And so is that the kind of an architecture that we should be expecting or that you would advocate? Or do we have any idea really where the Trump administration's gonna come down on how they would position and posture different types of capability?

REED: Well, I don't want to comment specifically on the architecture because I don't want to get into areas that I should not be in. But I think one of the aspects that we've seen now, and this is, again, a new development. 20 years ago, space was not an arena of conflict as it is today. So space is gonna be critical in, in many aspects of this.

One is we believe in the public reports that the Russians are weaponizing space, the Chinese are thinking about it if they haven't already done it. So how do we respond to that?

And also from a perspective of trying to hit these targets coming from over the horizon or even close, and look out from of, of Mexico, I think that's the term. I, space offers a vantage point that is probably better than just land systems or other systems.

So I think that's one of the aspects that's gonna be developed significantly. Our, our role in space and how we're gonna deal with its weaponization, it's now an arena of conflict. It used to be a semi-passive area where we could operate and others could operate relatively peaceful.

O'HANLON: You said something a second ago that caught my attention, the implication that a number of dimensions of Golden Dome may be classified. Is that my understanding? Is that the correct and is that gonna be the way it stays? Or are we gonna be given more detail for the public debate pretty soon about what the overall capabilities might look like?

REED: Well, I, I, we have to be respectful of intelligence. But one of the aspects of the administration, which I've publicly criticized, is the lack of sharing information which is not, or should not be classified, just not sharing information, not just with the public, but with the Congress too. There, there has to be more forthcoming discussions about systems without violating security or classifications. But we have to engage American people in this debate because they ultimately would be paying for it and supporting it.

And so I, again, I think there should be much more discussion of this, not just slogan, but a at least an outline of what they intend to do, where do they intend to do it.

O'HANLON: I have just two more questions, so please start thinking of your own, in the audience. But I wanted to ask you to step a little bit broader and above the nuclear issue alone. But in the spirit of what we were just discussing to ask about this purported \$1.5 trillion budget request that President Trump's been saying he might put forth to the Congress, which I'm interpreting to be in the spirit of last year's "Big Beautiful Act" where he asked for another a hundred billion in unusual funding, mandatory funding for the Defense department. Normally it's of course a discretionary account. And what I'm wondering is, are they gonna ask for a, a sort of a trillion dollars in old fashioned discretionary money and then another half trillion in mandatory money they could spend at their own discretion with less reporting, less congressional oversight on whatever time horizon they choose. But in the meantime, President Trump can claim to have created the largest defense budget in US history. Is is that your expectation of where this might be headed or you think they're going to rethink that whole 1.5 trillion?

REED: No, I, I would not be surprised if it evolves, as you suggest, which is there's a, a budget line which is enhanced significantly, but there's also this reconciliation process where they have money that's very flexible. I'm being polite, but very flexible.

The issue I think we have to start asking, and we're raising these questions now, is can the depart of defense spend the money they already have effectively and efficiently? And if they can't, then why are we putting more money into the system? That's one question.

I think also every program has to be looked at. We were just talking about Golden Dome. The price tag has not been announced, but I would assume it's not trivial by any means. Are we paying for that? Well, where's the, the science, the plans, that we're, we know we're making an investment in something that's real, not just a slogan, as I stated before. So I think there's gonna be a real question.

The other aspect of this we have to consider is we're facing significant deficits and we have to be conscious of those. We're also facing significant issues. Social Security, Medicare, our demographics are changing dramatically, and those programs are becoming more and more expensive. Fewer people paying into the system. Where are we gonna get this adjustment in terms of defense spending versus domestic spending? We have to, in good faith and honesty, do that for the American people.

So, and then of course the administration continually suggests the, the way to prosperity is tax cuts. Well, that's nice too, but how does that factor into significant defense spending and then these other vital programs? In the State of the Union, the president pounding the table, we will not cut Social Security, will not cut Medicare. Well, how do we fund it?

O'HANLON: Do you think that's gonna rise to a high level political debate issue in the coming midterm or next presidential election? Because the American people don't seem to react to that issue very, very well in terms -- we, we don't have the same political champions of reducing the deficit that we did 30 and 40 years ago anymore.

REED: No, I, and I I think though that the reality is, is just becoming more apparent to everyone. And it's frankly, the last time we had a surplus was at the end of the Clinton administration. We estimated to be, over 10 years, about \$7 trillion in surplus, which I think we could have spent wisely had we not dissipated it. But that was the result of the votes I took in '94 to balance the budget, which was cutting expenses and raising taxes. And, you have a lot of people who talk about the deficit, but also want to cut taxes, and that arithmetic usually doesn't work out. So.

O'HANLON: One last question, thank you. We mentioned arms control before, and you talked about the importance of trying to revive it. Do you have any, I realize we're all in early days, and this is one of our jobs at a place like Brookings to help come up with new ideas.

But do you have any initial instincts about how to involve three major nuclear powers in an arms control conversation? Or maybe even five, or maybe even more? How, how would we envision a future arms control framework?

REED: Well, I think I'm benefiting from the advice of Rose Gottemoeller, who has testified before the committee.

I think it should be a two track process. We have an established cultural sort of institutional relationship with the Russians in terms of arms negotiation. We should actively reengage in that. And it's gonna require not just a, a one off, somebody showing up for a couple days and talk. We're gonna have to invest institutionally in the staff and committed experts to sit down with their counterparts and start talking about how we can develop, again, arms control that benefits both of us. 'cause that's the whole key to a a agreement.

With the Chinese. I think we would be naive to pull them in and suggest that they're gonna be ready to negotiate with the Russians and ourselves. But I think we can start exploring things like early warning communication, fail-safes. And Sam Nunn and Ernie Moniz are doing an excellent job. They're going to China, they're talking to the Chinese. And the Chinese, at certain levels, are responsive.

So I think we, we take two distinct tracks. One is just, can we, for example, with the Russians, can we stop thinking about, well let's have an overall warhead cap, so we don't get into the strategic and tactical issues. That might be an approach that would work better now. With the Chinese, I think it's much more limited saying, why don't we have several length of communication that are real. That when we call, you will pick up the phone and we can have a real dialogue to avoid mistakes, which we would, both sides would regret. I think that's the way we would begin.

O'HANLON: That's great. One last footnote question and then we'll go to you. Recently we've seen discussion about whether the Chinese in 2020 conducted a very low yield nuclear test and whether that should then be a basis for the United States considering doing the same.

And for those of you who don't follow this stuff in detail, I think it was the kind of a test that might involve a small amount of fissile material, but be measured with a yield in at the roughly the same size explosion as the conventional explosive inside the warhead. Not, not a real explosion of a nuclear scale, but designed to really test the components more fully.

The United States considered doing these for a while and historically did before, I think our test moratorium in 1992. And of course all three major powers, Russia, China, the United States we're all signatories of the Comprehensive Test Ban Treaty, but no one's ratified it, or at least no one's currently in good standing on that.

Any thoughts you've got about where we stand with that Chinese nuclear tests, as it was alleged to have occurred and whether the United States should reciprocate?

REED: Well, I think we have to look at where we are, frankly. We have conducted over a thousand nuclear tests since 1945. The Russians, about 500, 700 tests. Chinese, much less than that. And you go down to the most recent entries into the arms race, about less than 10, Pakistan and India. We have so much data from those tests, much more so than any other nation that we, we don't necessarily need more data. We also have spent roughly \$10 billion on the National Ignition Facility in which we are studying and have fairly good aspect view on the physics of nuclear reactions, which no other nation has that kind of analysis of data.

And then every year, as you know the three national labs has to certify that our systems are ready. And also the Stratcom commander. And they've done that the last 25 years. So we're not in the position, I think, of desperately needing to test. Once we do test, though, if we did, it would be an invitation to all these other countries to say, oh, we're gonna catch up, we're gonna learn so much by a test.

Our real issue in terms of testing is related to the problems with the plutonium pits degenerating, et cetera. We're building new plutonium pits. And I think that's the way to do it rather than, try to test them, et cetera. So I think if we got into testing, we would end up giving our opponents a boost without any material gain to the United States. In fact, it would be quite dangerous because you could see the North Koreans just automatically saying, oh, me, me, me, I gotta do this. This is great. And then you generate that notion of, well, why are they testing? Are they preparing for something? Well then I have to out-prepare them. We wanted to again, get back into negotiations, not back into, dramatic demonstrations of our ability to blow the place up.

O'HANLON: Yeah, it's sort of interesting, the North Koreans haven't tested since 2017, even though we were pretty convinced they would, and I guess maybe still are wondering if they might, but, okay, thank you.

REED: If we do a test, I can, I'd bet some money on, that they would. I think so.

O'HANLON: Over to you, please. Let's, please raise your hand and wait for a microphone and identify yourself before asking your question. We can start here in the back row, please.

AUDIENCE QUESTION: Thank you, Senator. My name is Josh Keating. I'm a reporter for Vox. I was wondering if you could respond to the arguments that Trump administration has been putting out in recent days about Iran, specifically, whether or not it's still intending to arrange in rich uranium, or whether it's developing an ICBM that may at some point be capable of reaching the United States. These are talking points heard recently and I'd love to get your response. Thank you.

REED: Well, I, I, I, I'm a bit confused because at, at one point this was an issue about nuclear policy and a nuclear agreement. And another point it's about, really, tactical missiles and launchers. And another point it's about the, the desperation of the Iranian people, which is real. I have yet to see the administration define a very clear-cut objective of what they are trying to do by amassing all these naval forces and other forces in the area.

I think, I was very impressed with the reports that were alleged to, attributed, I should say, to General Caine, which is if we get involved in a conflict there, we're gonna have significant and deleterious effects on our stocks of ammunition, our ability to respond to other places, et cetera. I think that advice should be taken very, very seriously. So I, I have yet to then, to observe a, a, a plan, an objective, and a thoughtful way to get there. It's more or less that

every day it's a new, a new, new thing. It's more, at this point, performance than strategic reaction.

O'HANLON: Other questions? Here in the next to last row, please.

AUDIENCE QUESTION: Good, good morning. My name is Kai Sato, deputy director of the US branch of at the Organization for World Peace. I would like to ask both, both do you think the expiration of the New START treaty encourages Russia or possibly China to have a seat of the new nuclear arms control? Yeah. Reuters reported that the three, three countries' representatives meet met in Geneva to talk with the possible nuclear arms control, and Russia proposed the optional limitation of the warhead just, just before the expiration of the treaty. Thank you.

REED: You can go first. My prerogative as member of the Senate.

O'HANLON: Well, excellent question and, i, I'm hopeful that we will get back on track with arms control. Amy Nelson has done good work on this topic, and I'll just invoke that as a partial answer to your question, maybe tangential, but she and I have done some writing and in addition to the way the senator framed it, I think that trying to emphasize transparency is going to be a useful approach, even if we can't agree on quantitative ceilings or fully verify those.

And and I'm hopeful that may allow us to then bring in other nuclear powers as well into, even though we start with China in a different kind of way, as the senator suggested. So that's not the full entirety of your question, but that's one part of how I think about it.

REED: Well, I, I'll adding to, to Michael's comments, I'd essentially be repeating myself, which is I think we should consciously establish these, these two tracks.

We engaged with the Russians at a very sophisticated level which we were at for decades now. And then with the Chinese start talking about can we have good communication? Can we have crisis communication? How do, what can we do? And I think that ultimately will hopefully come together, but at this point, I think we need two distinct paths.

O'HANLON: Other questions, gentlemen, on the very back and then over here next.

AUDIENCE QUESTION: Thanks Tom Countryman from the Arms Control Association.

O'HANLON: Hi Tom. Good to see you.

AUDIENCE QUESTION: Thank, thank you, senator, for noting that increase in Pentagon budgets ought to be based in part on the Pentagon's ability to spend it on necessary items. I don't see that being the president's motivation. I'm even more deeply concerned about the idea that anything DOD needs can be paid for by our grandchildren. I don't expect the president to suggest that we claw back some of the billionaires' tax cut to pay for more defense spending. But I'm just wondering, are there in, in your view, how many members of Congress really pay attention to the long-term deficit whenever we talk about defense spending? Thank you.

REED: No, it's an excellent question. I think most of my colleagues do, but the question is do you operationalize it? Do you articulate it? Do you talk about it? A lot of that is like most things in politics is, what's the issue of the moment? And the issue of the moment is that's one of those issues where we honestly, we wanna put put off for a while.

But again, in 1994, we came together as a nation and we voted to do what you're suggesting is, increase taxes, reduce spending. We had a, a surplus, which we could have invested in lots of things. For example, stabilizing Social Security, Medicare, et cetera. But I can tell you we paid for it too.

When I ran for the Senate in 1996 the commercial they ran against me was, "one vote, that one vote that raised your taxes cast by Jack Reed." And I thought it was working against me until a gentleman came to the office, a businessman, and said, well, I was down in new, in Connecticut on a business trip, and I'm, I'm, I'm shaving in the morning and I hear "one vote that vote that. . ." And I said, oh boy, they must hate Jack Reed. They're advertising for him down in Connecticut and New York region. "That one vote cast by Bob Torricelli." So we knew it was just, this was not aimed at the one vote. This was just a political response. And it worked. We lost we lost politically.

So that dynamic has to be considered, but we're reaching another point, I hope, and this is where we need leadership that's gonna face the reality of increasing deficits, increasing social costs, and also the need, frankly, we can't dismiss, of defending ourselves in a much more dangerous, much more hostile world, in which our expenses are not trivial. They're, they're significant, these new systems.

O'HANLON: I'm gonna add one quick thought and then go to Jennifer and then here in the front. But a colleague at Brookings, Bill Gale wrote a wonderful book a few years ago about the deficit and he called it "fiscal therapy." And I really liked the term because he was not envisioning a complete balanced budget in the short term. That's probably unrealistic when you have a \$2 trillion deficit. But he was talking about maybe cutting it in half. Well, back then it wasn't quite as big, but roughly in half, so that at least your debt is no longer growing relative to the size of your economy. That would be a nice interim goal. And one that Maya MacGuineas at the Committee for Responsible Federal Budget, I think is also talked about. So just wanted to add those 2 cents 'cause I'm a CBO alum, so I wanted to join in with the senator. Jennifer, please, and then up front.

AUDIENCE QUESTION: Thank you so much. Jennifer Mackby, Geneva Center for Security Policy, non-resident here in DC. But I was wondering that, in the arms control world, there is still the Outer Space Treaty, and when we were speaking earlier of space, we've had some concerns that the Russians might have had a nuclear weapon on a satellite. But I wonder if you have any things that you could say about strengthening that treaty, which might be soon under attack. Thank you.

O'HANLON: The Outer Space Treaty and whether there's anything to strengthen, you should be doing to strengthen it.

REED: Yeah, no, I, I, frankly, I, I, I think we, we should be strengthening all of our treaties with respect to weapons, both in space and everywhere. As I said before, this is rather quickly, over the last decade or so, become such a center of conflict and weaponization.

I think 10 years ago, plus, we were content and thought space would always be a rather peaceful place. Satellites, communications, all the good things. And now it, it's actively been weaponized for all intent and purposes, what we've read in the public press about the Russians and the Chinese. And we have to, again, if we're talking about negotiations and arms control, we have to open up a new chapter called arms control in space and specifically start negotiating about what we, or they, could have up there.

We never had, did that before. The space was as you, it was more, it was not only neutral, but it was a way we could verify arms control, not, we have to have arms control in space. So definitely there has to be part of these negotiations going forward

O'HANLON: Right here, please, fourth row.

AUDIENCE QUESTION: Thank you very much. I'm, I'm not quite as prestigious as some of these other people. I'm just a student. But I'm curious in these conversations about, about defense spending and development of these new weapons, but then also conversations about the debt and the deficit. We're spending, the military is the second biggest or it's the biggest expenditure, and we have these deficits that are unsustainable.

In the event of, in the event of an Chinese invasion of Taiwan what level of commitment do you see from the United States and obviously -- what, yeah, what level of commitment do you see from the United States when it comes to aid or other things like that?

REED: Well, I think that is a question that will ultimately be decided at that time by the, by the president of the United States. But I think what we can do now is to, prior to, to, to try with everything reasonable to prevent a armed seizure of Taiwan by the Chinese. That means investing in Taiwan's military strength, it means encouraging them to do things that they should be doing, which is to improve their military, to think hard about and practice the plans they would have.

But this is an issue that strategic ambiguity is the term and there's a lot more ambiguity than strategy, I think. And no, it's, this is a, this is one of the toughest problems we have. We have to be able to convince China that to, to move against Taiwan would be very bad, very, very bad for them. But we also, I don't think want to say we're gonna do this, this, and this. And this, this is the world we live in.

One of the aspects that's interesting about our engagement in the Ukraine is that I was struck by a, a business person who came into my office two years ago, at least, a major Fortune 500 company, and that I have three things I want, you've gotta do. I said, well, here it comes. Cut my taxes, cut my taxes, cut my taxes. First thing he says, you've gotta win in Ukraine, because if you don't win in Ukraine, China will go after Taiwan. 50, 80% of our supplies, materials, products come through the Taiwan Strait. It'll be terrible.

So I think there's an economic aspect to this problem that is not developed as much as it should, which is, if we get into a contest over there the reaction would be, even a minimal reaction would be a significant, I think, worldwide boycott of trade with China. Is that gonna help the China, et cetera. So there are lots of things we can do, but at this moment I think it would be to avoid or to negate the strategic ambiguity would not serve us well. We are committed to helping Taiwan, but what that help is, is still to be determined.

O'HANLON: We're gonna take a 10 minute coffee break in a second, but please give us a minute to get off stage first 'cause the senator's got a plane to catch. But most of all please join me in thanking him.

REED: Thank you, thank you.

SISSON: All set. Alright, well, hello, my name is Melanie Sisson. I'm a member of the Strobe Talbot Center for Security Strategy and Technology, where I have the great pleasure of working with Michael O'Hanlon and Bruce Jones and when she is not fully occupied with her day job as a full-time professor at MIT Caitlin Talmadge.

Their biographies and their publication list is way too extensive for me to relay here. Suffice to say that their work equips them well to have interesting things to say about the first principles of US nuclear strategy and its operation in the contemporary geopolitical environment. Caitlin, let's start at the beginning, if you will with some of the first principles about our nuclear posture. Please refresh us on what the US nuclear posture is today and why, and then perhaps tell us whether or not you think it's the nuclear posture that we need.

TALMADGE: Sure. Well, thanks so much for the opportunity to be here with you and all of my colleagues and, and those who have joined us today, both in person and online.

I, I think it, your question about the US nuclear posture is a good one, and as was previewed a bit in the previous panel, the US for many years has had a nuclear triad that involves both land-based missiles, submarine launch ballistic missiles, and then of course air, air launch cruise missiles from our strategic bombers and the United States is in the process of engaging in a modernization effort that was basically put together in 2010 to try to do a one-to-one, a roughly one to run replacement of each of those elements of the triad.

We've talked a little bit about the, the new B-21 strategic bomber, the Columbia class ballistic missile submarine, and also the Sentinel Land-based ICBM. All of those programs are in, in process with varying degrees of success as Senator Reed spoke about in the previous panel. But I do think, given what we talked about in the first panel regarding the threat environment, the nuclear threat landscape facing the United States.

It's worth having a conversation about whether the specifics of that nuclear modernization program, the effort that we've committed to, to improve those elements of our nuclear posture over the next decade or two, really is completely well-suited to the environment that we now face. If you think about the environment in which this nuclear modernization program for our nuclear posture was developed, it was 2010.

It was the time when Russia was still basically a friend and was locked into the new start agreement. It was a time when China had a very small and, and frankly not, not very survivable and, and recessed nuclear force. And North Korea did not have nuclear tip ballistic missiles that could reach the United States.

And what we've seen in that time is that all of those things have changed. There's no more new start. The Chinese are on pace to have a thousand operational warheads by the year 2030, maybe 1500 by 2035, according to Pentagon reports. And, it does raise the question of whether our nuclear postures actually fit for purpose.

And in fact, a couple of years ago, there was a really impressive report, if you haven't seen it, by the Strategic Posture Commission, which is a bipartisan group of nuclear experts that came together to assess US nuclear posture and actually reached the consensus view that the current US nuclear posture was necessary, but probably not sufficient to meet the challenges of the emerging nuclear environment.

And I think that that consensus has only gained strength as we've seen in the last couple of years of things that have happened since most notably the expiration of the New Start treaty very recently with the Russians, which ushers in the first time in 50 years, that the US and Russian strategic nuclear forces have not been constrained by treaty based arms control.

And so I think given all of that, it does raise the question about whether there are things the United States might wanna consider doing, both in the short term and maybe in the long term, to adjust its nuclear posture to this world that we're seeing where Russia is unconstrained by strategic arms control.

China is unconstrained as it's undergoing this massive expansion of its nuclear forces that's unprecedented in its history. And of course, we still have DPRK and other potential longer term nuclear threats to think about. And, again, we can think about what this might look like in the short term, in the long term, in the short term.

The United States might want to think about some things that it could do to shore up not only the deterrent role of its nuclear arsenal in terms of, deterring attacks on the United States, deterring attacks on allies, but thinking about assuring allies that the US extended deterrent is actually robust.

And if you don't mind, I'll list a couple of ideas that I'll just throw out there. So, in the short term, I think the United States might actually want to think about what's called uploading. So uploading additional warheads to some of the existing systems that it has, so not the new ones that it's buying, but systems that it currently has.

So I'm thinking here about things like mervening or adding additional warheads to the Minuteman III, land-based ballistic missile that the United States has. Another thing the United States could think about doing is reconverting some of the closed ballistic submarine, launch ballistic missile tubes on its ballistic missile submarines, which were essentially made non-operational as part of arms control with Russia.

That arms control no longer exists. So it raises the question as to whether the United States might want to. Make those missile tubes operational again. But those of course, are just short term things in the longer term. I think the bigger question is, again, the United States is, spending a trillion dollars or more to implement this program of record that was designed to essentially replicate the nuclear posture that we had in 2010 in a totally different threat environment on something like a one-to-one basis.

Although actually, if you look closely at US nuclear modernization plans, in some areas it's not even a one-to-one replacement. It's less than a one-to-one replacement. Bruce knows lots about this, if, if you think about our ballistic missile submarine force, which is really the backbone of the US strategic deterrent, I would argue we're moving from the Ohio class submarines to the Columbia class submarines, but we're building fewer Columbias than we had of Ohios, and the Columbias also have fewer missile tubes. So the, the net result of this is going to actually be a substantial reduction in the Trident missile tubes that are available.

You look like you wanna jump in.

SISSON: I, I do wanna ask you a question. So thanks for those very specific examples. You mentioned the idea of sufficiency. How do you assess sufficiency in the nuclear arsenal and nuclear posture?

TALMADGE: So, I think it's a complicated question and, as I mentioned, the United States nuclear arsenal has more than one role, right? US nuclear weapons are not just about deterring attack on the United States homeland. They're also about engaging in extended deterrence on behalf of allies and reassuring those allies of the security of the US nuclear umbrella to back them up in the event that they face not only nuclear threats, but potential conventional threats.

I don't think that the math involved in generating the US force posture is simply the math of addition, that, oh, we, we take how many warheads the Russians have and the Chinese have, and the DPRK has, and then we sum that together and add one, and that's, that's the number that we need to have. Because this is complicated. But, there are, there are many factors that go into determining the nuclear balance besides just the number of warheads that you have in the United States has a lot of important advantages that I think mean it doesn't need to be in a quantitative arms race.

The point that I would drive toward is that the question that you just asked, I think, actually has not been debated rigorously in a serious way, definitely in public and even in private, I'm not sure it's getting the attention inside government that it probably merits. And my point would be that we should go through that exercise and if it turns out from that exercise that the answer is 1550 deployed strategic warheads, and it turns out it's exactly what it was in 2010 when our program was developed, great, we're on track. But I suspect that if we actually took into account the changes in the threat environment, we would come to some number that was at least modestly higher. I don't think massively higher for the reasons that I just talked about. But I think in terms of upload capability, uploaded warheads today and also in the future, thinking about if we actually, for instance, would wanna buy more Columbias or if we would want to merv the Sentinel, I think those are questions that we want to ask.

And of course, that's all still at the strategic level. There's also the sort of theater nuclear capabilities, which is a big area of development for China and also has historically been, a huge area of unregulated Russian nuclear weapons possession. And so again, the, the total picture there, I, I don't have a pat answer, but I think the lack of discussion on this is, is somewhat concerning given everything we heard in the first panel about how the world is changing.

But we're not doing anything with our current forces and we're building forces based on a plan that was developed quite a long time ago in a different world.

SISSON: Mike, Caitlin just highlighted that sufficiency isn't just a quantitative measure, there are qualitative elements too. She also spoke about modernization efforts. Can you, for a non-technical audience, what is modernization of the nuclear triad and why do we need it?

O'HANLON: Thank you. And again, thank you all for still being here, Caitlin, thanks for framing this conversation very well and look forward to the discussion. I think that modernization is, in some cases, literally the right word, in other cases, a little bit of a misnomer. When we're really mostly interested in replacement, we're not really trying to build

more powerful warheads. And in most cases we're not making more accurate warheads either because, for example, even as we change submarines and I'll leave much of this to Bruce Jones, the real submarine expert in the room, but we're keeping the same missile. And the missile is what determines the accuracy.

And we're also not testing and developing new warheads. So we're making the existing warheads a little bit safer in some cases with some new added non-nuclear safety features. But it's primarily just keeping what we've already got going strong. Now the the bomber leg is a little different 'cause the B-21 is, is stealthy and but we're still gonna, as I understand it, keep some B 50 twos and use those for long range standoff cruise missiles.

And so again most of it is just making sure we can still have a reliable, safe nuclear deterrent with roughly the same capability we had before. The other point I would make at this, just opening juncture, and again, Caitlin did a great job framing options. I like the options. I'm not yet an advocate of those options myself.

Because being an old cynic of how we did nuclear planning in the Cold War and watching a system generate 30,000 warheads in each superpower's arsenal at one time, I don't think we really have a serious science of how we do nuclear targeting. We have methods, but I don't really buy into them, and I think we still have way too much nuclear capability.

So I'm more interested in not giving China and Russia a perception of advantage. I'm less worried about covering a certain target set. And so I'm inclined to think, let's talk through defenses, which of course, for a long time we're seen as potentially contributing to an offense, defense arms race.

But now we've thrown away the ABM treaty under President George W. Bush and we haven't replaced it with anything. And now we don't have New START. I'd rather think about, okay, this Golden Dome concept, let's make it a public debate and let's see what architectures might make sense and maybe put a little more effort into the defensive side, hoping that in a, in a contrast from how things were seen 50 years ago, in this case, doing a little bit of buildup on the defensive side, may it be less likely to incite an arms race dynamic than doing a buildup on the offensive side.

In any event, I want to add that option to the mix. So let me take all Caitlin's options and just add one more, which is, let's think through how offensive and defensive capabilities together may position us vis-a-vis China and Russia.

SISSON: So open that up a little bit more, the Golden Dome and missile defense system conversation.

So one question is, is why don't we have such a system already? And then the second is explain a bit more about why we should want one now, how it could work, what the risks are of building it, much less implementing it. That might take us back to some of the debate you mentioned earlier, but if you could just elaborate a bit, I think that would be helpful.

O'HANLON: Yeah, it's great because it links back to panel one as well. So right now we have about 48 interceptors based primarily in California, based entirely in California and Alaska designed primarily towards a North Korean nuclear threat dating back to roughly the Clinton or to the early Obama administration, but it was a program that had to some extent been developed in the Bush administration as well and sustained ever since. It's probably

not that good of a system. The interceptors don't work that well in tests by contrast to all the medium range interceptors that are working well now in tests and in real life in Ukraine and in Israel.

And so we do have this question about whether we even have technology that's adequate to the task, but also the architecture is focused primarily on the West Coast. As long as Iran doesn't have an ICBM and Russia has way too many for us ever to defend against anyway, maybe that's okay, but I'm interested, lemme give you one quick scenario.

I'm interested in the following kind of way a contingency might play out with China. We have a, a fight over Taiwan. Conventionally Caitlin's done some excellent work about how that fight could inadvertently raise some nuclear risks, even if nobody wants that. But let's say we get to a point where one side does want.

To make nuclear threats because they're losing the conventional fight. And let's say that's China. And what they wanna do is detonate one or two nuclear weapons near Guam, which is a crucial base for us. And they calculate that. That's not gonna kill so many Americans as to guarantee an attack on Beijing, but maybe it helps them reverse the momentum of the conventional war, heaven forbid that China ever think this way.

But I don't want them to have the temptation. So I'd like to have a missile defense system that makes it hard to do onesies and twosies and threesies like that with an adversary trying to exquisitely find this sweet spot, which probably doesn't exist, but the adversary might think it does, where they could do just enough to change the dynamic of the war without guaranteeing all out nuclear exchange.

And I think missile defense may actually contribute to deterrence in that kind of situation. Also, I'd like to have a better defense against North Korea and, and also potentially against accidental or unauthorized launch of one or two missiles by whoever. So that's, those are the kinds of capabilities I'd like to see in a golden dome.

SISSON: Thanks. Bruce, it's of course obligatory now to ask you about submarines, even though it's tempting not to, just because it now feels obligatory. But nonetheless, you have done a lot of work recently looking at the intersection of emerging technologies nuclear armed submarines and other kinds of submarines as well, and maritime strategy.

So based on all of that work, what is the picture? How does it look? How are we doing?

JONES: Yeah, thank you. And I'll, I'll pick up some of the themes from this conversation and also some of the things that Senator Reed talked about. So, first of all, just reinforce points that we made about the importance of the submarine based submarine launch nuclear missiles.

Roughly 50% of our deployed warheads, but under current planning, that'll grow to roughly two thirds. Similar scale for Russia, similar scale for China, as far as we know, roughly the same for India and France. A hundred percent of Britain's nuclear warheads are on, on submarines. A couple other countries who technically don't have nuclear missiles, also probably on the submarines. Anyway, a really important part of the, of the storyline.

The question I've been asking is as we develop new technologies of a range of types, and I'm sorry, I should say, and I widely understood that they are the most secure of the, the three legs of the triad. And when you watch Ukrainian commando and drone raids on the strategic bomber fleet in, in Russia you have to ask questions about the security of our, of our capabilities on land here.

If there's a perfect Golden Dome, maybe we don't have to worry about that. I think your version of the Golden Dome is much more persuasive than anything I've heard in official channels, but. So we have to worry about the land-based defense.

Submarines at sea, SSBNs at sea. Jack Reed was right, vanishingly, small chance that somebody can find them and destroy them. And you'll hear things in the AI industry right now, "turning oceans transparent." "We can detect these things." It's a complete nonsense, right? They are essentially unfindable once they're at sea, but they don't only live at sea. They have to come into dock. They have to be built in factories. They have to be repaired at piers. They have to be maintained, crews have to unload it, et cetera. And I'm increasingly worried about the security of our submarines in dock.

I'm also worried about the number of submarines we have when Russia has a lot of SSBNs sailing around. China's gonna have more, looks like North Korea might have one. Our, our, our attack submarines are our primary defense against other people's SSBNs, right? They do other very important things too. And that fleet is getting stretched extremely thin. We're not building 'em at a fast enough rate.

And when I look at the, I've been to several American submarine bases and submarine facilities. I'm not gonna say they're unguarded. I wouldn't recommend that you get in an F-150 and try to drive through the gates. But I watched in just, just in December of last year at the main French SSBN piers in Île Longue, in Brest, we saw a drone, several drones heading towards that facility. They were disabled before they got there. Ask yourself, how good are our drone defenses at submarine bases? You do not know or know the answer to that question. I would like to see those improved. We saw Ukraine using a, it's called the sub sea baby drone. A weird name, but it's essentially a, you could describe it as a, an autonomous undersea vehicle, or you could describe it as a very long range torpedo.

It's a bit of both. A, a successfully evade submarine defenses and a Russian pier and destroyed the pier and dam and quila class submarine. I don't see anything in our setup that would stop that from happening to our SSBNs or our SSNs. So that leads me to think about how we harden our defenses around our submarine base.

And I have some thoughts about that. None of 'em are cheap. And I have some thoughts about the need to have more of our submarines, both SSNs and probably SSBNs. And we have serious problems within the submarine industrial base. Senator Reed hinted at them. I would be a little more blunt about the delays that we're seeing in the Columbia class. In the Virginia class, we're supposed to be building a new submarine. The, the stresses on the submarine industrial base right now are substantial. There's lots of money. Mara Karlin did a very good job in the previous administration getting more money in the pipeline. This administration has put more money in the pipeline.

There are good things happening in the Pentagon in terms of procurement around submarines. So there are lots of things moving in the right direction, but it's an extremely stressed system in terms of labor availability, in terms of suppliers, in terms of costs. And so I think we really need to be laser focused on getting that piece of the puzzle right, both in

terms of production and securing the, the physical places where submarine building happens.

SISSON: There is a lot of attention right now on ship building and shipyards and maritime strategy. What's your assessment of the relative prioritization of the ships being built and how those shipyards are operating?

JONES: Yeah I want to do some more careful thinking about this because I think it's easy to assume that skillset X in, shipyard Y can transfer and that's not always true.

But I'll put it simply. Like to my mind, we should be expanding our submarine production capability before we build Arctic icebreakers, before we build new frigates, before we build the Golden Destroyer. So there, there would be a prioritization before we worry about commercial shipping. And I'm all in favor of doing all of that.

But to the extent that there are real constraints on workforce and funding flow and suppliers and et cetera, I would prioritize. And before we did anything else personally, I would open up a third shipyard for submarine production. That won't be the most welcome idea in a couple of places, but I think it's the right way to go.

I would do it in a center where there's a large workforce. We have one shipyard in Newport News population of 180,000. We have another written sort of straddled between Quonset Point, Rhode Island and, and Groton, Connecticut, population 10, or I don't know, Jack would know the exact numbers, but these are small places. There are not large industrial workforces to draw in.

If you're worried about submarine design, you can hire a nuclear engineer or a naval engineer from anywhere in the world and fly them to New London and it's fine, but you don't recruit welders from even the next state, frankly. You, you draw on that kind of industrial workforce from your very local population. It's just in the nature of the work. We need to do more to situate some of this industrial activity in places where there are large construction and, and, and manufacturing workforces already. So I think that's a really high priority.

SISSON: Caitlin, you--

JONES: I have other topics too.

SISSON: Oh, okay. There's time. There's still time.

TALMADGE: We know you do.

JONES: Even other submarine topics. Even other submarine nuclear topics.

SISSON: Well, now, I can't ask you about those. It's too much. So Caitlin, going back to some of your initial comments, you mentioned extended deterrence. And it is the case that the administration's current approach to alliance relationships has reanimated discussion, debate, concern in some circles about extended deterrence and that twin, the other side of the coin proliferation or non-proliferation as a priority.

So do you think that the United States should continue to have non-proliferation generally as a strategic objective?

TALMADGE: Yes, I do. And I think the administration does deserve credit that even as they have pushed allies, particularly in Europe, to take more responsibility for their conventional defense, they've actually been quite explicit, both in official documents and also in speeches and other fora that the United States remains committed to extending a nuclear umbrella over Europe and over other, its other treaty allies, which I think is important because it very much relates to the issue that you just brought up, which is non-proliferation.

People I think often forget that the US extended nuclear deterrent which has been part of US grand strategy since the Cold War, really has been a very powerful non-proliferation tool. It actually has played a critical role in reassuring US allies that they do not need to acquire their own nuclear weapons.

And so there is this paradox here where we're all uncomfortable with nuclear weapons, talking about a robust US nuclear arsenal is uncomfortable. Americans don't really like it. But at the same time, it is precisely because the United States has had a robust nuclear arsenal for the last, 70 plus years that I think we don't see more proliferation than otherwise would be the case.

Not to mention the fact that I think it's also deterred conventional and nuclear wars that could have been started by aggressive adversaries. And so this is part of the reason that I think it's so important today to really have this conversation about whether our nuclear posture is sized and shaped appropriately for the changing threat environment.

Because as was discussed in some detail in the previous panel as well, if allies start to doubt the security of that extended nuclear deterrent guarantee that incentivizes them to perhaps seek their own nuclear forces. And for me personally, I think there are some reasons to really prefer a world with.

Fewer new independent nuclear arsenals. One problem I think that could arise if we see allies like Japan or like South Korea as was discussed, or Germany or Poland acquiring their, their own nuclear forces or seeking their own nuclear forces, is you don't develop a full blown nuclear arsenal with secure second strike capabilities overnight, right?

There's a process of getting there. Even if the US were, let's say, to assist them in getting there, it takes time. And during that window, when they're developing those capabilities, there actually are strong incentives for the adversary to try to prevent the development of those independent nuclear forces.

And so even if you said to yourself, ideally, I prefer a world in which there were allies with their own nuclear weapons, and the US was no longer responsible for them, the process of getting from where we are now to that world, I think could potentially be incredibly destabilizing and conflict prone.

And so I think, a decision to back away from extended deterrence commitments is really a decision to accept the risk of possibly very substantial conflict in regions that the United States generally likes to see stable and peaceful. I think the other second problem. Would result from having Allied proliferation is, we would see suddenly a larger number of independent centers of nuclear decision making.

And, the United States would essentially be seeding decisions over escalation management and escalation control to a large number of other states, which, yes, are its allies, but which, it may not always find its interest totally aligning with. And, the United States got a preview of what this might look like during the Cold War when France exited NATO's nuclear command structure and developed its own nuclear weapons.

And, I love France, but as my, my colleague Vipin Narang would say, one, France is enough. Right? And so, we could potentially be looking at a world where allies are making lots of decisions about escalation management, escalation control, independent of the United States, which I think is actually not in US interest and is not going to be a force for, for peace and stability.

SISSON: Mike, do you have thoughts on this combination?

O'HANLON: I think Professor Talmadge nailed it. The only thing I would add is that fully embracing everything she said, we're South Korea to decide to get nuclear weapons. I would try to talk them out of it, but then I would live with it because they're a technologically sophisticated country with a real threat and reasons to doubt us, even though we're still there.

And I think as long as we keep 30,000 troops in Korea, they shouldn't have too many doubts. But given our recent public debates on this topic, I wouldn't blame them for wondering. And so again, I would try to talk them out of it, try to convince them that even President Trump, who was willing to talk about pulling forces outta Korea in his first term, has not gone there yet. At least not yet in his second term. But if they were unpersuadable and their public opinion polls that Andrew and Tom Wright and, and Mara and Suzanne talked about in panel one, continue to strongly favor a South Korea nuclear deterrent, I would say, okay, let's agree to disagree, but let's stay allies.

SISSON: So the implication I think from both of your comments is that the US extended deterrent continues to operate now. What would it take to convince you that it doesn't how much certainty or uncertainty has to obtain for you to feel like that threshold is crossed? We, we have to acknowledge we're in an environment where the United States threatened one of its allies, and yet we are also, contending that it would defend that ally with nuclear weapons as part of the extended deterrent guarantee.

So how do you assess when, when that threshold is crossed? Is there any sort of way to think about it, or is that entirely up to the allies to decide how secure or they do or don't feel?

O'HANLON: I'll, I'll start briefly and then I wanna hear the professor again, but until we actually do pull the forces out and break off the treaties formally.

All the talk about maybe doing so, or maybe taking Greenland or what have you, scares the be-dickens outta me. But it's not the same thing as actually doing it. So I think that's the threshold. And I, I think for now our commitments are fairly robust, partly because US troop presence speaks even louder than President Trump's words to me.

And when you're forward deployed in Eastern Europe and the Western Pacific and American troops would therefore be implicated immediately in any conflict. I think it's not, it's quite credible that we would respond with reinforcements and maybe even with nuclear deterrent options.

TALMADGE: I agree with Mike. I think that this is perceptual, which is what your question is getting at, and it's not really our perceptions that ultimately matter. It's the allies and it's also the adversary's perceptions. And, what would concern me is seeing more allied movement toward independent nuclear capabilities.

And there are, there are some, some hints of that. I think that this is why it is important to assess, if our posture is actually responding to the security concerns of our allies to the threats from our adversaries. And that's not only about hardware and making sure we have a credible force posture.

And I did talk about some forced posture options that I think we should really be thinking about. Short term, long term. The question Bruce raises about do we actually need more Columbia class submarines? But I think it's also a software question, and you saw a lot of attention to the software of extended deterrence in the Biden administration.

And what I mean by that is developing dialogues with allies and working with allies to help them have more assurance about the conditions under which the United States will come to their defense in both the conventional and potentially the nuclear domain. And also thinking about ways to integrate them more into those plans.

And so I, I think that there's there's a lot that we can be doing that some of it we're doing, but some of it we need to do more. But it's ultimately in the eye of the beholder, right? Like we have to listen to what our allies are saying and what our adversaries are doing to assess if where we are currently is adequate.

And that's, that's what has me concerned.

SISSON: Bruce. I will not deprive you of another opportunity to speak on submarines or anything else that you wish. And then after that, we'll take some questions from the audience.

JONES: Okay. I'll make three quick points. First on this topic, all I have to say is vive la France.

Second, Senator Reed touched on this, the first Trump administration introduced the notion of going back to something we had in the Cold War, which was sea launched medium range, quote unquote tactical nuclear weapons on surface ships and on submarines. Biden administration decided not to pursue it.

And Congress recently insisted that we pursue it and put money in the pipeline for it. Russia has theater nuclear weapons. China has theater, nuclear weapons, other people have theater nuclear weapons. I don't know yet what my view is on it. I simply want to highlight the need for a serious and robust debate about whether it helps manage escalation or increases escalation risk.

I don't know my own view on that, but I think it's an important topic to, to discuss. There are other parts of sort of other tools that we need in the same cell cells, hypersonics and other kinds of things. Anyway, we need is there debate about that? And going back to the kind of topics we were talking about before, defense against things.

What Golden Dome will or will not protect us against what defenses we need. The other thing I want to highlight, I keep on trying to highlight this in conversation, is the existence now of long range, long and endurance. Nuclear powered, nuclear capable drones slash torpedoes which Russia now possesses nobody else possesses.

As far as I know, we have no defense against those. Torpedo gives you the wrong image. Think of a school bus minus the wheels. That's what the canyon is. Okay. It's a nuclear powered, nuclear capable school bus-sized torpedo launched out of especially modified submarines. Russia has at least one deployed others in its pipeline.

We don't have those, I don't know whether we should have those. We don't have any serious defense against them other than sinking the submarine itself, which we could presume That, gets back to the question of submarine availability and defenses on paper. Russia treats this as a, what's the correct phrase?

The kind of weapon, right. If you take out our capabilities, if you decapitate our regime, we'll explode these things on your shores and you'll be in deep trouble. But thinking about the use of a weapon can evolve. So I, I spent a lot of my time worrying about how we will defend ourselves against that weapon, I suspect is not the last such device.

We'll see marrying new technologies for drones and nuclear weapons and Golden Dome isn't gonna help us on that. And so we have to think hard about defenses against some of these new types of weapons.

SISSON: Okay. Alright. Let's look to the audience for some questions here. We have a person in the second to last row.

AUDIENCE QUESTION: Hello. I'm Liz Muir from the Estonian Embassy in Washington, DC here. Thank you for addressing the question of extended deterrence at such length. This is really an important issue that we, US allies on NATO's eastern flank are really looking at very carefully now. And Caitlin, I wanted to address this, this question particularly to you.

Of course everyone is, is welcome to comment, but you mentioned some ways how us can maybe improve its forced posture to reassure allies about the credibility of extended deterrence. Could you comment also briefly on the sort of regional posture force posture aspects, considering also the tactical options that are available, for example, to Russia and to China in a regional war context that might not be available to the us?

Would there be some changes in regional posture that us could be making to both reassure allies and to have a more effective force? Thank you.

TALMADGE: Sure, thank you so much for the question. So I think it's the right question. Part of the point of what I'm trying to get across is I think that the US is not having the conversation that it needs to have to answer that question because I think one of the, one of the things we saw in the Ukraine 2022 nuclear scare, and that I think is also what you're getting at, is that there is the possibility of Russian non-strategic nuclear use.

And the question of whether the US has a posture that's really equipped to deter at, at those particular levels or, or, potentially respond. I ideally the point is you demonstrate an ability to respond and therefore you, you prevent it from ever happening. And of course the US does

have dual capable aircraft that are, forward deployed in Europe and that, that represent those non-strategic options.

But with the proliferation of these weapons by Russia and just the strategic environment, I think it does raise the, the question of whether the United States might want to develop capabilities that previously had been banned by the the INF treaty. And so I don't have a pat answer as to what the US should do or what it will do, but I think this is exactly the question.

The one thing I will add though, I, I know this is an event on nuclear issues, but I think what I would also like to see is the United States and its allies, to include those on, on the eastern flank of NATO, also developing certain conventional capabilities that I think are, are really important and are missing.

The Europeans have lots of conventional capability, but their ability to actually mobilize it, especially on the relevant timeframes and perhaps with limited US support, given some of the changes that the administration is signaling, is really concerning to me as far as being, being where it needs to be in time to deter Russian conventional aggression.

And all of the scenarios that I worry about for nuclear escalation in Europe start with a conventional deterrence failure. And so while we, we are having these conversations about nuclear weapons, they're important. I don't think they should obscure the fact that there are a bunch of things that we need to do at the conventional level as well.

SISSON: Great. Next questions we'll go here. There's a person in a yellow neck tie.

AUDIENCE QUESTION: Hi, Dan Roper from the Association of the United States Army. Following up on what you just said, professor, I'm very interested in your thoughts on the impact of cyber attacks on the state of deterrence, because we talked earlier this morning about spaces now a contested domain. The convention, there could be a conventional failure that invites some kind of aggression, but cyber seems to be something that is, it's happening right now and it affects decisionmaking people, of people in many different domains. But let's talk about the nuclear domain, if you would please.

SISSON: We'll take one more before we get started here. There's a person in the very back row, please, in the dark suit jacket.

AUDIENCE QUESTION: Hi, my name is Dania and I work for the Ministry of Foreign Affairs for Netherlands. And I had a question about this US posture. So there has been mentions of the US extending its nuclear deterrence, its nuclear umbrella, which really makes it seem as the US to be a reliable security partner. But at the same time, when we look right now at the geopolitical tensions, the pressure points, especially in defense the proposed acquisition of Greenland by the US or the vulnerability of NATO right now, do you think that this advanced US nuclear posture can also have adverse effects on the already declining image of the US as a reliable security partner for the transatlantic relations? Thank you.

SISSON: And we'll take one more. Does anybody have a question about submarines? Why don't we go here with the blue sweater please?

AUDIENCE QUESTION: Hi I'm a university professor from Taiwan and I'm right now the visiting scholar in University of Washington in Seattle. Okay, so I have a question. We know

that the Taiwan is not the formal treaty ally and it does not fall under any US nuclear umbrella commitment right now. So I have a question, in the context of a Taiwan Strait crisis, can extended deterrence realistically deter China, Chinese nuclear coercion or nuclear signaling? And the more critical question is that does extended deterrence have a structural breaking point? That is a, a a threshold at a situation that China's growing nuclear capabilities renders the credibility of the nuclear of the US nuclear assurance fundamentally untenable.

SISSON: So we asked for three questions and we got six. So you can take your pick. Why don't we just start down the line and, and offer remarks as you see fit.

O'HANLON: I'll be brief on the last question and leave the others to my co-panelists. I think that first of all, there is no, as Senator Reed explained, we have a policy of dual deterrence or strategic ambiguity towards Taiwan, as you well know, professor, but I don't think there's any distinction within that that says we would only, if we choose to fight in Taiwan's defense, we would only use conventional forces. There is no such implication or understanding. China would have to worry that we would consider escalation options. Having said that, heaven forbid we ever wind up in that place. And I take your point that there is some ambiguity. Taiwan might prefer more clarity. If we ever wind up using nuclear weapons in the defense of Taiwan, we've already lost regardless of how many more warheads we build or what Golden Dome we create. So that would be, and that's a maybe obvious point, but just worth underscoring as I conclude my remarks for today.

TALMADGE: I agree very much with that. I think that we should, in considering our, our nuclear posture, think about deterrence of China at the nuclear level in a Taiwan scenario, as as distasteful as it is.

And as much as we would wanna avoid that, I think it's actually, something that we need to take into consideration along with conventional deterrence as a means of preventing conflict in the, in the strait. I, I think it underscores, given all the changes in China's nuclear posture, why the United States may wanna consider some of it, its own posture.

On the question from the Netherlands, I believe it was about whether changes to the US arsenal, could, could potentially be destabilizing. To my mind the sorts of adjustments that I am talking about are relatively modest. They do not involve starting an arms race, but they do involve making adjustments in consultation, I think, with allies, understanding the security concerns of allies in order to make extended deterrence guarantees credible.

I also think, something we haven't talked about as much on this panel, but I still think arms control is really important. And I think that we, we, we are very used to arms control being just like the furniture. It's just there all the time. And the reality is right now we have adversaries that are not interested in arms control. And I think part of that is because no costs have really been imposed on them for walking away from arms control or from refusing to engage in dialogue about arms control, even informal arms control, as Senator Reed was talking about with China. And so again, I think part of making some of these adjustments in our posture might be about creating some pressure and some incentives for adversaries to think about limits on forces, which actually is how we got to things like the ABM treaty or the INF treaty in the past.

On cyber, I'll just say that I have a contrarian view on cyber, which is that I often think about it as just another kind of information component in the nuclear balance or in the conventional balance. I think it's been remarkable. In Ukraine, we thought it was gonna be this, in the

Ukraine war there was gonna be a big, it was gonna be the cyber war, right? Because you had two adversaries that really had important, capabilities in this area. And it hasn't really turned out to be like a game changer in that war.

The war has been dominated by conventional ground forces and then also other new technologies like drones. I think where it does matter a lot for nuclear deterrence is cyber has the ability to potentially implicate countries command and control of their nuclear forces. And so I think that that's something we always wanna be thinking about and I think it's something we want adversaries to worry about.

SISSON: And Bruce, with the last word please.

JONES: Couple of thoughts. I confess I would, if I were an Eastern European state or an East Asian state, I would lean a little further into developing something closer to a latent capability. I won't go too much further than that, but I would lean a little further than that.

Not all the, the answer to all problems are not submarines but sometimes it is. And South Korean desire to acquire nuclear powered submarines, that is not the same thing as having nuclear weapon. But you develop some skill sets, you develop some workforce, you some industrial capabilities that should you choose to move towards latency would have been useful things to have done. I don't see any concern with that personally.

In case of Australia, in the case of North Korea -- I, sorry, South Korea, it's a big problem if it's North Korea -- if Germany wanted to have a serious discussion about SSNs, seems to me that's a discussion worth having.

At last, I want to end on arms control and I want to point to an article that Mike wrote with Amy Nelson, I can't remember when, a few months ago, which I thought was extremely clever. And talks about the possibility of creating an All START treaty working through the mechanism of the P5 of the Security Council where France, Britain, already there, China, Russia already there, both of those countries have a quite an important diplomatic, political-- what's the word I'm looking for? There's a lot of prestige involved in being P5 members and the things that come with it. Trying to move through that mechanism to create some dialogue around nuclear issues, potentially inviting in other nuclear or would be nuclear powers. I think that is actually well worth pursuing.

It's very unlike the United States to think about a multilateral thing as useful. But in this case, I think a multilateral thing might actually be more useful than trying to restart bilateral talks with the Russians right now or with the Chinese and I, I think it might be harder for them to resist something moving in that in that space. So I'll end on that slightly positive note.

SISSON: Great. Well, thank you all very much for joining us today. Please be sure to check the Brookings website so you can come again next time. In the meantime, join me in expressing some appreciation for our excellent panelists today. Thanks.