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THE AMERICAN ECONOMIC RECOVERY AND  
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## P R O C E E D I N G S

MR. O'HANLON: Good morning, everyone. Thank you for being here. Nice to see you on July 2<sup>nd</sup>. I'm Mike O'Hanlon at Brookings with the 21<sup>st</sup> Century Security Intelligence Center. And we're delighted today, as part of our ongoing defense industrial base project, to be hosting an event on essentially what you might call the metropolis and the military. And if you want to think of it in different terms, we're beginning with a presentation that will be, I think, a really special treat for those of you who are in the defense world, and other worlds, and haven't yet heard Bruce Katz speak about the ongoing metropolitan revolution in the United States.

A book titled, by the way, that same exact phraseology has just come out, and you may have seen it on your way in. You're welcome to purchase it if you wish any time during the event. We'll even allow you to get up during his presentation for that purpose at least.

But, more seriously, Bruce runs our Metropolitan Studies program here at Brookings, an absolutely dynamic and path breaking center that does a tremendous amount of work with local communities thinking about how they can improve their economies and how they can take advantage of technology and the workforce that may be around them; how they can build that workforce, take advantage of infrastructure, take advantage of new ideas and new opportunities with export markets with new technologies to be successful. And this struck us in the defense sector as a perfect topic that is synergistic with all we're trying to do with the defense industrial base project. And so to paraphrase Abraham Lincoln, which seems appropriate on the 150<sup>th</sup> anniversary of the Gettysburg battle, we appreciate your participating in this great experiment. We're trying to see if this great experiment can succeed, which is to bring metropolitan studies and defense studies together, and, frankly, it should succeed, because we all need each

other.

So, that's the philosophy. That's the spirit of the event this morning. And you'll have to help us make it work, because we're going to go from Bruce's presentation to Q&A with him to then the Defense Panel, and we're going to look to blend these topics and make them sing together.

So, without much further ado, let me simply say that I'm delighted to have my friend Bruce Katz kicking this event off today. Bruce is, as I said, the director of our Metropolitan Studies program, vice president here at Brookings. He's been running this now for about 15 years. He's the founding director of the program, a former assistant secretary in the Clinton Administration, also a part of the transition team for the Obama administration. But I think, even more than that, what we're struck by, those of us who are lucky enough to be his colleague at Brookings, is the way in which he's working with it seems like everybody -- not just around the country but around the world increasingly -- on this metropolitan revolution as he describes it.

So, without further ado, please join me in welcoming Bruce.

MR. KATZ: So, I just want to thank Mike for this invitation, because the two of us have been talking about this experiment in trying to bring our two worlds together for some period of time. And, frankly, when I go around the United States and speak primarily to groups of business, political, civic, and university leaders there is an understanding in metropolitan areas of the central role that the military economy plays and of the interplay of R&D and innovation and production and skilled workers and so forth. So, in many respects outside of Washington these connections are getting made.

As you watch this presentation, what you will see is a series of animations and videos from a free iPad app, so buy the book, download the app, and then see the movie, I suppose, at some point.

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So, let me start with this perspective. I think we're living in a pivotal decade for our country, and here's the way we see it from a metropolitan perspective.

First, we need to grow more jobs, 10.1 million jobs, to make up the jobs we lost during the downturn and to keep pace with population growth.

We also need better jobs, because we've seen a quantum leap of the number of people who live in poverty or near poverty from 81 million in 2000 to 107 million in 2011.

As everyone in this room knows, we've got a political crisis, essentially, in Washington, D.C. Here's the quote from Senator Joe Manchin from several months ago: We have a national government that essentially is mired in partisan rancor at any logical polarization. But there's also something structural happening in the federal budget, which all of you have experienced, obviously, with sequestration. Over the next 10 years we will see a dramatic shift of federal spending toward entitlements, and obviously payment on the debt, entitlements because of the aging of our population. We've known this has been coming for some period of time, but 10 years from now read the back pages of the CBO and OMB estimates about how much more we will be spending on Medicare and Medicaid and Social Security and the impact that will have on the discretionary side of the budget. Pretty critical.

Now, that all that affects how the United States thinks about moving forward after this recession. Pre-recession, we essentially had an economy characterized by consumption and debt. If we're smart, we will move toward an economy that is fueled by innovation, ideas, and manufacturing; powered by low carbon and advanced energy; driven by exports and global engagement and an economy that is rich with opportunity.

The good news is that manufacturing has been driving this recovery.

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There was this narrative that somehow the United States had become a post-industrial economy. Obviously, people in the audience know that's not true. But manufacturing is only about 13 percent of the U.S. economy, 20 percent-plus in Germany. But it's been 37 percent of our economic recovery.

What's happening is really this juxtaposition of the shale gas revolution and a precipitous decline in natural gas prices, energy prices, and the rise in manufacturing wages and, obviously, other very systemic shifts around production, innovation, supply chain economics, the geography of innovation.

I think what it's reminding us is that the American economy is not just about entrepreneurs or celebrity entrepreneurs like Steve Jobs for cracking the code on complicated issues. But it's really about the eco system between universities, companies, government. Very sophisticated interplay.

Here's an animation that makes that point -- hopefully.

(Short video)

You can see why this is an experiment. (Laughter)

So, I think what we're relearning after this recession is why manufacturing, production, innovation, advanced industry is so important to the American economy -- 9 percent of the workers, 35 percent of engineers, 13 percent of the economy, 68 percent of R&B, and 90 percent of patents, right? We have to understand the inextricable link between production and innovation and technology, something that we really forgot.

We also have to think about the supply chain in North America. You think about aerospace, right? Critical advance industry in the United States on the civilian side. It's not just an American footprint; it's a Canadian, American, and Mexican footprint. We're taking a group of leaders to Queretaro. It's a small city about two hours

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north of Mexico City to see the sort of rise of an aerospace hub literally within the past seven years directly connected into Wichita, Seattle, and Montreal.

Electronics. A little different spatial geography, right? The critical manufacturing prowess of San Jose. It's not just about Facebook and Google in Silicon Valley. A large portion of the Silicon Valley economy is dedicated to manufacturing and exports. Obviously, the role of Portland, Quebec, other Mexican metros.

And then, of course, automotive, right? Ontario, our Midwest, our border states Kentucky and Tennessee, the significant role of foreign direct investment in the auto sector from Japan and Germany, and then our close working relationship with our Mexican partners. Post-recession we need to understand the competitive platform, not just of the United States and our metropolitan economy but of our Canadian and Mexican partners.

Now, one major challenge we have post-recession as we try to rebuild and re-shift and restructure economies, understanding the fundamental need to upgrade the education and skills of our workforce, particularly our diversified workforce. We have huge racial and ethnic disparities on education and skills in the United States. We've tended to think about these as really an issue of equity, an issue of fairness, which they are. They are fundamentally an issue of competitiveness and national security. And as we think about going forward, we are rediscovering the fundamental role of vocational education, career and technical services, what we used to call "shop" in the United States, right?, what we used to call "craft," what we used to call "trades" -- very important to the metropolitan economies and to the military economies.

So, that's a macro-perspective, right? Post-recession. When you get hit with this kind of wakeup call, you need to think about restructuring the economy and returning to fundamentals. But the macro-economy comes to ground in metropolitan

America.

We have 388 metropolitan areas in the United States -- cities, suburbs, exurbs, rural fringes altogether. The top hundred, just the top hundred -- one-eighth of the land mass, two-thirds of the population, three-quarters of the GDP. But this is what really matters on every single indicator that drives an economy: skilled workers, advanced industry employment, patents, infrastructure, freight and passenger movement -- 75, 80, 85, 90 percent of the national share. For all intents and purposes, there is no American economy, right? What we have is a network of metropolitan economies, and that's what makes us such a powerful economy in the world.

Let's again go to the videotape about how metros are beginning to rethink their economies post-recession.

(Short video)

Okay, sorry to some Nats fans in the room, right?

So, our book tells seven stories, and it tells stories of what we call game changers in metropolitan America:

We tell the story of Denver in L.A., which is metros using their own resources to invest in state-of-the-art transit.

We tell the story of northeast Ohio, which is philanthropy and business coming together to provide support for small and medium-size manufacturers as they retool their facilities and retrain their workers.

New York. I'll go into more depth on this story. The applied sciences network, New York purposely trying to diversify their economy toward technology and innovation post-recession.

Portland. Portland may be (inaudible), right?, but it's also a computer and electronics hub, as you saw before, and post-recession there even more focused on

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exports and global engagement around computers but also around sustainable products and services.

Houston. One of the most diverse metropolitan areas in the United States fundamentally focusing on how do we integrate immigrants, our foreign-born population, into the economic mainstream, make them strong entrepreneurs, talented workers for the future.

And even Detroit. Detroit, which is a city that is essentially on the brink of bankruptcy finding its road forward through the revival of its core -- the downtown and the midtown around Wayne State, Henry Ford Health System, Detroit Medical Campus, the College for Creative Studies. That's how this country will grow forward.

Let's just talk quickly about New York City, because it's really important to understand the dynamics of economic restructuring. There what has happened essentially in the depths of the recession is Mayor Bloomberg convening hundreds of corporate university leaders and basically saying we're the epicenter of this recession, and we are too dependent on financial services; we need a game changer, right?, to set a platform for long-term economic restructuring. What they choose is to try to make New York City a center for technology and innovation through three major campuses, the most interesting one being the campus of Cornell and Technion, which will be on Roosevelt Island, which will be an applied science district. \$130 million, right?, of infrastructure financing coming from the city's capital budget, leveraging \$2 billion in the near term as they build these new campuses; \$30 billion over the next 30 years; 50,000 jobs, a thousand startups. New York City is trying to remake the image of their economy. Let's hear from them.

(Short video)

So, that's New York. Let's just go to northeast Ohio, because I think it's  
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important to talk about what's happening there. And, again, something is happening in the United State: re-shoring of production, the interplay of innovation and manufacturing. The interplay of manufacturing and services, right? Our lexicon doesn't even really explain how we get stuff done anymore. In northeast Ohio what you see is philanthropy and business coming together and fund for our economic future. Over the last 10 years, they basically have set up intermediaries and special funds to help small and medium-size manufacturers -- the supply chain, right? -- retool their facilities, retrain their workers for new products. Businesses that were fundamentally involved in the auto sector are now expanding their purview to include solar, right? Others that were involved in the health care sector are also now involved in other renewable energy sectors, right? And what these small and medium-size manufacturers need is a collaborative network, because they are too small by themselves to basically take on these major tasks.

Again, Brad Whitehead from L'Enfant.

(Short video)

He was not paid for that, by the way. (Laughter)

So, that's the story that we're telling in the United States, right? -- metropolitan leaders, cross-discipline, cross-sectors, cross-party, right?, being very pragmatic, being very focused on how do we leverage the distinctive assets of our particular places to become more prosperous post-recession. We don't think these are exceptions; we think this is just the beginning of the wave.

Now, what we are basically doing -- and then I'll bring it back to this event -- is spending time with these leadership networks around the country and helping them understand how they move forward in the absence of federal leadership. Again, they are understanding that this is really what the federal government used to do. Many more things -- many significant elements are going to be devolved down, right? Not

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entirely, right? The national government will continue to invest in many of these critical aspects. But these areas of domestic policy will be even more shared than they are today between local, metropolitan, state, federal, private, civic. So, everyone's getting ready for what could be a dramatic re-sort.

So, what we say to metropolitan leaders first and foremost is create your own networks. Cities and metros are not governments by themselves. They are networks of leaders, and the most important -- or the stories we tell are really about different parts of the network standing up whether it's elected leaders like mayors and county leaders or whether it's the business community, major employers, CEOs of major companies, business associations, or whether it's the voluntary and the civic and the university sector. Networks coming together -- you know, all parts of the network are obviously powerful by themselves, but when they come together they can do grand things together.

The second piece, once the network is formed and sharpened, is obviously to set to the vision. When you saw those maps of North America, what you saw was a differentiated manufacturing economy, right? I mean, the real economy is not the same from place to place. It's not like going to Wal-Mart in suburban Denver versus suburban Detroit or Phoenix versus Pittsburgh, right? Where it's the same footprint, same design, same prices, right?

The manufacturing economy is highly variegated and is really dependent upon different assets and attributes and advantages in different places. So, when networks are formed, what they really need to do is a little bit of unveiling what makes them special in the world so that then they can move to the final piece, which is to find your game changer, right? A game changer in one particular metropolis might be infrastructure. In another particular area it might be the commercialization of innovation.

Probably everywhere, given the education statistics I showed before, it is skilled workforce, right? Because if we have a STEM economy, it may be hidden. We need to have the workers to basically power that forward. I think as we go forward, what we will see is metro after metro after metro finding their game changers, transformative interventions that 30 or 40 or 50 years ago from now we'll look back and say that started a shift in their economy: the applied science district in New York, the transit in Los Angeles, right?, the northeast Ohio manufacturing intervention.

We just worked with Governor Hickenlooper and the business leadership in dozens of companies in Colorado to help them find their game changer. There's an enormous presence in, obviously, Denver, Boulder, in the private space industry, right?, probably because of Denver International, partly because of the way companies have located there for many different reasons, including the military manufacturing. And what we basically tried to do with them is understand that this could be a major source of innovation and production and services for the Denver metropolis going forward. But that means they need to be focused, right? They need to brand this emerging cluster of companies and institutions and skilling intermediaries. They need to basically find what are those interventions that are most likely to have not just a high return on investment but a high return on community, which is really the language that people use more and more in metropolitan areas today. And they need to understand who they're competing with, not just in the United States but, frankly, globally as we think about this new possibility of space travel primarily coming out of the private sector.

So, here's where we think we're going in the United States, and I know this will be a bit provocative for this crowd, but I think it fundamentally reflects the nature of our federal republic today. We're a couple days away from our Nation's birthday. I think maybe in a couple of years this is what we'll be celebrating.

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(Short video)

So, when I look across America what I see is a country rich in leadership. I see some of those powerful and resilient and vibrant and vital metropolitan economies anywhere in the world. We have unbelievable assets and advantages in this country, and I think going forward, even in the face of federal dysfunction and drift, let's remember what makes our country so competitive and so powerful in the world.

Thank you very much.

Questions, comments, criticisms. And, remember, download the app.

Right over here I think -- yes, perfect.

MR. GRINDSTAFF: Huge Grindstaff. You know, I think this -- you need to get Congress sitting together and present this to them, because like Senator Manchin said, unless they do something to unlock what's going on with sequestration, a lot of the other stuff, the thought of going forward and having a stable way of looking at things isn't going to do much.

MR. KATZ: Well, I think that's a great comment, and I really do believe that the power of this country is the fact that we have a representative democracy at the end of the day -- I worked on the Hill for six years, and I worked for members from California and Maryland and Michigan -- at the end of the day they represented their states or House members represented their districts. And I think, you know, the end product of this presentation is that at some point in time, parochialism will trump partisanship, because these cities and metropolitan areas and the non-metropolitan areas that they have very close relationships with have very special assets and advantages and attributes that if we're smart we can leverage and exploit for, really, the prosperity of our country and our citizenry. So, we're hoping that that's the message that comes across here.

We work with governors both sides of the aisle, right?, because at that level they understand -- even though they might be Republican or Democrat or liberal or conservative -- that they are elected to get stuff done. And, you know, we will find the right venues to get this message across, but thank you for that comment.

There's one right in the back. All the way in the back.

MR. PETTIGREW: Good morning, Bruce. Andre Pettigrew with Clean Economy Solutions.

MR. KATZ: Sure.

MR. PETTIGREW: Given the sort of dynamic changing, can you speak to what the financial statement looks like in this new metro region? Sources and uses of funds are different.

MR. KATZ: Yeah.

MR. PETTIGREW: Federal funds declining, state funds haven't raised up, leadership role for the private sector, trillions of dollars on the bench. So, can you talk a little bit about how we -- you know, what does it look like going forward?

MR. KATZ: So, that's a brilliant question, and I really do think that the financing question is -- was if not the most important one, the most important. So, think about the United States particularly with regard to what matters for our future. Innovation, infrastructure, and human capital is a continuum, right? At one end of the continuum you're really a federal dominance. That's in the entitlements for sure -- social safety net -- but also in advanced R&D, basic science. That's why the national government has been -- well, that's why the United States has been such a powerful economy, because decade after decade whether it's energy, whether it's health, whether it's defense, we've made investments in the Stamfords and the MITs and the Georgia Techs -- and I can go on and on -- in basic science and applied research, which could

commercialize the next set of products and services.

At the other end of the continuum, you have education skills, right?: K through 12, pre-K, community colleges, four-year colleges. A lot of that is basically either locally or state-financed or financed off of tuition or financed off the balance sheets of many of these institutions, right? Very different financing going on in education and skills. And somewhere in the middle is infrastructure: roads, rail, ports, airports -- I can go on and on -- transit. Very shared in the United States.

You know, I talk to a lot of national leaders, federal leaders. They think the federal government is financing a good portion of our infrastructure. That's actually not the way it works in the United States. It's very much variegated across our levels in our federal system, and then private and civic. And there's a new math to infrastructure. If we went to Detroit today, they're hopefully building a new bridge across the Detroit River to Canada, our largest trading partner. The Canadians are financing it. You go down to the old Woodward Corridor in Detroit, they're building light rail. A hundred million of corporate and civic money from the city. Only 25 million from the feds, energy infrastructure, and so forth.

I think as the feds scale back in the discretionary spending -- and, frankly, even if they held steady, it's a scale-back. It means the country's growing by 30 million a decade, so there's growth erosion. I think what you're going to find is cities and metropolitan areas and a few states coming up with some public/private financing mechanisms, greater use of market mechanisms, and this collaborative notion of how do you crack the code on some of these big challenges. The bottom line for our country is we have to invest in the future, education, infrastructure, and innovation. But the roles of different levels of government will be quite different, and more and more we'll see the private and civic sector coming to the table.

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Question right over here.

MR. MITCHELL: Bruce, thank you very much. I'm Garrett Mitchell, and I write the *Mitchell Report*.

I want to ask a question in two parts, and that has to do with a -- I thought one of the most interesting statements you made was there's really no such thing as an American economy but a network of these metropolitan economies.

MR. KATZ: Right.

MR. MITCHELL: And with that in mind, I'm interested to know, as you look around the world --

MR. KATZ: Right.

MR. MITCHELL: -- and you see this perspective catching on here, who else is doing -- what other -- I know Kenichi Ohmae has written a lot about the next global stage in Japan and China, but are we way ahead of the pack? Are there others who are thinking in this routine? How is this phenomenon working out globally in your mind?

MR. KATZ: So, I think that's a great, great question. And I do think that the U.S. is the quintessential metropolitan nation, because we're obviously, like many other parts of the world, you know, a country where the cities and metros are the engines of economy and the centers are traded investment and clearly the vehicles for environmental sustainability and social progress. But we also have diffused power in this country. We are a federal republic -- more than, really, any other country. And when I look around the world, you know, what I see is, you know, Europe, a much more centralized power, I mean, particularly in places like Britain, you know, where 94 percent of the revenues are essentially raised by the national government; India; and Brazil, where the central government and the states are very, very powerful but mayors less so and not as much of a civil society, this collaborative network.

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In some respects, China may be more comparable to us, because in China, you know, with urbanization being such a central focus of their growth model, the interplay of city and national leaders is seamless. And, you know, in some ways there's much greater understanding of the need for cities and metropolitan areas to have power and responsibility that is aligned with they're an economic foundation.

I think the U.S. is essentially at the cutting edge of a huge devolution revolution in the world. I think in this century, because urbanization is the defining trend in the world, and the unifying trend in the world, power will ultimately shift down. And what you ultimately will get from that kind of shift is probably greater efficiency as investments are more customized and aligned with the special attributes and advantages of different places.

So, I think, as with the American Revolution, we're getting there first. But, trust me, the rest of the world watches what we do. And I think what they will take from our revolution, our metropolitan revolution, is the need for cities and metropolitan areas to have greater power and responsibility and the need for networks and leaders to come together to problem solve, because it's that power of the network in the economy and our cities and metropolitan areas that really is the defining characteristic of our age.

Any other thoughts, comments? Two here and then Michael will tell me when to shut up.

SPEAKER: Thanks for the presentation. I'm wondering whether the focusing on the game changing, as you put it, is not putting all your eggs in one basket, which I can think of as having two consequences: One, is there a place for an applied scientist in Ohio? And, two, what happens when the private space industry -- there's a slump in the market? Does Denver go down?

MR. KATZ: Yeah. So, this is a great question about game changers and  
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where do you place your bet, so to speak, and I would say, you know, most smart cities and metropolitan areas have a portfolio approach, I mean, frankly -- right? They understand they've got to walk and chew gum at the same time. I mean, you've got to look at different kinds of interventions. I mean, the odd thing about Washington right now is it seems like we're going to talk about immigration as if it's the only issue we can talk about at the same time, right? Last time I checked -- remember those statistics -- 10 million jobs deficit, 107 million people in poverty and near poverty? You'd think they might be able to talk about more than one thing, right? Cities and metros get that. When I go into a city in a metropolitan area, they will be talking across all these different elements, and they will basically say here's a game changer we invested in five or seven years ago; we're checking the pulse; we're deciding how to, you know, course correct; here's the next one we're working on. Success leads to success.

One of the most interesting stories in this book that I think you'll read is about Denver. Forty years ago the Denver cities and suburbs were at each other's throats, as they were in many parts of this country because of race, because of educational issues, because of fiscal issues. Then they came together and they began to do grand things together: culture and arts; the airport, right?; global connectivity; and now the largest light rail system in the world, 118 miles. And now they're talking about space.

So, these -- you know, I think cities and metropolitan areas understand you don't bet the farm on one particular thing. They understand you have to work on these multiple levels to fundamentally undergird your distinctive strengths and assets, and I think this is the kind of pragmatism and multidimensionality that ultimately they can teach Washington to do again.

One over here, and then maybe that'll be it.  
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MR. GREENBERG: Not to jump the gun for the next panel, but perhaps this is a good transition. Sidney Greenberg, *Breaking Defense News*.

How on earth does the defense sector fit into all this? Because as I haven't covered it for a while, it seems like where it's innovative, it's not driven by DoD, like cyber and network technology. Although it's written by DoD, it's not innovative. Shipbuilding, tanks, you know, areas that are basically government funded oligopolies that are stagnant. So, to what degree is the defense sector at all relevant to this very exciting and beautifully animated story?

MR. KATZ: Well, Owen Washburn is here. He built the app, so he'll be very happy about the beautiful animation.

Look, I think -- and this is what the experiment is here. I think we've got a van diagram around here, right? I mean, we have our perspective of the world -- very subtle, right? Metro's power of the world. And then we have the military economy in the United States. And somewhere in the middle I think we're going to find our shared interests around skilled workers, around rapid deployment of innovation, around the ecosystem that connects advanced R&D to commercialization to prototyping of products to mass production, not just with enlarged, vertically integrated companies but, frankly, within supply chains, right? Small and medium-size manufacturing firms that fundamentally engage with the majors, you know, in very intricate and sophisticated ways.

So, I think there's something to each other. And, again, going back to my initial comment, when I go around the United States and speak to primarily metropolitan business and university leaders, the military economy is present, because it has many of the same issues: How are we going to upgrade the education and skills of our work force? How are we going to crack the code on clean energy, right?, given, you

know, real supply chains out in the real world?

I mean, I think there are a lot of things that we can teach other here. But I'm obviously not, you know, a military industrial expert. So, I'm actually looking forward to the panel so I learn some things and we see where is the synergy here? Where is the connection? And more and more, as we go forward, you know, sort of bridging the divide between, you know, these two aspects of our economy I think will be quite interesting.

MR. O'HANLON: Bruce, before we thank you, this has just been fantastic, and it's, I think, setting up a lot of great things. Let me ask one more question.

MR. KATZ: Sure.

MR. O'HANLON: It's sort of a transition question in some ways, but just how bad is sequestration, or what you're talking about? Because I get a mixed -- just to set up the answer -- I get a mixed message I think, which is probably healthy -- it may be consistent with some of what we'll talk about in our panel -- on the one hand, the arbitrariness of it can't be good.

MR. KATZ: Yeah.

MR. O'HANLON: On the other hand, you're talking about leveraging new sources of capital that may reduce the relative importance of the federal government. So, how should we think about the ongoing effects of sequestration on the kinds of budgets in R&D and innovation in education and infrastructure that affect the revolution that you're talking about?

MR. KATZ: Yeah. Sequestration is really troubling to me, because it means that the national government is incapable of making choices and setting priorities for what matters to our country. And so the notion that everyone is just going to get a haircut, you know, of 8 or 10 percent means that there's no difference to our future in advanced R&D versus other parts of our budget. I regard the federal government

essentially as a legacy government, which is just an accretion of decisions and investments and interventions over long periods of time. We need to get the house in order here and we now need to decide, given the budget trajectory that I showed you at the beginning, large shifts to entitlements, and so forth. We need the national government to have a re-sort. What do you really need to do at the beginning of the 21<sup>st</sup> century? What are those essential roles and responsibilities you have? Because cities and metropolitan areas can't do those things. Do those things; do them well; do them at scale, right? And then other things that perhaps can be devolved further or devolved in such a way that we can take advantage of private and civic sector innovation we can do in a more measurable way.

I don't think -- you know, in the end, I think we're going to have a *de facto* re-sorting of the United States as opposed to a *de jure* re-sorting. But I really think that coming out of sequestration, the message I think I take from it is that it's absolutely essential to get the signal across that we need choices to be made, priorities set for this level of government if the U.S. is going to set a platform for growth and prosperity going forward. And I think that will be the message that mayors and governors, but more importantly, business, civic and university labor environmental leaders carry back to Washington. They know they're on their own, but they can't be alone. It's a fiercely competitive world out there, and we do need the national government to get smart and strategic and pragmatic and affirmative.

MR. O'HANLON: As I invite the panel up, please join me in thanking Bruce.

MR. O'HANLON: Well, now we're really privileged to try to link what we've been talking about and hearing about to some more classic issues that at least are

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more classic to me in terms of issues we usually talk about in our Defense Industrial Base Working Group.

We have a wonderful panel with some very broad and fresh perspectives to bring to bear on this. And again, we're going to look to the panelists and to you to keep looking for linkages between what we've been talking about so far and the ongoing subject before us now on the defense budget, defense sequestration, defense strategy.

So there will be moments where we make that link more clearly, other times where you'll be welcomed later in the discussion to bring us back to any topics of synergy that you see.

What I'd like to do is just very briefly mention who's on this panel. And I think most of them are well known to you. My good friend, MacKenzie Eaglen immediately to my right at the American Enterprise Institute who worked on the independent panel on the Quadrennial Defense Review three years ago, who has been also an important staffer on Capitol Hill, who proves that you can do a lot of great things despite bad teaching from your professors, because she's a former student of mine and has obviously overcome that liability to do wonderful things and is just a path breaking scholar at AEI who, I think it's fair to say, has some concerns about where the defense budget trajectory is headed, but is working very hard to look for ways to make the defense establishment more efficient even if the cuts are troubling in scale to her, as to many of the rest of us, I believe.

Jay DeFrank spent 30 years in the air force, retiring about 6 or 8 years ago, at which point he moved to Pratt & Whitney. He's the vice president there, a company making some of the best jet engines in the world, if not the best, as well as many other things, part of the United Technologies Corporation. And Jay has been an invaluable friend and colleague to me over the years as we thought through the future of

the defense industry and American defense capability.

Nelson Ford, former Under Secretary of the Army, former Assistant Secretary of the Army for Financial Management, currently runs the Logistics Management Institute, LMI, and interestingly, has a great background not only in defense issues, but in a lot of the kinds of questions that defense, like any large organization has to contend with.

His original real background is in health care. He was a consultant on health care in much of the 1980's and then was chief financial officer at Georgetown University Hospital in much of the 1990's. So he really comes at defense issues from a number of important vantage points, not least of which that his three children are all currently in the active duty military today.

And then my very good friend and colleague, Richard Bush, who runs our Center on Northeast Asia Policy Studies, who's a prolific author, spent a dozen years on Capitol Hill working, among other things, for our good friend, the late Congressman Steve Solarz, but also spent five years in Taiwan, at the American interest in Taiwan mission of the United States. And working both here and in Taiwan on these issues over the years has been a very, very important bridge between these two important players in international politics, but obviously has done a lot more than that.

One of my favorite books of his is about the perils of proximity and the Japan/China relationship which was prescient to say the least in many of the difficulties that it foresaw in what their relationship might become, and, of course, an ongoing challenge for all of us to work on. And Richard, of course, will be able to speak to the question of how sequestration is effecting the so called rebalancing to Asia. On the one hand, the Obama Administration has tried to reaffirm and reassert our commitment to the security of the Asia Pacific. At the same time, Washington, and blame who you will, but

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Washington collectively is unable to sustain some of the very commitments that were part of that rebalancing, or at a minimum, they're now in jeopardy, and I want to ask about that. So you can see, we've got a lot of talent with a lot of different points of view, some of it defense industry, some on broader defense strategy, and also on the regional issues of the Asia Pacific.

And I think I'll work this way starting with Richard. And what I'd like to do if I could, Richard, is really to ask you for your overall first impression. It's July 2nd, we're a few months into sequestration. Is this problem affecting the Asia Pacific and our presence therein at all yet?

And one last word of brief introduction. As a number of folks saw, it was yesterday's *Washington Post* I think that basically said sequestration would appear to be no big deal so far. And it talked primarily about domestic agencies in this article, but nonetheless, raises the question, for all the hoopla and all the hype and all the, you know, sky is falling rhetoric about sequestration last year, from what you've seen so far, is that overblown or maybe not yet effecting things in the Asia Pacific? What are your first impressions?

MR. BUSH: My first impressions are, we need to think about the near term and the long term. We need to think about facts on the ground and on the sea and in the air and facts in peoples' heads. The people I talk to suggest that so far, sequestration really hasn't had much impact on our presence in Asia. And there is probably a lot that could be done to sustain our current presence. You, yourself, in your book, the *Wounded Giant*, have suggested a number of ways how DOD can do more with what it has and do more with less.

Over the long term, though, I think there's growing concern that if sequestration plays itself out, that it's going to bring about a revolution in our Asia

strategy. And the big game changer that could happen is that we are no longer going to be able to think about having a number of carrier battle groups out in various sensitive parts of the world having a presence, being ready to fight if fight is required. And we will be able to surge to emergencies, but we can't play the kind of role we've played since the Second World War or since the Korean War.

Subjectively, the main heads that I'm thinking about are the heads of East Asian leaders. They wonder if it can be sustained, the rebalancing. And our friends and allies and partners in East Asia, they have doubts. China probably has hopes that it won't be sustained and that they will be the beneficiaries of our growing decline.

So the last point I'd make is that rebalancing is more than aircraft carrier battle groups and bases in Japan and Korea and so on. Rebalancing also includes political and economic dimensions. And here I think we have been able to sustain it in real and concrete ways. The Obama Administration responded in a robust way to the problems that North Korea was creating from December last year to May of this year.

President Obama has engaged major leaders of East Asia over the last six months, including the unprecedented and somewhat with China's president in California a few weeks ago. The administration worked very hard to bring Japan into the Transpacific partnership, which is the economic piece. And we keep showing up.

I had my doubts whether Secretary Kerry would take some time off from his work in the Middle East to get to a major meeting in Asia, but, God bless him, he did, and he's there, and he showed up, and for many of our friends in Asia, that's what counts.

MR. O'HANLON: Excellent. Just one follow-up. And I want to, as we go forth, keep trying to tie back to some of the themes that Bruce raised earlier, as well. And this is, again, a hard question to answer because it's impressionistic and we're also in

early days in sequestration. But when you talk to colleagues, leaders, others in the Asia Pacific region and you ask them or they volunteer their opinions on how America is doing, as you say, beyond the immediate issues of the rebalancing, beyond 2,000 marines in Darwin, Australia or a few more attack submarines on Guam, but more generally the direction of this country, I would assume that they see at least a couple of things happening and pulling in different directions. They see the dysfunction in Washington, but they also see the revolutions in American manufacturing, in American energy production, the ongoing strength in our educational and scientific sectors. And what's your net assessment as to whether their impression is shifting for better or worse these last, you know, few months, the last year or two?

Again, it's a hard question to answer, I realize, because I'm asking the most cosmic question and asking you to somehow relate it to the immediate effects of sequestration. But do you sense that there's anything going on in the net assessment? Are we being seen now as less in decline than maybe we were two, three, four years ago or is that perception of America in decline still the stronger impression in the Asia Pacific?

MR. BUSH: Well, it's an interesting question. I would say as a brief answer that our friends in Asia and even our adversaries are impressed with how resilient the American system is for many of the same reasons that Bruce was talking about today. And, you know, I think there's the belief that if we get our act together, we can stay ahead and we can set the terms of engagement for the region, but it's a big if. Our political system has demonstrated a sad incapacity to get its act together, and so that's what people are watching. But in terms of the fundamental strengths of the system, they understand that they're there.

MR. O'HANLON: Thank you. Secretary Ford, thank you very much for being with us. And I'd really just like to begin with a broad question about how do you

see sequestration so far? I know you've been working very hard in looking for economies and efficiencies and you don't consider it totally unwelcome that there's a little bit of downward pressure on the defense budget in some ways, but I'm not sure how you see the overall trend of, you know, what's been going on these last few months and years.

MR. FORD: Well, by nature I'm an operator. I take the policy for what it is and try and operate within the policy. I have to say that the short term effects of sequestration are not very serious. People can continue to do as much training as they need to do to be ready for the immediate mission.

Sequestration will take its big impacts over the long term. As you build up those training deficits, as you have the post camps and stations deteriorate, as you lose some of the key people as they get frustrated, I think that that's when you'll see the effects of sequestration. Any good organization ought to be able to improve its productivity. It ought to do more with less. It ought to improve its outcomes with fewer inputs. That is the hallmark of any good organization, a strong, vibrant organization. And the federal government shouldn't be exempt from that view. But over the long term, sharp cuts can have a real impact.

So over the last six or eight weeks I've been out talking to commanders. I've been talking to joint commanders and to army commanders, four four-stars to two-star, and I've asked them what do they see is the effects of sequestration. And what they've said is, we want certainty and we want flexibility, we want to know what our budget is going to be and we don't want you to tell us how to achieve getting there. And let me give you a couple of examples.

The number of days of furlough for the civilian work force has been influx both by service and in terms of the numbers of days. It's made planning very, very difficult for the military departments. And that's just the beginning. That's the first year of

sequestration. There are nine years to go, each with a significant cut in it.

So what they're looking for is certainty so they can plan and then flexibility. And I've talked to two four star commanders in the last two weeks and they both gave me the same message and I don't think it came from the chief and it was, give us flexibility, give us flexibility in managing the work force. We have the flexibility to manage the military work force, and we have the flexibility to manage the contracting work force, we do not have the flexibility to manage the civilian work force. And the first guy said I've got an 80 year old secretary who sleeps all day, every day. And the second guy said I've got a 70 year old GS-15 and I can't tell what he does. And what they want is the ability, as with the military, to take people who are fully retirement eligible and encourage through RIF's their retirements, because that will allow them to continue to invest in the kinds of things that are the future requirements.

These are people who are not involved in the research for the next threat and that's what we've really got to pay attention to.

MR. O'HANLON: Thank you. And if I could follow up now with one other question. I think a lot of people who look at what's happening to the defense sector, they say it got a little bloated the last 10 years and that was understandable. We were a nation at war. Our first priority was to be able to prosecute those wars as well as we could. Now we've got to find ways to be more efficient. You just explained a couple of broad themes that would help in that endeavor. Could you give a couple of other examples of, I guess the way to put it is, to what extent has DOD already made some of the smart changes, whether it's base closures, whether it's reforms of the civilian work force, some of the things that it needs to do, how far along that path are we, you know? Are we just sort of at the very, very beginning? Are we well down the path? Are we halfway there? Can you give us a couple of examples maybe of things we have done

and things we haven't yet done that would, you know, give people a sense of just how hard DOD is working or is not working to try to make itself more efficient?

MR. FORD: Sure. Let me go to health care, which is the area I know best. I proposed and DOD proposed almost a decade ago increasing the premiums, co-payments, and deductibles for Tricare, particularly for the retirees. As a retired federal employee, I pay about \$8,000 a year for my family coverage. Military retirees and very few people who are in the military actually retire from the military. Military retirees pay \$800 a year or less. So as a matter of equity, I think you can make the case for increasing the co-payments and deductibles.

Another area, joint medical command, the military medical departments each have independent medical commands designed to build the full scale of medical requirements. So they have separate training programs, they have separate command structures. There are 70, there were when I was in Health Affairs, 72 hospitals, I think there are about 60 now. We have about eight hospitals that have enough patients in them to be safe hospitals, so kind of rationalizing the hospital system, downsizing the hospital system. Integrating it better with the VA would be another good idea.

And then finally, the military runs its own health insurance program, Tricare, with three geographically independent monopolies running those programs. The federal government also has two other health insurance programs that it runs. It has the Federal Employee's Health Benefit Program and it has Medicare Advantage, either one of which could do an excellent job with more competition, more variety, more choices for the military members if we were able to give them access to those programs at a much lower cost.

So those are three examples from health care where I think you – and people who are involved in the details of the operations of many other parts of the

Defense Department can give you the same kind of list.

There was a good article in the *Post* last week on the commissaries and exchanges and kind of the logic behind those and the fact that that logic has been overcome by the fact that outside every post now is middle class America. There was a day when the posts were in green fields with nothing around them. That is not the case anymore.

MR. O'HANLON: So thank you. And before I go to Jay, let me tie it together with one broad question. And I realize you may or may not want to give a simple yes/no answer to this. But if we were to get some of the flexibility and make some of the reforms that you're calling for, would the cuts of sequestration be tolerable? Or is there an issue of scale where the magnitude of the cuts, leave aside that they're made in an unthinking and automatic way, but is there a potential problem that the magnitude is simply too great even for all the efficiencies that you're able to identify?

MR. FORD: I think if you carried sequestration through its full expected amounts, yes, that would be too great. I think you could have cuts in the single digits, low single digits every year for a number of years.

MR. O'HANLON: Single digits of billions or a percent?

MR. FORD: A percentage.

MR. O'HANLON: Right. Thank you. Very helpful. And then, Jay, I'd like to really invite you to comment on the same broad set of questions. But I'd also ask, if you could, to give us an industry perspective from Pratt & Whitney, how much is sequestration hurting so far? I know there's a lot of anxiety about what it could do and I certainly welcome your thoughts on that. But I'd also appreciate hearing what you're seeing it do in the here and now. Again, we're only a couple of months in and a lot of the problems will build over time. But could you, please, help inform us about that?

MR. DeFRANK: Sure. So what I'll do is, I'll try my best to tie it to some of Bruce's themes and to sequestration and what's taking place in industry. I think first as a stage setter, it's valuable to consider what's happened in the manufacturing center, particularly the aerospace manufacturing sector in the past quarter century.

If you look back 25 years ago or so, we made 80 percent of the parts that go into our engines and we sourced 20 percent. Today that's turned completely around. We make about 20 percent and we source about 80 percent of the parts that go into our engines.

And we don't just do it locally. So let's take the example of the F135 engine for the F-35 joint strike fighter. We have about 260 or more suppliers located in 26 different states. If you look at Pratt & Whitney overall and for product and non-product suppliers, we have about 3,000 suppliers in 48 states.

Now, when we rely on these suppliers – and first let me say, a lot of these suppliers are small businesses. I think fewer than 14 percent are in Fortune 1,000 companies. So many of them are smaller. But they're geographically dispersed. There's a number of states that you might not think of.

So Pratt & Whitney is located, our headquarters is in Connecticut. We have major manufacturing facilities in East Hartford and in Middletown, Connecticut. But we have suppliers with hundreds of employees in states as far away as Indiana, Texas, California, Oregon, Washington, and a number of others in the supply chain. Now, what does this mean for local metropolitan areas? We don't just put out parts for bid. We have to maintain the quality. We have to maintain the schedule of our parts. You can have every part but one for a jet engine, but if you don't have that one part, you can't ship your engine. And all of the parts have to work, obviously, they're critical, and you have to have the highest quality.

So we work closely with our suppliers. We work with them in terms of leading manufacturing techniques, lean manufacturing, technology, the latest, whether it's additive manufacturing composites, closed cell manufacturing. All of the different leading manufacturing techniques, we partner with them. We send our engineers, we send our operations specialists out into the supply chain.

What this does in metropolitan areas is, it increases the competitiveness both locally and internationally of suppliers located throughout the country. And it does use the term "eco system." I think that's a very good analogy. There's an eco system of the supply network in manufacturing. And these type of manufacturing jobs are some of the best jobs there are, very highly paid, very highly skilled, the kind that metropolitan areas really compete for. In fact, I was at the Paris Air Show just a little over a week ago, and if you went through the hall of the Americas, all of the states were lined up there because they're all out there recruiting aerospace companies to come to their area. So all right, now let's try and connect that to sequestration.

So sequestration is the latest in a number of initiatives effecting the defense spending environment. So as the uncertainty that it introduces in the environment and the delay in some of the programs and the reduction in some of the drivers for our sales, like for spare parts, and I'll get to why in a second, start to kick in, those small businesses who you're working with we've asked to make major investments, investments in capital equipment, investments in hiring employees.

But the volume, we requested it based on volume that we were told would materialize. But as that volume doesn't materialize, they become strapped, they become stressed, they have to delay other capital purchases, hiring decisions, some are actually exiting the sector.

So where are the effects from sequestration coming in? Well, the most

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immediate effects are in things like flying hours. So the air force has cut back somewhere in the vicinity of 40,000 plus flying hours. Thirty squadrons aren't flying. I saw a quote from David Deptula the other day, 30 squadrons aren't flying. They're not flying in places like Nellis. That means the demand for spare parts decreases. And so, again, if you're sourcing these parts, then you're not purchasing at much.

Take the F-35, the manufacturer of the engine for the F-35, we're making approximately 50 engines a year now. But in the ramp that DOD had talked to us about and that we planned against it was twice that number. We don't expect that ramp to come up until 2016. And if that doesn't materialize and if it keeps getting pushed to the right because of sequestration, then it stresses that whole supply chain that much harder and makes it that much more difficult with its consequent impacts in metropolitan areas all over, but also for defense.

Let me just try and connect that to some of the discussion about savings or cut backs, where we can save money in the Department of Defense. You know, obviously I read that letter that you signed, Michael and Mackenzie and a number of other friends from think tanks, talking about smart ways to address spending in the defense budget. But I think there's a couple of dynamics there.

And I've talked to a lot of friends in think tanks. Most people can look at the defense budget and come up with a significant amount that could be saved. I'd say probably conversationally the average that people say is, you can find \$20 billion a year easy looking at the defense budget just in efficiencies. But that's what I would call the rational man's look at the budget. You can look in there and see you need to close infrastructure. You need to tackle things like health care and personnel costs, a lot of the things that were identified in the letter, things, though, that are just politically not valuable. The odds of being able to close bases. You see your local representatives and senators,

I see mine. When they run for election, it's all about how they've saved the base in the area. That's a big thing. And these are some of the strongest supporters of defense that you'll see.

Touching the personnel budget, and, you know, I would say as a retired military officer, I have a vested interest in some of those personnel programs, too, but you can see that you need to address them, but it's politically unviable to do so.

So what does that mean? It means that actually the pool of discretionary spending in defense shrinks to about three areas, shrinks to operations and maintenance where we're seeing the reduction in flying hours and training, it shrinks to procurement and R&D. And those procurement and R&D areas have some of the most significant and long term impacts because as you shrink those, if you start to either cancel or slide major recapitalization programs to the right, the consequences become very significant. And so the last word on sequestration, you know, I was the chairman of the Steering Committee for the Aerospace Industries Association's Second to None Campaign. One of the things that always worried me was, the campaign made it seem like we were going to go off a cliff when sequestration started. In fact, I have to admit, I never really liked those countdown clocks that they sported because it fostered that impression, that when sequestration came in, we were going over the cliff.

The danger of sequestration isn't in year one, which is where we are. The danger is because it's cumulative year over year and the impacts tend to grow, they magnify each year. And it's also, of course, and everybody has commented on that, the mindless method of cutting, the meat cleaver approach, as it's been described, the lack of discretion that's allowed.

But I think it was pretty clear to see the impacts wouldn't be that great the first year partly because a lot of the funds were obligated for this year which delayed

the impact. And then there were some sort term things. I think the *Post* article did a nice job of outlining what some of those were that could be found. Next year those become a lot harder to find and the obligated funds start running out, so then the effects really kick in, and the year after that even more. And then you start – with that shrunken pool of procurement, R&D, and (inaudible) and maintenance, you really start to feel some significant effects that ripple seriously through the supply chain and have major effects overall.

MR. O'HANLON: Thank you, Jay. A very good, comprehensive answer. And you anticipated a couple of my follow-ups. So if you don't mind, I'll move right to MacKenzie and then we'll go to all of you for your questions and may bring Bruce back in if he wishes if there's anything that's been provoked in your thinking as a result of this.

One thing I thought of is, hearing Nelson Ford talk about the need for flexibility within the defense budget, remembering in your book, you say that maybe we can make due with flat or even slightly lower domestic discretionary accounts if there's more flexibility in those was just something that occurred to me.

But before we come back to that, Mackenzie, I've got two questions for you, and I want to ask you second about the broader effects of sequestration, how you think it's going, and how far it can go before you see really serious harm to the country, or maybe you think it's tolerable at this point, I don't know.

But before I do that, because Jay set up a topic very nicely that I know that you're passionate about, and if I could paraphrase, Jay was mentioning how the political system in this country isn't willing to do some of the difficult things by way of reforms and efficiencies. And sometimes people will use the phrase "I know", that they feel we've got a contract with our men and women in uniform, we don't want to cut any of their benefits, we don't want to cut any of their infrastructure because we've got

essentially a moral contract with them.

And this is something that I know at one level you probably agree with in many ways, but you've also got a wonderful response to that. If I could, at the risk of asking a leading question, but I do know your thinking on this, ask you to talk about whether Congress should be protecting every base and every military compensation program and how that affects our broader military preparedness.

MS. EAGLEN: You know me too well, Michael. I think we'll finish each other's sentences soon. You know, internally within the defense budget we have a reduced purchasing power of each defense dollar and it's effecting everything that we've been talking about up here and all of the themes of Bruce's presentation. The inability to do more with less is partly a result of the squeeze internally.

And part of that is sort of all of the things like compensation, like infrastructure, like health care, like the number of people, how you pay them, those are squeezing everything else, and the more fungible items within the defense budget. This has been a trend underway for years not exclusive to this administration by any sense, and that's right. So we've talked a lot. You know, the rebuttal often is, when you and I go to the Hill, or others, it's, you know, well, we have this inherent contract with the men and women in uniform, those who serve, 1 percent, on behalf of the rest of us, and there is no doubt about that.

But we actually have two contracts with America's military and the sons and daughters that agree to raise their right hand, and those two contracts are on a collision course with each other right now as defense budgets decline.

It was less of a problem when they were flat or rising. But now they're in direct competition with each other. Contract one is the most generous compensation system, health care, et cetera, that you can afford, and that's, of course, a debatable

point, everything from education benefits and GI bill to tuition assistance to commissaries to premium health care, et cetera.

And then the other contract is that, you know, because so few serve on behalf of the rest of us, we don't want them entering a fair fight. So when the nation decides to send you into battle, the enemy dies, you live, that's the way we want it, we want to be number one. We don't want to be second to anyone else. Those are the two contracts that are now in direct collision within the defense budget. And they cannot be sustained because now one is coming at the expense of the other. And that's I think the theme in Bruce's presentation that ties into our panel. When I look at applied, basic, and advanced research and development within the defense budget and how it drove the U.S. economy over the last 60 years, the commercial economy, and the spin-offs, and the benefits, and the dual use technologies, and how we basically have seen the federal government, and, of course, DOD is the leader in those efforts, largely exit a lot of those areas. It's a diminution of significant proportion.

That affects the second contract, where you see breakthrough technologies, like precision guided munitions, or drones, or name your favorite weapon system or technology or capability or innovative way of using them, we're increasingly less able to do that.

So not only are we financially squeezing that second contract internally, the defense budget and out there in the real world for the people who have billed and procured the things, goods and services we need, we're squeezing it in terms of innovation, research, and development, certainty, and confidence.

MR. O'HANLON: Thank you. And if I could follow up. Before I ask you sort of the big picture question of what your optimal defense budget would be, if you could imagine sort of going with a little bit of the flow of the country's deficit debate and

trying to, you know, mitigate whatever path you think it's on that's going too far, if I could ask you just to say a bit about a civilian work force reform within the Department of Defense. Because I know like, Nelson, you've been passionate about looking for reforms and recognizing that we do need to tighten belts where we can. He's been very eloquent and articulate on issues like military health care. And I know something that you've written about recently is the sheer size of the civilian work force. And, of course, LMI works on that issue, as well. But could I ask you just to help the crowd understand a little bit about what reforms might be achievable within that space?

MS. EAGLEN: Well, again, I enjoyed this part of Bruce's presentation because – and the points raised to be able – as you get better at something, you can often times shrink and consolidate your work force. They're smarter, faster, cheaper, better, so to speak.

We've seen the exact opposite. So, you know, Lehman Brother's collapse is in 2008. The great recession kicks in and American families and private industry start thinking differently, start shrinking, anticipating uncertainty for the future, and how do we survive and work through this?

The federal government just continued to feed on the trough. And the DOD, of course, the Defense Department, is the largest federal agency. It has been on a rapid growth acceleration since 2008, even with a hiring freeze which I know seems odd, but yet we break the rules all the time. No better place than the civilian work force. So we've seen a 10 percent growth in the defense civilian work force since the recession began, since all of the squeeze and the sequester and everything else have started. So while I'm sympathetic to things like furlough Fridays, of course, I think also that – I understand that there was this unchecked growth in the Department of Defense civilian work force at a time when it should have been a conversation about right sizing, aligning,

various skill sets in DOD with what is required for the future and the outcome. And these are happening in the absence of any discussion and conversation.

So in last year's Defense Authorization Bill, for example, Congress mandated, because don't forget, the President has proposed, you know, the reduction of 100,000 active duty service members, soldiers and marines, while we're growing a civilian work force. So again, one work force is coming at the expense and the importance of another, which I think is completely mis-prioritized, and we're not having that conversation.

So in last year's defense bill, Congress passed a provision saying that the Defense Department going forward needs to equally pair down its military and its uniform civilian work forces. It cannot disproportionately go after the active duty service members. And, of course, again – and then as part of last year's budget, there was this 1 percent proposed reduction in the DOD civilian work force. Well, I'll just go ahead and give you the end story here. It grew by 2 percent, and it was restricted from any growth, and it was supposed to be reduced by 1.

So you can see here the trends and this unchecked inertia, the things that just happen in the absence of any strong hand from a secretary or from a strong armed oversight invoked Congress. These problems are only going to accelerate (inaudible) a glide path here that's just on auto pilot.

MR. O'HANLON: Just for clarity, when you say "civilian work force", do you mean the full-time government employees who work in the Department of Defense or do you also mean the contractor work force you're referring to?

MS. EAGLEN: Only full-time civilian government employees.

MR. O'HANLON: Last question, I know you've been concerned about the trajectory of our defense budget for a long time and you've reminded people that we actually started cutting the defense budget, at least by certain ways of looking at the

problem, under Secretary Gates, and the cuts from the 2011 Budget Control Act were not the first round, and now we're into the second big round with sequestration.

But let me, if I could, try to probe a little on – obviously you're not thrilled about most of these cuts. But where do you really see a fundamental threshold? In other words, at what level of cutbacks do we start to do things that literally keep you up at night, that don't just seem like unwise decisions? Because I know you've probably felt we've been on an unwise decision path for a while, but that really make you worry that we're fundamentally eroding certain core capabilities that we absolutely need.

Or have you decided that we can live with sequestration, that if it's done right at least and the rules are relaxed and the flexibility is increased, that we could actually cut the DOD budget another 500 billion over the next 10 years?

MS. EAGLEN: I'm worried about, again, general trends. And they started long before sequester and they've been perpetuated by both political parties. So I will not pick on this administration or this Congress exclusively. I'm going to pick on everybody.

I'm worried about the general trends. You know, I was just skimming through, again, *Healing the Wounded Giant*, Michael's sequel to the *Wounded Giant*, and your discussion of how our defense drawdown in the '90's was a different time and era and you could do different things and find different solutions to that drawdown. It was in the defense budget, and how this time is different, and I would agree with you.

So, for example, if you look at the last five different draw downs in America, you know, we typically cut the defense budget by about 30 percent. I'm quoting our good friend, Gordon Adams, here, and the procurement of goods and services within the defense budget actually falls by twice that, roughly between 50 and 60 percent.

Unfortunately, this time seems no different. We're already on that trend

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line already with a 10 percent top line cut and almost 20 percent modernization investment decline. But yet we have – this isn't your grandfather's military, right. So we don't have a Reagan build-up to fall back on. We don't have this – we have good talk about the investment and (inaudible) innovation and technology and advanced revolutions. The conversation is there, the words sound right.

But if you follow the dollars, it's actually not there in a sufficient way where we can compare it to other inter war periods where the U.S. was able to succeed when we came out of it, whether that was a relative surprise from an enemy or some other leap ahead technology, that we found an innovative way to use.

In our Defense Industrial Base Working Group, you remember that we were told a couple of years ago by one of the members that for the first time in U.S. military aviation history, we don't have a manned aircraft under design. We already see competitive aircraft capabilities emerging to the joint strike fighter, to the F-22, and I think we'll see that eventually to our bomber force, as well. It's already emerging on the horizon. What do I worry about? Again, we're not having this conversation about the changing nature of what we're doing.

Michael and I were on a panel talking about base closures recently. And Bret Lambert, it was his last day on the job, he's the number two in the DOD acquisition shop, and what he said was, never before in the history of the Defense Department have we needed less defense unique investments and technologies and capabilities from guys like Pratt.

But I don't think that message is actually getting out there and that was the first time I had heard it. So the happy talk is that all is well, everything is fine, don't worry, we've got the seed corps and we can manage everything else.

And when you actually peel back that onion and lift up the veil, open the  
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kimono or whatever you want to say, it's actually all of the other things we're talking about driving the defense decline and that's what worries me the most, not sequestration.

MR. FORD: And we've gone from the point where the time to spin up when we're attacked was measured in years to months to 60 microseconds, so we better be ready. The threats are of a different temporal nature and so we don't have the opportunity to draw down the military and then spend a couple of years spooling up while we're getting ready to react.

MR. O'HANLON: Please get your questions ready. I want to make sure, Bruce, you're invited. Any time you want to speak, just let me know. But also before we do that, anybody else wants a way in with either questions or comments based on each other's initial remarks, and if not, we'll bring in the broader crowd. Okay. Please wait for the microphone. I think I'll do two questions at a time. And then if you want, you can direct your question to one or another panelist if you prefer. Let's start over here, please, and then be ready.

MR. GARVEY: This is a really interesting panel. I'm Patrick Garvey. I've got three perspectives that I share with you all. I worked with Mackenzie on the Hill for a decade on the Luker staff, spent, you know, I'm still in the reserves and spent 10 years on active duty and now I'm in the private sector with a company called Triple Canopy, so we do some contracting. So my central question is, do you think that if we allow the DOD to palm sequestration, it's doable?

MR. O'HANLON: Let's get another question. Here along the aisle. And before we take that, though, I will just translate the DOD -- if you don't mind. Palm essentially means formalizing the planning through the service detail plans. I think that's another way to -- in other words, so far the DOD has not done that. All last year they were told don't plan for sequestration, it's not going to happen, don't worry, and now

we're in a different world and the question is at what point do you start to change your internal approach. Okay, please.

MR. GRINDSTAFF: Hugh Grindstaff. Cyber, how do you see the sequestration effecting cyber? And do you think there needs to be a consolidation with cyber in a way that contracts are going out, but the control of the contracts aren't really there?

MR. O'HANLON: Anybody want to start with either or both of those questions?

MR. DeFRANK: I can talk to the palm one a little bit. I think it makes it more manageable. It makes it better, but it's a lesser of the evils kind of better because if the services can plan and prioritize, they can focus on their greatest requirements. But I still think within some of the constraints that we've discussed, the services would plan to do some of the things that have been identified.

They would try and reduce infrastructure. They would try and address some of the work force related issues that we've talked about here. They often mention it, but they're constrained there. So I think if they were able to plan, they were able to decide where to take the cuts, they could protect their highest priorities, which would be many of the things that we're talking about here that would give them the greatest capability to meet near and future threats. But I think that they would be constrained and so I would say it's a lesser of the evils type of approach.

I don't think that with the full extent of sequestration, talking about between \$40 and \$50 billion a year year over year for 10 years, that it would be a sustainable – it would make sequestration sustainable in the long term.

MR. FORD: As a former owner of a palm, the army palm, we would do anything to only have to do one exercise a year, where the army is currently doing half a

dozen exercises a year which is grinding the budgeters into dust. I would say it would make sense if there weren't a set of pre-conditions that took some of the necessary flexibility off the table.

The personnel budgets are in aggregate 70 percent of the budget. And if what you say is your decisions faces the other 30 percent, as Jay has pointed out, you very quickly get to the point where you're not investing in any research and in any new weapons or any parts for spare weapons for that matter. So I think it's unrealistic in that regard if the rules of doing the palm don't allow you to take into account the personnel costs.

MR. DeFRANK: And I'd like to add to that, because I think there's a very relevant point. When you get to the research and development and the procurement side of things, there are a couple of points that are relevant. That has always been one of our unique advantages is our ability to advance technology and have basically the rest of the world react to that. And it has effects in ways that people aren't conscious of every day.

For example, if you have the technology to penetrate and hold at risk targets that a potential adversary might have, say North Korean or Iranian nuclear facilities, they have to account for that and they have to defend for that.

You know, way back in the dark ages when I was a young officer in professional military education, they used to teach you that defense costs five times as much as offense and so you always knew what part of that equation you wanted to be on. Having your adversaries anticipate what you have and have to defend against, it has an effect on what they're able to do, and it has an effect on overall world stability in things like that beyond any specific platform.

I talked to someone who was addressing the issue of low observables, and you may be familiar, there's a debate going on, are they antiquated or no longer

useful or is the technology out of date, and they were saying that the implications of low observables are so profound that if we lost that capability, we would fail to be a world power. Now, I don't know if that's overreach a little bit, but it demonstrates the significance that some of these technologies have. Now, developing technologies is a long lead time and it's measured in decades now. So if you gap, it takes a while, and you have to depend on others to not be doing anything while you're in the gap, so there's that part.

The other thing I would say is, we've been blessed over the last three or four decades with investments that were made when hard decisions were made hollowing out the force to purchase leading edge fighters and other equipment that have lasted pretty much up till the present time.

In the past, engineering wasn't so specific, and there was a tendency to overbuild, over engineer platforms. Engineering got a lot more specific and the service life of the technology that we have is much better predicted.

So if you take the tactical fighter arena, much of the tactical fighter force is at the end of its service life. It's investments that were made in the '60's and '70's that have carried us through pretty much to the contemporary time. If we had a major crisis, we don't have three or four decades now to reconstitute that. If we stop the investments that we're making or significantly slow them down, we put ourselves at risk and we introduce an uncertainty into the world environment that can manifest itself in ways that we don't necessary anticipate. And I would say that – there have been people who have said, well, look at where the point of conflict is now, it's in, you know, it's asymmetrical, it's fighters like the Taliban, and what do you need advanced tactical aircraft for that, but I think the response to that is, the reason that the level of conflict is there rather than us defending our borders is because fielding leading edge aircraft is expensive, operating

them, training them is expensive. Who's going to do it if you can't prevail against it? And so it's just not a rational decision.

And so by having a force that has been so effective that nobody could effectively fly against it, then you've taken that out of the arena. If you leave a gap there, then you introduce that and you have to ask, do we want to go back to a time when we have an aerospace defense force protecting our borders because we're worried about someone flying in and penetrating U.S. air space or do we want to shift conflict to another regime?

MR. FORD: And that's the answer to the second question, because if we're not investing in cyber, we've got a gap, and the gap will be very difficult to fill.

MR. O'HANLON: Richard or Mackenzie, anything else on that or on cyber? Okay. By the way, just a quick little advertisement for an event last week, but it's still up on our website where it lives forever. We had General Dempsey here. Peter Singer and he did an event together on cyber. And one thing that was interesting to me, Peter I thought a couple of times invited General Dempsey to speak about the budget and cyber, and General Dempsey was not that anxious to talk, at least I didn't hear him give too many specific suggestions for additional requirements. But it was his office and General Dempsey himself who wanted to give the speech. We were honored to have him. He obviously sees this as a huge priority and certainly doesn't want it to be starved for funds.

And there are a lot of big doctrinal decisions that have to be made about how you use cyber, as well, that he obviously wanted to engage on. And, of course, he had a few thoughts on issues like Mr. Snowden and our friends in China, as well, which I will recommend to you if you're inclined to look at that transcript. Harlan, and then we'll go to the back, and then I'll come up to Bruce Katz after that.

MR. ALMOND: I'm Harlan Almond. Thanks for a very interesting panel.

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I wanted to introduce a couple of realities. A number of studies have suggested that well before the end of this decade, we're going to be in a situation because of the huge cost growth in both people and things that, at that stage, we're going to have a choice of either cutting the force by 40 or 50 percent or not buying anything. On top of that, at some stage interest rates are going to go to 5 or 6 or 7 percent or higher, meaning there's going to be a huge squeeze in defense spending. My own guess is that defense spending around \$400 billion, in current dollars, is probably sustainable. Whether that's right or not, tell me how you would really order your priorities if and when the defense budget goes down to a steady state of about \$400 billion a year. What would you see as your biggest issues? What would you see as your smallest ones? What can we keep and what can we do without?

MR. O'HANLON: And just as we're going to the back of the room for the follow-up question, I'll just remind people who don't follow this day in and day out like some of the rest of us, that today we're up in the 600 billion range and we're headed towards a little more than 500 billion under current plans, adding up war costs and the base budget together. Please.

MR. PATEL: Hi. My name is Nihar Patel from Alcoa Defense. Thank you for your talk. I want to tie this back to the broader economy and our discussion we had earlier. There's a lot of murmur in the defense industry about loss of jobs, loss of human capital, and out years for sequestration, right. And how does this resolve with, A, growing FMS, and B, what Bruce talked about, a devolution of decentralization, where you have these metropolitan cities growing in different ways and providing possibly an opportunity to absorb job losses in the defense industry?

MR. O'HANLON: That's great. And it will be a natural way to work over to Bruce, who can maybe comment on that question and anything else he wants to. But

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why don't we start, Richard, any thoughts on any of that? Nelson?

MR. FORD: I think that a \$450 billion steady state defense budget would probably be enough if we're not actively engaged around the world in conflict. I think what people don't recognize is what conflict costs. And in 1781, November of 1781, Congress met to downsize the army. It was six weeks after Yorktown and the Brits were still in control of New York, Charleston, and Savannah. So we have a long history in this country of cutting the defense budget before the shooting stops and we're at it again.

And so we should be aware of that as we're thinking about those young men and women who are in Afghanistan today. There's still a lot of active combat support, if not combat going on. And so steady state as 3 percent of GSP maybe, you could probably get away with that.

What I worry about is an increasing percentage of that is going to retirees. An increasing percentage of that is not going to protecting us today, but protecting those who have protected us in the past. And that's a very small number of the people who serve. It's 25 percent of air force officers, but it's 8 percent of marine enlisted. So just to put it in context for you, those who are most likely to have been in the line of fire are least likely to retire. So I worry that if there isn't the flexibility there to make the right kinds of decisions about investing in the future, investing in the next – responding to the next set of threats, that could very easily be eaten by those who look like me and put at risk my children who are in the line of fire.

MR. O'HANLON: Jay.

MR. DeFRANK: One thing I would say, if you're getting to the dollar amount of the budget, I think the question is, what do we want to do with that money? What are our national policy objectives at the time? Because if you pick a number, say \$400 billion, whether that's enough or not depends on what you're trying to do.

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What you're trying to do now, what you have to do, whether we're involved in operations or not, what we need to invest in the future, what commitments we decide to honor that we've made in the past, I mean it's what do we want to do? Are we pivoting to the Pacific? What does that require? Do we need to? So I think it's hard to toss out an arbitrary number and say is that enough without saying against what.

MR. O'HANLON: Better put. Mackenzie.

MS. EAGLEN: I would agree with the statements and the realities raised. I think that that's the problem. I think that, you know, the defense budget has a reactionary measure to the squeeze within the federal budget from entitlements, the landmark moment when interest on the debt overtakes the defense budget and becomes the smallest federal priority of the big four relatively speaking, just in response to just sort of the auto pilot unchecked. Well, that's what entitlements are doing, they're just growing and they're on course to absorb every single federal dollar. Taking it from tax payers, that's just the way it is because we're not going to do anything. Then you're going to have I think, going back to Patrick's question, you're going to probably get the answers in the outputs, the outcomes that you don't want within the defense budget, so I worry about that.

And when I, again, think about it in terms of Bruce's presentation, I think what we would – I'll combine a Norm Augustine quote with an Arnold Panaro initiative. So, you know, he used to say that the cost of weapons systems, I'm paraphrasing, of course, is so expensive, we'll eventually be able to buy one fighter plane, you know, one tank, one ship with our defense budget.

Well, these days, as I already alluded to, this is not your grandfather's defense budget. And now we're going to be part of one really well paid and well compensated retiree with this defense budget, proverbially speaking, obviously being

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facetious. So I worry about the loss of U.S. military technological supremacy. It's declining already across the domains, across the services, the military departments, and across the board. That is the expense of your outputs that we're talking about here, what's coming. There are trade-offs. This is a zero sum defense budget now and that's exactly what we're giving up. And when I think about that in terms of the future – I put out a paper last year, U.S. Military Technology Supremacy Under Threat, I'm just pulling lots of information, which it was just a fascinating thing to write to see how did it prop up in many ways, our commercial economy, since the end of World War II, and really fueled up in the '40's, '50's, '60's, and '70's, and then has been on a downward trajectory ever since.

But like I said, now we see it exactly flipping in terms of federal investment versus commercial and advanced and implied R&D in particular. And I think of all of the things that Bruce talks about and what sustains us for the future.

You know, airport hubs in Denver, well, we all can fly because the military invested in those air frames. And, you know, that spun out into the commercial sector in the first place. We have our email and our internet because of the U.S. military's investment.

I do my hands free texting now in Virginia so I don't get another ticket and I use Siri on my iPhone, and that's from the U.S. military's investment in Darpa, and they sold it to Apple. You know, when I think of the – and I can keep going, everything from hair spray, to plastic bags, to nylon, to infrared technology and all kinds of things inside of our home that we are lucky enough to have, to GPS. You name it and its contribution to our everyday lives and our commercial economy. Not that that's why we invested in it in the first place. It's to give our troops the edge and to sustain that second contract. But there is that inherent benefit to everyone else as a result of that and we're

giving that up.

MR. JAY DeFRANK: (inaudible) here? Now, to comment a little bit on the direction that Mackenzie was going about the zero sum game and the budget and things that we can't afford, my experience with 30 or more years in the government or working with it is, there's a tendency in government that when you have pain, you shift it to the right when you don't want to let go of something.

And you can see the effects of that in things like in our space program saying now we have to hitch a ride with the Russians because every administration had a plan for human space flight, but they couldn't afford it, so they funded it in the next administration's time frame, who supported the idea, but couldn't afford it and shifted it until we ran out of options. And we're doing that with even current programs now.

I mean if you take the F-35, the joint strike fighter, which we continue to slip to the right, yet we talk about the cost, there's a correlation, although I know that there are some who would deny this between cost and volume. But in our business, we track it very carefully. There's two variables for cost, dollars and volume, and you can manipulate either of those to drive down the cost curve. You can either invest in cost reduction or you'll get your learned out cost with volume.

As you delay that volume, you keep the costs higher, and it takes more of the budget or you end up producing less or the programs end up going into death spirals as you push them to the right. And to bring this back to the communities, when you're in a supply chain situation like we are, you make commitments to your suppliers, there's going to be this much volume, and they invest, and they ramp up, and they buy equipment, and they hire people, and then that doesn't materialize, and then they can't pay for the equipment that they invested in or have to let the people go or don't, and then it has ramifications throughout the entire system.

MR. O'HANLON: I'm just going to add one word of my own answer to Hanlan's question before giving the floor to Bruce. And I'm delighted you asked the question, it's an excellent question, but I'm not going to go along with your premise, and here's why. It's because I think that we can't predict where the number will be. It's going to be a question of which political forces are the most powerful and what our sense is of what we need the military to do, building on some of the earlier points. And quite often when people talk about a budget in the \$400 billion range or less, they naturally go to the U.S. army as the bill payer, partly because with the ongoing importance of the Persian Gulf, the Asia Pacific rebalancing, the rise of China, et cetera, this seems like, in some sense, the most expendable service, and also, of course, we're tired of counterinsurgency. And so for these and other reasons, army forces tend to be the presumed bill payer in many people's minds.

And I agree the army can be cut a bit more than it has been. In fact, in the little book I just did, which is hitching a ride to Bruce's much more significant tome on the table out there, I advocated additional defense budget reductions of roughly \$200 billion relative to last year's plan. In other words, not as deep as sequestration would require, but more than what was proposed last year.

And one of the things that I would personally support is an army in the range of 450,000 active duty troops. That's less than we currently intend. But, you know, instead of just throwing around numbers, to me, what that army has to be able to do, it needs to have the capability to do one big no kidding regional war, and that's less, as you well know, that's less than we've been planning on throughout the entire post Cold War era. But it also needs to be able to do at least two smaller things at the same time over a long period of years as part of a coalition. And anybody who thinks we can just wish away these things, and I know you don't, I know you're a much more thoughtful student

of history than that, but first of all, we are going to be in Afghanistan, more likely than not, with 10,000 plus troops post 2014.

Second, our new Brookings non-resident Senior Fellow, distinguished fellow, John Allen, just got back again from Israel, as the *Washington Post* reported yesterday, looking into ways in which an international presence might help provide security so that Israel would be willing to go along with a two-state solution with the Palestinians. Now, no one is predicting that's going to happen tomorrow, but if you're a force planner, you've got to have the ability to do it.

Third, we still have another possible confrontation looming now with Iran. The President's own policies essentially say as much because he won't allow Iran to have a nuclear weapon. Well, if we strike Iran's nuclear facilities and then Iran retaliates, are we sure that's the end of the game? Or is there going to be a higher level of tension in the Persian Gulf for some years to come? And could that even involve at some point the army being asked to put a battalion or two or three or four in some of the Gulf states because they're concerned about what Iran might do to them and we need to sure up a sense of stability in the region. So you don't have to be Tom Clancy to be able to think through a number of these kinds of scenarios, and I'm just getting warmed up. And so when I put it all together, I think the army can get smaller. But to go to numbers radically less than where we're currently headed I think would be a huge mistake. So I want to push back against 400 billion, but I'm delighted that you gave me a chance.

And now thanks for your patience. Bruce, we'd love to hear your thoughts on bringing all of this together in whatever ways you'd like.

MR. KATZ: So what I heard were a lot of similar themes between the military and the metropolis. And at the highest level, it is not sufficient just to get the federal fiscal house in order. We really need to rethink the form and the function of our

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national government in a pretty disruptive, volatile period.

Some of the themes, I love certainty to plan, flexibility to execute. We would call that you need to invest, but reform. We have a very prescriptive technocratic, bureaucratic national government. And when I go to cities and metros, whether it's housing, whether it's infrastructure, whether it's work force training, what the mayors and the business and the civic leaders want is a partner, a reliable partner with the national government where not every single decision is being hamstrung by over regulation, et cetera. The second thing I heard was also, though, cut to invest. This is the legacy government notion. If you looked at both the spending side and the tax side of our national budget, we are investing substantial amounts in what we would call speculative wasteful consumption.

We have proposals to shift hundreds of billions a year from that kind of orientation to more productive, innovative, and sustainable growth. So those are the hard choices we need to make that were not made in sequestration.

The last piece I'll say, though, is, and this is really what the military and the metropolis share, we both essentially want a stem economy, an economy that is relying upon science, technology, engineering, and math and makes the investments on the public and private side and R&D to get that technological advancement, but then invest in our people so that they have the skills to compete in a stem economy.

The most important report we probably put out in the past six months at the Brookings Metro Program says that the stem economy is much more substantial in the United States than we have been led to believe for a very, very long period of time, and a large portion of the stem economy, military and civilian, can be staffed and supported by people coming out of high school and out of community colleges with the right skills. We call this race to the shop in addition to race to the top, if anyone

remembers shop in this audience. So I think there actually are a lot of similar themes, both about the real end game we want with a successful, prosperous nation, secure nation, but also the ways in which we need to get there with a radically different view of the role of the national government in relationship to its partnership, to its partners, you know, whether it's, you know, companies and others that are, you know, engaged with the military or the cities and metros that, frankly, are powering the country forward.

So a very interesting conversation. I think the experiment worked. I hope people enjoyed the animations. Download the app. Buy the book.

MR. O'HANLON: Thank you. And I'm going to see if anybody here has a 60 second wrap up they'd like to offer, as well, and then we'll let you all go on time to go enjoy this wonderful Washington summer weather. Mackenzie, would you like to start?

MS. EAGLEN: I'll conclude.

MR. O'HANLON: Okay. Richard?

MR. BUSH: I'll pass.

MR. O'HANLON: Okay. Nelson?

MR. FORD: Jay?

MR. O'HANLON: It's to Mackenzie and that's a nice way to end it, as well. So –

MS. EAGLEN: No pressure.

MR. O'HANLON: No pressure.

MS. EAGLEN: Okay. I just will conclude by saying the stem economy focus, I didn't know about that report. I'm encouraged by that report because I am worried. You know, I go back to that no manned aircraft under design in the military, this is unprecedented.

And if I'm an engineering student in aerospace or nuclear physics or something else and I'm thinking, where is the space program, where is the next cutting edge in government program in aerospace and defense and I'm worried it's not there, it's encouraging to know, if we can figure out how to prioritize and advertise that, if we did all the things this panel said, then that would encourage the stem economy and the excitement about wanting to join those initiatives, which would be great. So if we could just run the world, we'll be all set.

MR. O'HANLON: Well, please join me in thanking Bruce and the panelists.

(Applause)

\* \* \* \* \*

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