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THE SMARTEST PLACES ON EARTH:
WHY RUSTBELTS ARE THE EMERGING
HOTSPOTS OF GLOBAL INNOVATION
WITH AUTHORS ANTOINE VAN AGTMAEL AND FRED BAKKER
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P R O C E E D I N G S

MR. MURO: Good morning everyone. Hoping you're well. I'm delighted to welcome you all here in thought, but also those of you out in the "Twittersphere". And I wanted to note this event is being webcast and we will be taking questions later and they can start coming in now. Use the hash tag #SmartestPlaces. So fire up your smart phones as you get a chance.

Anyway, I'm Mark Muro, a senior fellow here at the Metropolitan Policy Program at Brookings. It's my privilege to kick off today's I think very auspicious event. I say our event today is auspicious for several reasons. For one thing it's always auspicious to welcome and help launch a book into the world. Given that this is a red letter day for Antoine van Agtmael and Fred Bakker, whose excellent new book, "The Smartest Places on Earth", is just out. And if I do say so, you should all rush to pick up a copy. I think we have some out beyond the back. So on the way out please do that.

Today is auspicious also because it finds two experienced economic observers focusing not on the standard inside the beltway stuff, not on the usual spin cycles, but on what some of us at Brookings believe are the most fundamental elements of national well being. R&D and STEM work are intensive, advanced industries, ranging from aerospace to advanced materials to renewable energy. Regional technology clusters and local regional technology ecosystems -- critical. That's part of their focus. And then cities and the collaborations that they accelerate. The fact that cities and regions themselves can become incubators of growth. Antoine and Fred have travelled the world for decades, yet have now come back to embrace the local, the granular, and the micro. I find this a welcome corrective to the often disembodied economic debates that we specialize in here in Washington.

And yet none of this gets at what's really the most auspicious aspect of

this morning's session, which is the fact that Antoine and Fred have actual good news to deliver. Imagine that, good news. But I think it's absolutely true, and this is a thoughtful settled brand of good news. It's true, at a moment when many commentators have surveyed the global scene and concluded that America, or at least its industrial tier is done, Antoine and Fred are here to flip the narrative. Where the conventional wisdom sees decline driven by low cost, mass production China, Antoine and Fred see reinvention being driven by specialized rustbelt cities increase focus on high technology. Where others have tracked the collapse of mass production of tires and steel, Antoine and Fred chronicle Akron's reemergence of the center of polymer research and Albany's growing stature in nanotechnology. And where others have seen hopelessness Fred and Antoine have identified a reinvention playbook in which transitioning regions have turned local universities into open innovation hubs, and business-civic alliances have built promising new industrial strategies in regions.

In short, Antoine and Fred have travelled America and Europe and returned with an optimistic view that dozens of faded old places are becoming launch pads for the new. I find that extremely exciting. Clearly this is a welcome counter to the scary declinism that is now dominating the presidential campaigns for example. And indeed this is especially noteworthy I think given that Antoine is a man who, while working at the World Bank in 1981, coined the term "emerging markets" and in a previous book declared the onset of the "emerging market century". At that time he wasn't saying it was the beginning of the American century, it was a different century. Now he's back with a somewhat different view as you'll see.

So with that I'd like to introduce our two esteemed authors who as you can see from the agenda will also participate in a panel discussion that will be moderated by my colleague, Brookings Centennial Scholar, Bruce Katz. Bruce will introduce the

panel after Antoine speaks. But, for now, let me introduce Antoine who will present the book's story and then Fred Bakker, his co-author, who will sit on the pane -- you'll meet him shortly.

Antoine van Agtmael is a Brookings Trustee and a senior advisor a Garten Rothkopf, the public policy advisory firm. Until recently he was the principal founder and CEO of Emerging Markets Management LLC, an investment firm specializing in emerging markets. I should note that he is also a supporter of both the Metro Program and the Office of Centennial Scholars here at Brookings.

For his part, Alfred Bakker, until his recent retirement, was a prominent European journalist specializing in monetary and financial affairs with a prominent outlook dubbed, for short, the financial times of Holland. He lives in the wonderful city of Amsterdam.

But enough, let's hear from Antoine van Agtmael. (Applause)

MR. VAN AGTMAEL: Thank you. Well, thank you, Mark, for that wonderful introduction. I'm glad my wife is here so that she could actually hear this. (Laughter)

Let me start by saying that we could not have written this book without Brookings. Brookings not only helped us prepare the presentation, give us this forum, but for the past couple of years was really influential in our thinking. Brookings, and I'm talking here about Bruce, Amy, Mark, really did the past breaking work on all of this. And it has been very good work and we have been standing on your shoulders in making this possible. So thank you for that very much.

Now when you listen -- and let me take this thing here -- when you listen to some of the political candidates on the left and on the right, don't you get depressed? (Laughter) I mean when you listen it sounds like this country has run out of steam on

innovation, that our best times are behind us, and that all we have is problems. As Mark already said, that's not what we found. Now let me start by saying if you look in the rearview mirror yes, things look bleak. (Inaudible) employment, down 7 million people, although people don't write about the fact that there are 10 million jobs now in high tech industries and 4 million jobs were created during this -- exact 4.4 million jobs -- in that period. And (inaudible) as good as you can see, that line at the end is starting to reverse. And it was not just competition from my emerging markets (laughter), it was also automation, which means that we were doing things much more productively and of course it was the devastating impact of this 2008 crisis that we're coming out of.

But this bad news we found is not the whole story. And this book really started when I went off to Asia and Fred in his travels had a similar experience. I went to Asia, meeting with many -- and I've been doing this for 30 years -- with many entrepreneurs, CEOs. And what do I hear, I hear them complain about American competition. Now I nearly dropped off my chair. I hadn't heard that in 30 years. And why were they complaining? Yeah, sure, labor costs were going up, our shale gas was cheap, but the most important thing was they couldn't keep up with American innovation. And so we, after this trip in which we visited a dozen cities all over northern Europe and particularly the United States -- and there's my daughter -- we came to a very different conclusion. The American -- and by the way northern European economies are not on the decline. No, they are in fact regaining competitiveness. Why -- there's a new paradigm. For the last 25 years we have been trying to compete on the basis of making things as cheap as possible. Losing battle, certainly against China and other emerging markets. We have learned, particularly after the 2008 crisis, that it's much better to compete on making this as smart as possible. And here we're really good. We have great universities; we have this freedom of thinking that promotes thinking out of the box.

That is the basis for all real innovation. We have a great legal system. And so smart innovation is beginning to replace cheap labor as the key competitive edge.

Now this rests on two pillars. The first is what we call sharing brain power. What is that? This is collaboration among university departments, but also among universities that are climbing out of their ivory towers, and small startups and all legacy businesses. And we have seen this all over the country. What does it mean? Well, in the past things were done on a very hierarchical basis, not very efficient. Now we do it -- we learned this by the way from what I call the "whippersnappers" in Silicon Valley and Cambridge, but it's not limited to that. We have learned to do things in a collegial way. It's not longer closed innovation, you know, in your own thing, but open innovation. It's no longer siloed. No, today's problems require multidisciplinary solutions. One of the Trustees of Brookings taught me an important lesson. I went to see Shirley Jackson, the President of Rensselaer Polytechnic Institute, and she said nothing is being invented anymore within academic departments, it's all invented between academic departments. An important lesson. It's no longer top down, it's bottom up. It's no longer alone in your garage, no, it's done collaboratively. And finally, it's no longer done in isolated research centers of corporations or the government. No, it's done in vibrant, urban, innovations districts. That's where young researchers like to work as we have seen. So that's one pillar.

The second pillar is we are creating a whole new branch of the economy. We had this old industrial expertise as the base, but now we have added new production methods, new materials, new discoveries. And on top of that we combine this, we integrate that with the stuff we are really good at, information technology, wireless information technology, and the ability to -- and we didn't have that ability before -- to use big data and analyze these big data to help us. And all of that is connected through a

tiny, tiny little chip, the connector here, and that is the sensor. Now that makes various things possible that never were possible before. The future is all about connecting and connectedness. Take the self-driving car. This will be a revolution in transportation. Wearable devices. This will be incredibly important to the future of healthcare. You will wear them, you can even ingest them. The smart grid, smart farming that Fred can tell you a lot about because Holland is very good at it. All of this is now possible and wasn't possible before. This is the smart economy. This is the combination of the physical and the digital economy.

Now you might think okay, this is nice, but we have lost all these industries. Well, think again. We now have new production methods, we have robots. Here you see Rodney Brooks, for example, of MIT with a second generation robot. We're very good at this. Joe DeSimone from North Carolina, who invented a way to make 3D printing a thousand times plus faster so that it can be used not just in prototypes but in production. Dr. Chiang of MIT, who found a new way to make batteries. All of this will make it possible to bring back industries like socks, shirts, shoes. I talked to Phil Knight and he said we're already making Olympic shoes with robots. So this is one thing.

The other really interesting thing we found is that this innovation that we talked about, this collaborative innovation, is no longer limited to places like Silicon Valley and Cambridge. It has spread all around the country. To be exact to more than 30 brainbelts we call them in the United States, to more than 15 brainbelts in Europe. So let me illustrate that with one example. All of you have heard of Akron, but would you have thought that this was one of the smartest places on earth? Maybe not. Well, what did we find? You had the four old tire companies gone practically overnight. Was the loss of a lot of jobs, a life threatening challenge. And by the way, all of what we see is always based on a life threatening challenge. Then you got the second element that you find

everywhere, a connector. In this case the President of the University, Luis Proenza, who got people together, who got people to collaborate because they had no other choice. And what stayed in Akron, but didn't disappear, was the world class polymer research that has given us things like contact lenses that change color when you have diabetes, tires that can drive under all kinds of road conditions and are needed for these self driving cars. And I can give you hundreds more inventions like that they did there. They now have a thousand little polymer companies that have more people working for them than the four old tire companies. That's what I mean by changes.

And so you have a life threatening situation. Universities, it's always university centric. Each of these places, each of these rustbelts that are becoming brainbelts, have universities with world class research. They're dealing with the problems of our century. They're no longer simple problems, they are complex expensive challenges that require multi disciplinary approaches. There's an openness forced by reality and necessity to share brain power. They have a connector and they have an infrastructure that attracts and retains talent. And, by the way, that infrastructure included affordable housing. That's why people move from let's say Silicon Valley to other places like Pittsburgh or Akron or whatever.

And finally, of course, you need access to capital. These are the key characteristics. Now, we have Albany, New York -- did you know that in Albany, New York, just outside of the nanotechnology complex and under leadership of Elaine Cavaliers, a former Christian militia fighter from Lebanon who became a great physicist, they are at the forefront of semiconductor research. Next door you have Global Foundries that have thousands of employees working in one of the most modern plants in the world. Here you see a machine -- I was in that clean room with the white hat on and that little machine there cost $1 billion. It's the most modern machine to make

semiconductors, in Albany, New York. Not in Hsinchu Park or Korea, in Albany, New York. The Research Triangle -- Bob Geolas -- you'll see him in a minute -- is here. Let me tell you a story on the sidelines of the research park where you had the old Lucky Strike factor. No more cigarettes being made there, now it's an incubator and a very lively place. Portland, Oregon, here you see the old waterfront. Phil Knight gave $500 million and that brought together the university, OHSU, with Intel that was already there. And together they could do things they couldn't do alone. And now you have basically the university brought back to -- from the mountain to the city with tramways and -- to make my Dutch heart warm -- bicycles. (Laughter) So Eindhoven in Holland, from light bulbs to the world's smartest city as it was called, here you see the old Philips, and now you have the technical university that became really an open innovation platform. We'll talk about that later. So 30 places, over 30 places from all over the world, 2/3s of them former rustbelts, and in Europe 15 of them as well. And we describe in detail 10 of those in our book. These rustbelt cities are building on forgotten strength.

Now we couldn't be at Brookings without some policy recommendations, right? (Laughter) So let's go through them. I'll just talk about two, but there are a whole bunch more. The first is this, we have a 21st century economy. I've become convinced we are measuring it with 20th century statistics. We have to stop doing this. We are mismeasuring our productivity. You know, Google Map or Google search is not in the (inaudible) statistics. We have to find a better way to do this. Second point is terribly important. Why is there all this anger in this country? There's a job mismatch. A number of people cannot find jobs after they lose them in this new world. We have to develop programs of training for jobs that are based I think on a really good model, which is the German work study model. It is a great model. We could do it and we can do it and I think we probably will. We have to reward sharing our brain power through the grants

that we give. We have to support and build innovation districts. We have to build political support for more basic research. The United States still does two-thirds of the basic research in the world, but we have to keep doing it otherwise we lose out. And finally, venture capitalist should have the leeway not to make profits the next day, because then they invest in social media. But more leeway to invest for the longer-term.

So, in conclusion, as you can see Fred and I are optimistic. We think that the United States, northern Europe, has a very good future. Innovation is not dead. Competitiveness is not dead. In fact, we are regaining it. Maybe the best way to sum it up is if you look outside it's no longer winter in America (laughter), spring is coming back.

Thank you. (Applause)

MR. MURO: I'm going to welcome up our colleagues, our panelists.

MR. KATZ: So I'm Bruce Katz from Brookings. It is an absolute pleasure to moderate this panel. It is an absolute pleasure in this season of despair to be optimistic about the future of our country and the future of many similarly situated cities in Europe. You know, Fred and Antoine have done all of us I think a great service. I mean this is almost like a (inaudible) book, right. It takes two Dutchman, though Antoine has been here for a while, to come to America and remind us what we have. So very, very helpful.

We have two other people on this panel that I think I'll just give a brief introduction. They are two of the top economic development thinkers and practitioners in the United States. Rebecca Bagley is vice chancellor for Economic Partnerships at the University of Pittsburgh. She took several of us on a tour of UPITT and UPMC last week. If you want to feel optimistic about America go on a tour with Rebecca at UPITT. Prior to that she worked for NorTech in Northeast Ohio. She's worked in Pennsylvania Stage government -- I may have a question about that. And then Bob Geolas is head of the

Research Triangle Park, really the iconic science park in the United States. Prior to that he worked with Clemson in North Carolina State. So these folks are really at the cutting edge.

But I want to start with Fred. So about four years ago Mark and I took a trip to the Netherlands -- this is a tough job, right -- took a trip to the Netherlands and you took us to Eindhoven. I frankly had never heard of Eindhoven before, neither had Mark, and we had a remarkable day where we saw a turnaround story, a city that had -- Philips Electronics at the heart of that city -- had lost tens of thousands of jobs to Asia, but within about 15 years this is a city that is basically voted one of the most innovative cities in the world. What happened?

MR. BAKKER: I shall give the short version; it's a long story. But Eindhoven originally was built around two companies, the one you mentioned, Philips, and DAF, DAF Trucks, that's now a subsidiary of PACCAR, the Portland based company. And they came in big troubles in the mid 1990s. Philips announced that they would ship their manufacturing to low cost countries and that it would have 30,000 job losses. And in the same year DAF Trucks went broke. So that was a horrible scenario for Eindhoven, but not only for Eindhoven but for the Netherlands as well because Philips is a phenomenon in Holland. We are proud of that company. We are critical, but we are proud. Dutchmen are always critical. (Laughter) But they are also proud. And so that was a trauma for that region. But there were people who stood up quietly and they thought of a very ambitious plan (inaudible) to make from that region, Eindhoven, a high tech hot spot on a specific item, that's building high tech machinery. But how do you do it? And Antoine already told you that technology is too complex to do it on your own. So people knew that you had to collaborate.

But sharing brain power, as we call it, you need collegial teams. But

there was a problem at that time because the companies and the university and the City of Eindhoven and its nearby communities were all siloed, closed, vertically, hierarchically organized. And if you want to build those multi disciplinary teams you have to break them open. And in Eindhoven there was not one connector, but there were three connectors early this century. And to start with, one, that was the CEO of Philips, and he took the courageous step to open up the siloed, closed research lab, a lab that was similar to the Bell Labs. And he had much resistance from his own employees and from people around Philips. But he opened it up and he did something more, he invested a lot of money in building an open high tech campus. And he put his own research team on that campus, opened up facilities for startups, laboratories, clean rooms, and invited foreign companies to put part of their research on the campus as well. And what do you see now, 6000 researchers from all over the world working on that campus. That's the first connector.

The second connector was the president of the technical university. And he his colleagues went out to the companies and interviewed them. What are the skills that our students need to get those jobs that you are creating. And so with the information he got from those enterprises he built (inaudible) that were able to break through those silos that were also inside those universities.

And the third step was taken by the mayor of Eindhoven. Because it was not Eindhoven alone anymore, there were 21 other communities where companies like Phi, like NXP, like ASML, like Philips Healthcare, were doing their research and manufacturing. So instead of fighting each other he invited them to -- and came up with a proposal to start a foundation with all those 22 communities. And they decided that the mayor of Eindhoven would be the president of that foundation. And they gave it a brilliant name, Brainport. And that said it all. And that was what happened in a relatively short

period of time.

And there is one other thing that is remarkable for the Eindhoven region, what Antoine and I didn't see in all the other places, that was the change that took place in the supply chain from all those little companies in that region. And that was the initiative of ASML early this century to ask their suppliers -- and ASML is a semiconductor machinery maker that's world leading now after they have beaten companies like Nikon and Cannon -- but they asked their suppliers who were earlier this century still delivering components on strict prescription from ASML, and they asked those companies to put their R&D in those components. So that they changed the supply chain into a value chain. And that is very, very unique.

But let me -- I'm not --

MR. KATZ: You're a journalist. (Laughter)

MR. BAKKER: Let me change -- when Mark and you and I were in Eindhoven, at the end of the day we drove back to the airport, Schiphol Airport, and can you -- because this is a story of a Dutchman about a Dutch situation and that's suspicious, but can you tell me what you remember of that feeling when you left the city and drove with me to the airport?

MR. KATZ: Well, I'll tell you two things. On the way into Eindhoven I thought you were nuts. (Laughter) This is --

MR. BAKKER: You're not the only one that's saying that. (Laughter)

MR. KATZ: This is a city that I -- how many people in the room have heard of Eindhoven? Oh, my god. All right. (Laughter) Well, that's because you've read the book. But on the way into this city Fred's describing to me Amsterdam is the airport, Rotterdam is the seaport, this is the Brainport. And I'm going, right, okay, that's a great brand, but -- by the end of the day I have to say what was the biggest takeaway was we

went to see the mayor, we went to see the head of the business chamber, we went to see the top investor, we went to see the technical institute, we went to see the high tech campus, and everyone was almost completing each other's sentences. And it was almost scary. Have you ever seen Stepford Wives? It was almost like a Stepford Wife kind of moment where everyone was just saying literally the same thing, a unified narrative, a unified vision. Whereas when we go to many parts of the United States you'll go see one of these actors and then they'll tell you oh, when you see so and so half of what they're saying isn't right. So the biggest surprise to me was what you now call sharing brain power, but in almost a frightening way. There was a consistency of focus and vision. And, by the way, the high tech campus in Eindhoven, that we now know from Antoine and Fred's book, in 2014 had 50 percent of the patents in Netherlands. This is a relatively small geography, but the synergy and the open innovation is really working.

So that's what my main takeaway was. By the end of the day you had convinced me.

Antoine, you coined the term "emerging markets". You must be receiving a lot of kind of emails, phone calls from some of your former colleagues, go what happened? Describe the transformation.

MR. VAN AGTMAEL: What I always say is -- I quote Pat Moynihan, who said we're all entitled to our own opinions, we're not entitled to our own facts. So when I look back at the emerging market century I still think that we live in the emerging market century because the center of gravity of the global economy continues to go toward the emerging markets. It's no longer the American, but the emerging consumer that is king. That stayed the same.

I had a third point in my book and that was competitiveness is shifting to emerging markets. That's where I've changed my mind because I think actually

competitiveness, as I told you earlier, is shifting back. Yeah, some people don't like that, but you know facts are the facts. I'm an analyst like you are an analyst and you call it as you see it.

MR. KATZ: Fred, another question in terms of the acceptance of this perspective, both in the Netherlands and in other parts of Europe. I mean, you know, you're an observer of the American political scene, our reality TV show. To what extent do you feel that either local policy makers, national policy makers, broader sort of networks of civic and university and business leaders accept this premise, either in the Netherlands or in some other sister countries?

MR. BAKKER: It depends on the parties you look at. The established parties understand it and they also see the challenges. Our whole social system is siloed as well. And one of the main conclusions for me is that the situation we describe is a bottom up, horizontal development, and all the policies of the past 30-40 years are vertically. And you see in the Eindhoven region that it's not working anymore, so they are in talks with people in our capital city to change that politically. That's one thing, and that's a positive thing. That's a question of strength. But you see that there is the same in Europe as here in the United States, that globalization is felt by certain groups of people who find that a scary development and they feel threatened. And there are politicians who are -- well, put their finger on it -- try to picture a future in which we can go back and close our old borders and become -- we are in a process of uniting in the EU and people think of the old days that we have a sovereign government, we had the guilder and not the euro, that we had the deutschmark and the French franc and not the euro, and people are lost. There is not yet a new identity. And they are looking for that new identity. And a growing group is thinking that turning back to the old days is the solution. And I completely disagree, but --

MR. AGTMAEL: Bruce, I want to add something to that because, you know, I live in Washington and here everybody bashes Washington. And we describe this process as really a process that is bottom up. People are not waiting for Washington anymore, but -- and this is a little known secret --- the environment that makes all of this possible, all of this collaboration possible, was created by Washington. 1980 the Bayh-Dole said you can take research that is funded by the Federal government and universities and researchers can use this and profit from it. Well, they did, and that is what made Silicon Valley possible. Where did Google come from? Originally from a $700,000 National Science Foundation grant. You know, how did we get to the moon? By an earlier form of collaboration. So the government has a part of it.

And then who is the most innovative venture capitalist in the United States? It's DARPA. Why do we have a self driving car? Because DARPA did a competition that allowed Stanford to participate and then quickly Google bought the whole team. So here you see this collaboration, the collaboration is often by buying and stealing and then collaborating. But places like DARPA and In-Q-Tel are actually important. And this Act was of absolutely critical importance.

MR. KATZ: I want to come back to that. I want to bring Rebecca and Bob into this conversation because if you listen to Antoine and Fred and the words they're using, connections, connectors, connectedness, brain sharing, in many respects the institutions you work at now are almost the antithesis of this. I mean Research Triangle Park is like a group of isolated companies out in 7000 acres of pine forest that were sort of carved out --

MR. GEOLAS: Pine trees and possums. (Laughter)

MR. KATZ: And University of Pittsburgh and UPNC and Carnegie Mellon, I mean there's an old sort of academic tradition that Antoine really described as

breaking down of the disciplines, staying within the disciplines. So is this shift to open innovation and collaboration, is this happening in your institutions and how is manifesting itself?

Maybe start with Rebecca.

MS. BAGLEY: So, yes, is the short answer. It is happening. I mean I think it's interesting because the connected networks that we've been talking about, they really have been back in the industrial time of Pittsburgh, you know when steel was large. It was just that top down, you know, that you talked about. So there were 15 guys or 25 guys who got in a room and decided what the critical things for the community were. They were in competition, but when it came to Pittsburgh it was very important for them to collaborate and sort of lay that out. I mean I think one of the big changes is the complexity of the economies, which is a good thing, you know, has created the need to really look at connectedness and look at opportunities very, very differently. One of the things that Pittsburgh did with the crash of steel and when the economy basically overnight fell apart was they really had the foresight to bring together the university leadership, the government, the industry, all together instead of just looking to industry or looking to one sector basically to solve it. And that was through the Allegheny Conference at the time.

And so they really reinvented the economy through that time. Now I think we're in an accelerated rate of transformation in Pittsburgh. And actually it's a moment in time where our connectors, our sort of networks are shifting very dramatically, really over the last year and a half, where we're seeing an influx of young people, we're seeing Google has the most people outside of Silicon Valley located in Pittsburgh, Uber moved their autonomous vehicle work there. So I mean there just was an explosion of companies moving in, of neighborhoods pushing out. So places you could not go into 10

years ago, you know, are the dynamic technology hubs. And so I think that's where, you know, Antoine, with your slide about, you know, what it used to be like and what it is, I think we had broken down some of those barriers. I really think we're in this accelerated, again, transformation stage of those networks being different. I really think the universities have a critical role in that. I mean there's $1.2 billion in research between Carnegie Mellon and Pitt going on in Pittsburgh. We can't keep that inside the institution. It really needs to benefit not only Pittsburgh, but I think the other evolution we're going through is we're globally connected. I mean we have global influence, we have global connections, and we really need to go take advantage of that for our region, but also to be able to share that knowledge with the globe.

MR. KATZ: How about from your perspective?

MR. GEOLAS: Well, I mean like Rebecca said about her region, it was a very deliberate decision in North Carolina in the 1950s, a very deliberate public policy decision to develop a research triangle park. And it was described at the time as very audacious because not only were we 49th out of the 50 states, but we didn't have any comparisons; Stanford Research Park was only a couple of years old when we opened RTP. But there was a deliberate and conscious sort of agreement that was structured where the government would fund infrastructure and education, the private sector would lead the foundation. We've always operated as a private not for profit with a public mission to serve education, create meaningful work, and lift up the people of North Carolina. That's our job. And then there were the universities who were basically instructed to, you know, educate a workforce. And what we're seeing today, and I think this is where the creative energy -- and I think it really is more energetic than anything else -- it is a shifting away from that top down or more directed approach to one that is wildly more organic. And it is hard for people to sort of let go of that in some ways. And I

think we're beginning to see that in RTP itself. We're taking a 7000 acre site -- I like to remind people that's about half the size of the Island of Manhattan -- we don't have a Starbucks anywhere at RTP, it was never -- you know, think about that, we may be the only 7000 acre site in the world (laughter) -- but we were not designed to be that way. And so there's sort of this interesting idea of well, do you -- you know, how much do we master plan it and site plan it and how structured can it become. In many ways the most exciting things we're doing is opening it up for wild interpretation and letting the actors create their own play. And that is becoming very exciting. It's very innovative in terms of changing the old model. It's very disruptive, but it's also creating the great opportunity for amazing convergence. And in a part like RTP that isn't only a bio park -- I mean we're not a bio park or an ag life park or a -- we've got all those technologies. I mean 60 percent of the companies in RTP have 20 employees or less. So people only think of the big -- so you have this great big pot of things going on and now when you start connecting them the convergence opportunities are huge.

So it really is about letting go of that older structure and letting it be much more organic.

MR. KATZ: So just let's follow up on that part. And, you know, Antoine or Fred should come in because it seems like as we move toward this open innovation space which requires collaboration, which requires people to really engage seamlessly with each other, we're sort of reinforcing and validating cities in a way. I mean proximity, density, vibrancy, authenticity. You know, when I was in Pittsburgh last week I could see the whole part of the Oakland neighborhood and beyond really beginning to change from like fortress UPITT to fortress Carnegie Mellon to fortress UPMC to something that really looks like a city. You've got a much bigger challenge out, you know, in the Park?

MR. GEOLAS: Yeah.

MR. KATZ: So how do you think about place making as it reinforces innovation?

MR. GEOLAS: Yeah, we're sort of the hole in the donut because we've got a great city in Raleigh, we've got a great city of Durham, we've got sort of a village of Chapel Hill, but we've got this dynamic growing --

MR. KATZ: We're going to get a Tweet from Chapel Hill.

MR. GEOLAS: I know. (Laughter) I love Chapel Hill, I love Chapel Hill. They're proud of their village in Chapel Hill, but we are this hole in the donut. And so we have this dynamic growing region, you know, all around us. So I was just at MIT last week about the future of suburbia and the whole conversation is we love what's happening in our cities. Remember the cities were dead 30-40 years ago. The reason why RTP was successful in the 1950s and '60s was everybody was leaving the cities; they didn't want to be a part of that. But we can't let the cities die. I mean the suburbs now have to be reinvented. We have to rethink the way they work.

And so I think there are three things that are going on. I think one, yes, urbanity matters in that it creates physical places that are highly collaborative and fun and engaging and a lot of social activity. But, you know, if you look at Silicon Valley outside of San Francisco you have a lot of suburbs, but there you have a tremendous amount of culture around risk taking, wild risk taking. It's okay to fail and start over. One of my favorite places I visited in the last few years was the Imagineering Studios of Walt Disney which are still in the same studios he picked out in 1956. They're highly innovative in terms of the products they deliver, but what drives them is not urbanity, it's brand. The people who work for Disney would have worked for Disney Corporation, it wouldn't have mattered where it was. So you really have to think about in your own space what is it that you can embrace, is it your brand, is it your urbanity, is it your culture. So whether it's

suburban or urban ultimately you have to embrace what's true and authentic and genuine to you and really celebrate that. And I think the place making is so important, but it's not important devoid of the people. Respond to what the people want, give them a chance to shape it and own it, and you will be amazed what will happen. And that's something we can do in America and in western Europe. That's not as easy in a lot of other cultures in the world. And that's where I think our great optimism lies, in our future, in our economy. That sense of freedom and the sense of exploration, and that dynamic nature that is, you know, part capitalism and just part democracy, I think are things that can't be duplicated in some places of the world that have strong economies, but aren't necessarily the most innovative places.

MR. VAN AGTMAEL: And, Bruce, we have done it before. What was Bell Lab? Bell Lab was this fantastic, you know, meshing and really friction of brain power. And, you know, how did we get the jet engine, how did we get to the moon? It's always through this collaboration. We sometimes forgot about collaboration. And I think if we make that a focus as you are very much doing now, I think it will make a real change. Not will, it is making a real change.

MR. GEOLAS: Yeah, it is.

MS. BAGLEY: I think one of the things too that came up last week actually in Pittsburgh was relationship and transactions, and this was kind of -- we were thinking about the -- you know, there's those relationships that you get through the synergy and through the work and a lot of things are built on relationships, but there are also a lot of things you can do transactionally now where the human -- you know, I mean a silly example that somebody gave at the meeting was, you know, if I needed a prescription quick I used to call the doctor friend that I know, now I go on myUPMC and actually email any doctor and they'll write me the prescription, assuming it's within my

medical plan. So, you know, I just thought it was, you know -- he didn't have to use that relationship anymore.

So I also think that an overlay of all this is not necessarily top down, but what are the systems that you're putting over this to enable not only the regional or the place making, but the global connectivity. And so I think we need to not only think about these collaborative bump into spaces, but then how do you create the systems for that to scale.

MR. KATZ: That's a great point. By the way, if you all visit UPMC it's not for the faint of heart. I saw a mouse having open heart surgery. I'm still recovering. (Laughter)

I was going to ask a question because, you know, Bob brought it up. I'll just make a statement because if you go back to your state government, basically being the vanguard of creating one of the most innovative spaces in the world today, and then you look at your state government today which seems to be --

MR. GEOLAS: Thanks for bringing that up. (Laughter)

MR. KATZ: So I think we all know what's happening in North Carolina. If not, just look at The New York Times this morning. Perhaps we don't need to dwell on that.

I would like one last question before opening it up the audience. Does all this innovation and collaboration and openness work for a broader segment of our citizenry from employment and jobs, particularly in the core cities? Because if you go to most of these innovation hubs in the United States and you walk five blocks you're in an area of high poverty, high deprivation. So are those connections being made, do we have the right tools, do we have the right systems? How do we think about that?

MR. GEOLAS: Well, I was just going to say I think there's a whole series

of exciting policy opportunities around that because I think that in fact the hardest thing for universities and for cities and traditional people doing economic development is how do you measure that because it's so organic and so dynamic. And most of these institutions only get rewarded based upon a more specific set of data points. So one of the things I think institutions like universities need and others is how do you begin to evaluate whether or not you're seeing success out of that. That's a sort of a whole set of policy questions I think.

I think we've also looked at economic development in the past as really sort of event oriented. And we've structured our governors and others to sort of celebrate the singular event, you know, the 400 new jobs, the 500 new jobs. The truth is the whole economy we live in is far more dynamic than that today. We're going to see companies grow and lose employment, and it doesn't necessarily say anything about the place you live. And economic development is less about specific events, it's much more about a longer-term process. And so how you react to those new pieces and the policies that you need, both in cities and in universities and in government, to really take advantage of that process oriented approach.

MR. VAN AGTMAEL: Bruce, clearly the answer to your question is not yet.

MR. KATZ: Right, right.

MS. BAGLEY: That's right.

MR. VAN AGTMAEL: Clearly a lot of people feel left behind. And they have good reason to feel left behind because there is this -- we are no longer in an era of job losses. That's the past, that's the rearview mirror. Because just as we lost 7 million jobs, we created 4.4 million jobs. There are 10 million jobs now in this high tech sector. Brookings research has shown these are not just jobs for Ph.D.s and college graduates,

although, by the way, that employment has grown. No, half of those jobs -- if I remember the numbers -- I think, Mark, you did that research -- are for people with post secondary skills. The problem is those who have less than post secondary sills. I mean we need to activate -- and in Durham you're doing that, for example -- the community colleges to go back to what they were founded for, not to get you into college. If you can fine, but to work together with corporations, to work together with the government, and finally there is going to be -- you know, for those left behind in the end this is not an economic issue. In the end this requires a political solution. Do we as a country have the guts and the sense of solidarity to do that? And that is at the moment very much an open question.

MS. BAGLEY: I would just add that, you know, I think in economic development we really embraced rising tide, you know, lifts all boats for many, many years. And I think over the last year or so too there's been a real recognition and I think it's still evolving and changing. That's actually not working. I mean it certainly lifted some boats, but it did not lift all boats.

So dedicated strategies into disconnected communities where you can connect to the new economy. In a lot of the work that I've done we're leveraging the work that already have -- so at the University of Pittsburgh, I'll use the current example, you know we have a social work program, we have pharmacy programs, dental programs. They are all working in these communities. Connecting that, leveraging it, and bringing opportunities for next economy where appropriate, I think that's an incredible way as a university that we can tie that in.

So I think working with the people that are already working in those neighborhoods and figuring out how workforce development -- you know, what are the needs, educating parents, so that they're counseling their children in a way that leads towards opportunities in this next economy. So I think those are some of the things that

we've been working on, but I think there is definitely recognition that rising tide does not necessarily lift all boats and that you need dedicated strategies to move that.

MR. BAKKER: To add something to remarks of Antoine about solidarity and the way it is organized. I think that's a big difference between the United States and Europe. That in Europe in this point local communities, companies have set up programs, work study programs, and that's more part of our culture and our structure. And that doesn't mean that people are not feeling left out. That's the same in Europe as well. So we have to put a lot of effort in it because that is a very important middle class group that is needed and that must not be left to its own.

MR. KATZ: It just strikes me building on -- and also what Antoine said is as we look at these innovation hubs in the United States and Europe, increasingly Latin America, Asia, they're not just platforms for economic technological product innovation or process innovation. What we see happening in many of these places is really social innovation.

MR. GEOLAS: Absolutely.

MR. KATZ: I mean the community colleges are co-locating, fab labs are opening, pre-K opportunities for people in the community are being -- I mean it's much more substantial social efforts going on than I think is well understood. And we're at the sort of early end of that.

I think we're going to open it up. We're going to start over here. Just state your name and then provide a question not a statement. And then there are some folks on "Twittersphere" who may want to send some of their thoughts as well.

Start over here. Starting in the middle there. Yeah.

MR. RYBECK: Thank you. Rick Rybeck. And thank you very much, learned a lot. It's a great panel. Question, as I understand it the collapse of our

manufacturing industry and urban flight from our cities really caused land values to collapse. And in part this created an opportunity for startups that are risk averse and don't have cash. You know, a lot of cheap rent was probably pretty key to all this happening.

To what extent, now that the innovation economy is taking off, to what extent is there the danger that land speculators will move in, jack up rents, and sort of kill the goose that lays the golden egg?

MS. BAGLEY: That's an interesting challenge. I mean we have rising housing costs in Pittsburgh and I do think it's -- somebody said earlier I think that affordable housing is going to be a key element to making sure that it is sustainable. We still have a lot of opportunity to work into certain neighborhoods housing situations that I think could be both very affordable and could help with some of the blight that's going on in the neighborhoods. So we still have -- I mean it's -- a lot of the neighborhoods have been developed, but there are still a lot more development that needs to be happening. So that's of course a very high class problem to have, you know, for a city that's been in decline. And I think we're not quite, at least in Pittsburgh, at the point where we're going to have that problem really, really soon, although we are seeing in the most coveted neighborhoods very high, you know -- the prices going up.

MR. GEOLAS: So I think it's one of the most exciting things in fact that the suburbs have to offer is that. So if you look at RTP, the foundation purchased 100 acres about 2 years ago and on that was about half a million square feet of old 1980s buildings. The first thought was let's tear them all down. But my wife and I, and give the credit to my wife because she's always got the best ideas, she said why don't you take one of them -- because one of the criticisms about the Park is you're not able to get young people back in -- why don't you open up the space and let's see what happens.

So we opened the space, we called it the frontier. We beckoned all the new pioneers back, all the dreamers, the believers, the creators. We made the whole first floor of the space completely open. Now there's nothing precious about it. I mean I will say to people in the real estate business, the day of marble, ferns, and fountains is done. (Laughter) Keep it flexible, keep it affordable. So we opened it up and we did some fun things in the lobby and that kind of stuff. The space is completely full. We've had over 30,000 people use it over the last year. It's completely open to anybody who comes in the door. You don't have membership or anything.

So what happens is we have teachers mixing with artists meeting with startups. We've got the bunker, which is the vet entrepreneurs group located in there. We've created a shared newsroom cooperative for journalists and bloggers and freelancers. And it has become one of the hottest co-working spaces. So it doesn't take anything away from our urban, but let's be honest, we've got all these buildings in the suburbs, we can't tear them all down. We have to think of recycling them. Now, the question is how do we do that but also connect to all the things that everybody wants in terms of services because most of these are located in islands, but I think it's a fascinating challenge. And I think it's an opportunity where our suburbs can play a role.

MR. KATZ: That's a great --

MS. BAGLEY: I also think transportation comes into the mix.

MR. KATZ: Transportation, always transportation.

MR. VAN AGTMAEL: Yeah, I must say, coming from a very small country like Holland I'm always impressed by how vast the spaces are. You have a long way to go, first of all.

And then as a businessman I learned first you fix what needs to be fixed, then worry about what can go wrong 10 years from now. But it isn't working.

MR. GEOLAS: But, you know, University City and Philly -- Philly is 138 square miles, University City is 1 square mile. You know, midtown Detroit and downtown Detroit, 7 square miles. The city is 138 square miles. We have so much to do because people and jobs just flew out of these cities.

MR. KATZ: So the day of marble, ferns, and fountains are done. No more Trump Towers. (Laughter) Okay, that was a non partisan (laughter) -- over here.

MS. STERN: Thank you very much. I'm Paula Stern. And congratulations to the authors. The gig economy, didn't hear it once. And I think about the job mismatch which you talked about. How do we fill in the blanks besides affordable housing for those who are in the gig economy and move around? And also would love it if you would address places like Portland, Maine that doesn't have a large university. And --

SPEAKER: Great food though.

MS. STERN: Exactly, and very attractive from all the other demographics that you've described here today, and doing a lot of the same things. They better hurry up, unless you have some other answer and that's what I'm asking.

MR. KATZ: Antoine, the gig.

MR. VAN AGTMAEL: Well, on Portland first of all, Phil Knight gave first $100 and then $500 million --

MS. STERN: Oregon.

MR. VAN AGTMAEL: Portland, Oregon, yeah.

MS. STERN: But I asked about Maine.

MR. VAN AGTMAEL: Oh. I don't know enough about Portland, Maine. You know, you're not going to turn every little town into a brainbelt, you know. So there's lots of work to be done in lots of different places. But to know that we have gone from

basically two spots where things were happening to already 30 spots where things are happening, that's already a very big change. And so this will grow. If you see (inaudible) talking about Batesville, Mississippi because the Mississippi State University has such great research on also new materials. Then you see that this will spread and spread. That's what I hope and believe.

MR. GEOLAS: Yeah, I agree. Look, in North Carolina we have a rural economy that's struggling tremendously. There is no way that the success of the Research Triangle region in Charlotte can carry the whole state. So when we meet and talk with a lot of these communities, one of the things we talk about is, one, leveraging your community colleges. They're tremendous. Number two, our public university system has an obligation to serve the state. Connect to them. It doesn't have to be physical, you have the virtual world. You can connect -- the universities would love to do more connections. Take advantage of that. Number three, they come to see me and they say we want to create an RTP and I say no, you don't, that's 50 years old. What you really have to do is go back to leveraging your own assets. What is it that's wonderful about your community? Sadly I would say too many of our communities over the last 20 years have fallen to the Wal-Mart and suburb sort of approach where they're starting to look like every place else. What they almost have to do is kind of take a look back, what defined the character of your location and embrace that. Not every entrepreneur in the world wants to live downtown. Some would love to live in small towns that have bicycles and great places to eat and are connected to the world. And I think Brookings and other policy places can help provide tools to small communities, a set of things to strive for, what are the measures they could reach for. Many of them need those kinds of metrics and tools and resources. But we're not going to get to everybody, but we can make a difference for some.

MS. BAGLEY: This does have a college in it, but one of the examples of that leveraging, you know, kind of the small town assets, I moved from Oberlin, Ohio to Pittsburgh a year ago and Oberlin actually has done a really interesting job. You know, they don't have a research institution, of course, they have a strong university, but of really leveraging their reputation of sustainability of sort of liberal town, into entrepreneurial co-working spaces, sustainable focus. And so that may be a model to look at as you are passionate about Portland, Maine.

MR. KATZ: I mean I think Portland, Maine is one of the great creative entrepreneurial communities in the United States. It has a minor problem; it does not have a state government, literally. There is no state government in the State of Maine.

Question over here.

MR. GERSTMAN: So hi, I'm Ari Gerstman. It's a great panel. When I think about the geographic features of archetypal rustbelt cities in America, they're inland; they have sufficiently high elevation, access to fresh water. To what extent do you think rustbelt cities can leverage their resilience to climate change to compete now and in the future with the coast and the sunbelt?

MS. BAGLEY: So I think it's a huge opportunity harkening to my Cleveland experience. We started the Cleveland Water Alliance, you know, to really leverage some of the assets there. There's a pact for the Great Lake States with the governors in climate change and climate issues and really aligning. I mean it's definitely a challenging issue because there's still a huge manufacturing region, there's still a lot of the old industry. You really need to figure out how to bring policy together that can both embrace that because that's the bread and butter still of a lot of those regions, while you can take advantage, as you're saying, of these assets like fresh water and other assets that we have that I do think are going to be -- and the other thing is -- and we talked

about this a lot when we lived near Cleveland, I think that these cities are cool. I mean they just have that -- the hipsters started sort of that movement in of that industrial look and feel and then the renovated spaces. Like some of these newer towns just can never capture that. So just as quick side note.

MR. GEOLAS: In the RTP we're obviously not -- we're nowhere near the ocean and we've got some lakes, but we don't have a port there. But if you look at the Park, one of the things our hipster community is very interested in is organic food and natural growth. And I think as a part of -- as we look at climate change how do we take better advantage of the land that we have and use that efficiently. So within our 7000 acre research park we're asking ourselves, all that green grass we've been mowing, can we turn those into garden spaces, can we make that part of the living experience, can the food that goes into our restaurants come out of the Park.

So there's a whole series of things, but this gets back to as well a lot of regulatory issues that don't necessarily give communities the ability to be that flexible. And I think that's where we can do some work as well locally to make it possible for us to be more creative and imaginative within our urban and suburban spaces.

MR. VAN AGTMAEL: So, Rebecca, we should have called the subtitle of the book not "From Rustbelts to the Hot Spots of Innovation" but to "Cool Spots of Innovation".

MS. BAGLEY: Yeah.

MR. VAN AGTMAEL: Missed opportunity.

MR. KATZ: I've got some Twitter questions here.

SPEAKER: This is a question from Laura Putre who is a staff writer at Industry Week. Will the new jobs in these cities approach the number of jobs lost to off shoring and automation?

MR. KATZ: You want to take that?

MR. VAN AGTMAEL: I think again Brookings has done more research on this, but will it -- yes. Has it -- no. I mean this takes time. I mean we did a lot of outsourcing, we did a lot of damage, and to repair damage you don't do overnight. But as I said, you know, we have an economy now that is 10 million of high tech jobs in advanced industries, et cetera. And that's a lot of jobs. When we went around -- I mean there are lots of anecdotal examples. In Portland, Oregon, for example, we go to a place that was one of these renovated places. Used to be a factory that made ropes for the boats, and there were about 350 people working there. Gone, you know, empty. You know, drug use in the lobby. Now it's a spiffy new building, incubative. There's lots of lawyers, small companies, everybody sharing brain power, and there are now 400 people working in that building. That's the kind of thing that you will see, but it takes times.

MR. KATZ: Just to build on that question, you know, let's talk about the elephant in the room -- China. I mean is this changing our relationship with China? Rebecca, you talked to me last night about this very interesting partnership that UPITT has with Tsinghua and how that's beginning to really evolve. So are we now talking about a new collaborative relationship with Chinese companies and Chinese industries?

MS. BAGLEY: I think we're going to have an incredibly cooperative relationship. You know, again we have a deep history. The University of Pittsburgh in 2011 helped Tsinghua University, which is largely thought of as the MIT of China, actually start their medical school. So we have at any one time 20 to 40 Tsinghua medical students on our campus working in our research labs and our researchers. And so that depth of relationship created the opportunity to now have a technology commercialization and transfer discussion. So we signed an MOU just a few months ago with Tsinghua and with TusPark, which is their related venture park, and with our tech transfer office to be

able to really connect opportunities that need -- because remember a lot of our work is in life sciences, so we need deployment markets in China -- talk about where the consumers are -- and the regulatory environment is slightly different. And then also though there are Chinese companies, entrepreneurs, that are entering the U.S. market. So there's a lot of synergy between the two and we're talking about really leveraging that relationship even more to really create this global bio health connection.

So I think that those relationships that you can look for that can be creative, that can have your connector role, but thought about it not just in your community, but across the globe can really help us leverage both.

MR. VAN AGTMAEL: Bruce, just as we said in the book, don't count out the old economies. We're not saying in the book don't count out China. I mean this is a really important country for the future, and will remain a really important country for the future.

And what I found interesting was that when we had the book ready it went to the Frankfurt Book Fair and the publisher called me very excitedly and said, you know, I've never seen this, on the first day the book was bought for translation. I said by whom? I hoped it would be the Dutch. No, the Chinese. They got it, they got it. They have been the manufacturing center of the world. Now they're just a manufacturing center of the world. They get this, that -- I mean they know deep down in their heart that they are very, very good. I mean excellent, much better than we are at thinking inside the box. They now see that there's a threat from thinking outside the box. And they have a bit of a glass ceiling here. So there are things -- and believe me, I've seen this transformation in China. They'll catch on fast.

MR. KATZ: Last question. There was -- right over here. Sorry, "Twittersphere".

MR. HURWITZ: Thank you very much for a great presentation. I'm Elliot Hurwitz, a former World Bank and intelligence community and State Department person. You did I think mention driverless cars. In the current issue of The Economist magazine there's an article on China's progress in pioneering driverless cars. And China is also very good in biotechnology. So what does this kind of competition offer to rustbelt centers?

MR. VAN AGTMAEL: The sense of competition shifts all the time. Now, I read that article and, sure, they're beginning to develop that expertise, but Google has been at it for the last, what is it, 10 years or so. So 10 years it gives you a certain head start. So when it comes to really smart products I think the United States, and to some extent various European places, have an enormous head start because of this sharing of brain power.

What we sometimes forget is that political revolutions are noisy and bloody. Economic revolutions kind of creep up on you. And this is what's happening now. What we're seeing is an economic revolution. We just don't get it yet. Just think of how you've learned to live with your smart phone. You know, how you now know go to the library to look something up in a book. No, you do it right in your pocket. This just happened and you haven't even noticed it. It's a revolution.

MR. GEOLAS: I will tell you, working in the Research Triangle Park you have people say to you all the time, well what do you think about what they're doing in China, or what do you think about what they're doing in Boston, or what do you think about what they're doing in Boston, or what do you think about what they're doing in Silicon Valley.

MS. BAGLEY: And we get what do think about they're doing in the Research Triangle.

MR. GEOLAS: Yeah, what about RTP. Look, Teddy Roosevelt said it best, comparison is the thief of joy. (Laughter) You can sit around and obsess about that -- just get on with it, just get on with doing stuff, make a difference, work with people, make things happen. You know, I'm a great optimist and a great, you know -- and I just believe that have faith in your people and your effort, make your investments, and just get on with it and things will happen.

MR. KATZ: I want to end on an affirmative note and I want to bring Rebecca into this because Rebecca was part of this network of SSTI, which stands for?

MS. BAGLEY: State Science and Technology Institute.

MR. KATZ: Brilliant. And they came up with this fictional federal policy, or federal program, or set of federal initiatives that probably everyone in this room would support and build directly out of this book. And then they polled this fictional program. And what were the poll numbers? They were like --

MS. BAGLEY: Incredible.

MR. KATZ: Off the charts.

MS. BAGLEY: It was called -- ISTEP was the name of the program, Innovation, Science, Technology for Economic Prosperity. And so it was basically university research, the commercial engine that could get those things out and then the intermediary organizations, these connectors that we've been talking about. And we polled a lot of different elements of that. In battleground states it was 92 percent approval rating, 87 percent across the whole. And then the interesting this is we said would you pay for it. And the most avant- garde one we tried was gasoline tax. So people would pay -- 54 percent in battleground states said they would pay a gasoline tax to be able to fund increased research and development, increased commercialization portals. And so it's a really interesting -- it was done by both democratic and republican

polling agencies and, you know, the whole polling methodology. So I think it's an incredible opportunity to be able to leverage the SSTI. And we have an innovation advocacy council now that we've formed with that polling date into all of these conversations.

And I'll also end too with the book. I mean I think we've been talking about these types of things for a long time and I think the book gives a lot of credibility in the way that Fred and Antoine wrote it to be able to bring back to our city governments, to our city leaders, and really be able to talk about what needs to happen as we accelerate this transformation.

MR. KATZ: The era of cheap is over, the era of smart has begun. Thank you, Antoine and Fred, thank you to the panel. (Applause)

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

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