

Federal Reserve Bank of Chicago
Summit on Regional Competitiveness
December 19, 2014

Welcome/Opening Remarks

JEREMIAH P. BOYLE: Good morning everyone, my name is Jerry Boyle. I'm the Managing Director of Economic Development for the Federal Reserve Bank of Chicago. I'm glad to welcome those of you who were here this time last year back for the Second Summit on Regional Competitiveness. For those of you who weren't here last year, welcome. And, for those of you who are watching from your desk through the live streaming, welcome to you as well. We have approximately two hundred and twenty people registered total both here and online. So, there is clearly a great interest in what we're going to be doing today.

Before we get started, I just wanted to do a few housekeeping items. Number one, if you have a tablet or other mobile device that you'd like to hook up to, there is a sheet like this on every table. I think there are actually two of them that will give you the code to be able to link up to a network where you will be able to get access to the internet if you'd like.

The second thing, the most obvious, is the restrooms are if you go out the back of the room back there, down to the left, all the way to the end, and then turn right, the restrooms will be immediately on your right hand side. And, thirdly, I just want to let people know that we have several Federal Reserve staff, both here in the room, and immediately outside. So, if you have any questions, or if we can help you with anything throughout the day, we'll be glad to do that. And, please let us know if you do have any questions. There'll be some sitting at a Federal Reserve table back in that corner. If you are looking for someone and we can give you some help.

So, with that, I'm going to look to our audio visual people and say again, welcome, and we're going to get started with a brief video about the Alliance and then Kelly O'Brien will be up to welcome you on behalf of the Alliance.

(Video Played)

KELLY O'BRIEN: Good morning everyone. One more time, good morning everyone. Thank you so much for being here today. I have the honor of being able to give some concluding remarks this afternoon, so I just quickly want to go over three very important points.

One is working with the Federal Reserve Bank is truly

a privilege and an honor. But, they have some really strict deadlines. So, our program book was printed before Thanksgiving, and as you can imagine, with any large program like this, there's always changes. In fact, there's even more changes from the revised agenda that you find as an insert in your program book. So, we'll keep you alerted of those changes as the day progresses.

But, I wanted to say, you know, when we selected this date, and a lot of people said, you're going to do it the Friday before Christmas? And I said, but you know, I want to end the year on a high note. I want to showcase the wonderful work of our working teams. I want to bring people together and I want this to be a festive day. So, in that vein, I prayed all year that there wasn't any kind of a major weather event. And God was good to us, right; mild weather. I forgot to pray about the flu, so unfortunately, we have a lot of attendees and speakers that are just, I mean, really hit hard this year.

So, but, nonetheless, we have a very strong program and excited about today. Of course, there are so many people to thank from the wonderful staff of the Federal Reserve Bank to our incredible sponsors and again, I'm going to talk more about that later this afternoon.

I also wanted you to know that at lunch today, we're going to have a strategic doing exercise. So, it's going to be a working lunch. What I want you to be prepared for is when you exit this room to go to the buffet, and we're going to have several buffet lines so that moves quickly. When you come back in the room, there's going to be table stands on the tables that will say one of the four policy areas of the OECD report. Innovation, transportation, green growth and workforce.

Go to a table that is of most interest to you. If all of those tables are filled, you know, select your second area of most interest. But, please move quickly because we really want to maximize the time that you can work on this exercise which will help you meet new people from the region and will provide ideas for us in terms of potential projects and initiatives for the Alliance moving forward. So, again, just be prepared to move tables and please get your plates and come back quickly.

So, with that, I hope that you enjoy the day. I think we have a strong program. Our working teams have worked exceptionally hard. Our Alliance Management Team has been committed to this project and we've had a very, very exciting year. And I look forward to talking to you at the end of today. Enjoy.

MR. BOYLE: Well, as Kelly points out, we at the Fed are pretty tyrannical about our time line, so in order to keep us on schedule, I'm not going to do a formal introduction, I'm just going to say that on behalf of the Fed, our President and CEO, Charlie Evans is here to welcome us. Charlie.

CHARLES L. EVANS: Thanks Jerry and good morning. I'm Charlie Evans, President and CEO of the Federal Reserve Bank of Chicago and I'd like to welcome you here to our home, to this Summit on Regional Competitiveness. We're pleased to be co-hosting the Summit with Kelly O'Brien and the staff of the Alliance for Regional Development.

Today, we will be looking at how cooperation among different types of jurisdictions can move regional economic strategies forward and help our region compete more effectively. This is the second year in a row we've hosted a summit of this type. The first followed the release of the Territorial Review of the Chicago tri-state metropolitan area by the Organization for Economic Cooperation and Development.

After the OECD released that review, dozens of leaders, including the governors of Illinois, Indiana and Wisconsin started to organize to respond to the changes identified in the report. And that led to the first summit

last year.

Since then, four working teams of regional leaders in government, academia and the private sector have met each month. Today, they will report on their progress and highlight emerging opportunities for collaboration in the areas of innovation, green growth and improving transportation on the quality of the workforce along the lines of the terrific video that we just saw this morning.

So, why is collaboration so important if our multi-state region is to move forward? Metropolitan regions are the most cohesive economies that we have; in some respects, more cohesive than different state economies or those of other nations. We live and work together in metropolitan regions because these configurations are the most productive and efficient. They produce outsized value and well-being for our households and families. They are the building blocks of the U.S. economy that delivers a good standard of living and it's therefore easy to understand why such a high percentage of the U.S. population lives in them.

But, our metropolitan regions are also deeply intertwined systems of highly developed infrastructure and complex governance arrangements. They can be fragile and require a high degree of attention. Only through

cooperation and collaboration, hard work and innovation can we hope to keep them competitive and vibrant. That is why, especially as a central banker, I think a summit like this can be so important.

I should also mention that here at the Chicago Fed we're carrying out some related efforts. We have an industrial cities initiative that has profiled cities in our Federal Reserve district that have a history and legacy of being centers of traditional manufacturing. While the mix of local industries, demographics and geographic location are important to the well being of these cities, we found that what characterizes those that out perform their peers is the presence of collaborative leadership, articulating an economic vision for the future that can be implemented regionally.

In addition, in February, we're going to be promoting regional cooperation to address economic development challenges with a conference we're hosting with the Center for Governmental Studies at Northern Illinois University. That will help regional workforce development professionals address a wide variety of the development needs of their communities. These development needs range from helping hard to employ workers upgrade their skills, to attracting and attaining the talent needed by new and existing

businesses.

Today's program includes presentations by the working teams. In addition, the agenda will include remarks by William Tompson, who leads the OECD's Urban Development Program, and also Nicholas Pinchuk, the President and Chief Executive Officer of the Snap-on Company in Kenosha. There will also be a strategic doing workshop led by Purdue's Ed Morrison. This should help everyone leave this meeting with a better sense of what can be done to advance a regional competitive strategy that is more collaborative.

So, to conclude, let me welcome you once again. I applaud you for your efforts over the past two years to seek more efficient and effective ways to make our region's economy more productive and more globally competitive. Now, I'm going to turn the podium back over to Jerry Boyle, who's going to lead you through the rest of the program today. Jerry, thanks.

MR. BOYLE: Thank you Charlie. While I'm asking for our first panel to please come on up to the table, I'm going to go ahead and do a couple of things. Number one, point out for those of you who are wondering, we are going to have a timer to try and keep us all on schedule who will be sitting up here in the front and will be tracking that time diligently, and like I say, I will be tyrannically

enforcing, come on up, the timekeeping to try and keep us on schedule.

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Working Team Presentation: Innovation

JEREMIAH P. BOYLE: So, with that, I'd like to introduce the moderator of our first panel. Don Babcock is the Director of Economic Development at NIPSCO, raised in Highland, Indiana and with thirty-five years of experience in the energy business, Don has held numerous leadership positions at NIPSCO and NiSource. Don was recently the Chairman of Northwest Indiana Forum, where he continues to serve on the Forum's Executive Committee. Don also serves on the Michigan City Redevelopment Commission, as well the Economic Development Commissions of greater LaPorte, Gary and Elkhart and when I do these introductions, I'm going to be giving abbreviated versions. The booklets in front of you will have more extensive introductions of all the panelists. So, with that, I'd like to turn it over to Don to start the first panel.

DON BABCOCK: Thank you, Jerry, and these are sent out with something like good morning Chicago, Illinois. And I know that's where Kelly was going when she started it and a big,

big thank you to Kelly for all her hard work in trying to pull us together. There's no easy way to get seven counties in three different states to try to work together towards some common goals. And I think you're going to see some good things here today. Jim Stanley, our CEO was planning on being here today, but his schedule got substantially changed, so I get to fill in for him. And just to let you know that NIPSCO, we're the gas electric eyes of northern Indiana, and we cover the northern third of the state. And we recognize how important all four of these teams work is to our state and, in particular, how important innovation is to our state. So, I'm pleased to be a part of this panel. Just a little -- Kelly is so good at this, she gave me my words I'm supposed to say, so let me work through this.

When the Alliance Innovation Team first met as a group, a lot of ideas were suggested. One thing kept being raised. This region makes things. After a lot of discussion, the team determined that the best starting point is to get a handle on what innovation assets exist in this region. Luckily, this conclusion was validated in the OECD review as a key finding in the opening page of the innovation chapter.

As a region, we recognize we must execute key strategies that will help us compete in the future. Our focus must be on developing, making and marketing new products and services that meet customers' needs. Our innovation team created a web portal of regional innovation assets to help start up and establish producers in all three states, discover useful resources, both within their home states, and beyond within the region.

We're excited to be showcasing these today. The OECD report told us that developing a common understanding of the region's innovation echo system and the key challenges it faces, and supporting that understanding with relevant regional data could help guide efforts at enhancing the region's performance in the innovation's cluster.

From the OECD, we also learned that the region's economy is shifting towards smaller firms. Our challenge today is helping these smaller firms grow and innovate. In the first decade of the 2000's, small and second-stage firms and self-employed firms added 440,000 jobs to this tri-state economy. At the same time, the medium and large sized firms shed about 375,000 jobs. So, you can see that the opportunity is in the small and second-stage firms for us to continue to grow our economy.

The Alliance's innovation team was supported in great measure by Purdue, my alma mater. More importantly, my two children's alma mater because they're both engineers and they're both working and married with people and all four of them have jobs. So, that's great.

So, I'm an unabashed Purdue supporter obviously. The portal being unveiled today can be used as a tool to build collaborations to accelerate innovation and growth for these critically important smaller, younger companies in our region, and to brand our region as a vibrant innovation hub to support regional growth.

Building upon existing web-based innovation resource locators in all three states, from the Illinois Innovation Network, Indiana's Innovation in America's Region and the Wisconsin Economic Development Corporation, the Alliance's Innovation Team, with Purdue's support, created an online portal of resources for startup and established companies bringing together asset information from across the entire tri-state region.

The portal is currently in beta, but has the potential to significantly enhance the ability of our region's innovators to network and find key resources across state lines and it is the team's goal to host a meeting early next year with stakeholders such as yourselves to discover

what other data should be included, and how best to fund the future growth and maintenance of this tool. Please watch for Alliance emails for these meetings and dates.

Finally, on behalf of the Alliance, we want to publicly thank Ed Morrison, Regional Economic Advisor to the Purdue Center for Regional Development who cannot be with us today due to a family health issue. But, Ed contributed on several fronts with the Alliance and had a strong leadership role in this team. We're going to have to also thank Beau Beaulieu, Director of Purdue Center for Regional Development. Without his support, none of this would have been possible. And Tyler Wright from Purdue that was the webmaster who actually created the website you're about to see.

Let me also acknowledge all the hours that each team member contributed identifying assets to be listed and a lot of hard work in getting us here today. One of the things that I wanted to point out, and I get a chance to speak on economic development in Indiana quite a bit, and I'm very proud to have our corporation behind us. But, one of the things I'd point out, particularly in northwest Indiana, is a couple of statistics. In 1978, the people in northwest Indiana were making 125 percent of the wage relative to the nation. Fast forward to 2008, we're only making 89

percent. And if you go a little farther, on those statistics, 2011, 2012, we're still hung in there at the 89ne percent range. And, I know we in northwest Indiana are not satisfied with being 89 percent of the average wage.

And, of course, that was driven by consolidation in the steel industry, the loss of sixty or seventy thousand jobs. We still produce about 25 percent of the nation's best steel. But, we do it with many fewer people. And, that's why, one of the reasons why innovation is so important and it's heartening to see that the needs are similar in both Wisconsin and Illinois for us to try to work together to make this an internationally known region of innovation.

And we're going to also give a big shout-out to somebody who has been a huge champion of innovation in northwest Indiana, which is John Davies. And, he's the Executive Director for the Society of Innovators and has identified over three hundred innovators in northwest Indiana. And, brought to the forefront people like Scott Albanese, the Prince of Confection, the King of Chocolate, the sweetest and most tasty man in all of northwest Indiana. It's Albanese Candy there and two million visitors every year, and I hope

you're putting some gummy bears in your Christmas bag, and pack it for your children and you'll be a big hit.

So, without any further ado, I'd like to introduce our two speakers. The first is Dr. Rob Wolcott, co-founder and Executive Director of Kellogg Innovation Network. He was born in Evansville, Indiana, now he lives in Evanston.

He's the clinical professor of Innovation and Entrepreneurship at Kellogg and co-founder of Clareo, and also, Mr. Tim Syth is from Wisconsin, dairy land central Wisconsin, if you will. He studied in Berlin for four years as a photographer and did his graduate and post-graduate work in Switzerland and now he runs a collaborative workshop called the BucketWorks. I can't read my own writing. So, without any further ado, let me introduce again, Dr. Rob Wolcott.

DR. ROBERT WOLCOTT: Thanks Don. So, thank you to Don and Jerry and, of course, to Kelly. It is disheartening to see these reports that come out from think tanks and task forces and they sit on a desk. And it is heartening and exciting to see people pick them up and do something with them. And that is hard work and I really want to thank the Alliance and Kelly for all the work that they've done over the past two years; it's really exciting. For somebody whose family arrived in Illinois in 1812. My great-great-

grandfather was born here, I'm proud to say the year before it became a state, which is kind of cool, or maybe I don't get out much, I don't know.

And we lived in Indiana for a bit and I love Wisconsin, so I've got them all covered. We don't understand how good we've got it. I'll come back to that point and what I want to also point out is that I've been an advisor to this team, but I do not take any credit for the work that has happened. This team was Tim and Ed and a whole lot of other people who did the work and figured this out. And it's been exciting to see it come together because I think that they've done the right thing and they've done it in the right way. So, I'll explain what I mean by that.

So, first of all, the tool you're going to see from Tim today is an attempt to build a mechanism to connect the ecosystem. To connect people with resources, with each other, so that they can be more effective at building businesses, at building jobs and at building opportunities, particularly these small and mid-size enterprises or maybe enterprises so small there isn't even an enterprise yet.

An individual with an idea or a concept, and I have to tell you as an entrepreneur myself and someone who invests in angel, I'm an angel investor as well, which is what I call my tuition. If you think about it, you'll know why. But,

when you're an independent entrepreneur, it is incredibly difficult.

How many of you are or have been independent entrepreneurs before? Some of us; so, when you first started out, it was incredibly difficult. It was scary as hell. And the only way you make it work is you find other people who have complementary skills and capabilities and interests and common interests and you come together and they help you in those small ways and big ways. And, that doesn't happen with a business plan. That doesn't happen because you got a little bit of capital from a venture capitalist, which is rare, or even a nice grant from the government. That's nice, a good start. But that is not what builds businesses. People build businesses in collaboration with each other.

I'm going to provide some context. On a trip I just returned from yesterday, or maybe it was the day before, it's a little cloudy. I was in Tokyo, Jakarta and Myanmar. Now, the long story is how this came together. We have at the Kellogg Innovation Network or the KIN, we have affiliates in Japan, the Japan Innovation Network and also in Jakarta, the Kellogg Innovation Network, ASEAN or KIN ASEAN. And they have programs throughout the year.

So, I go to support them and help out and we collaborate. Myanmar, of course, has had a military junta for many years and has been opening up the past few years and it's an exciting time to be there. But, if you think about this, and this was not by design, it was by coincidence. The trip started with perhaps the single most developed city on the planet, Tokyo, and ended with one of the least developed countries in the world, Myanmar.

And, so I was talking to various entrepreneurs, business people, government people. And as I was reflecting, even on this event today, I was reflecting on the radical differences between these places. Tokyo, the most developed place in the world has been flatline for the past twenty years. And they're working really hard to try and figure out how to get out of that. And one of the conversations that we have had and this actually lead to the JIN, the Japan Innovation Network. By the way, they originally wanted to call it the Japan Innovation Program, and I told them JIP would not be a good acronym. So, they went with JIN.

I said early on, you guys have to stop trying to become Silicon Valley because it's never going to happen. It's never going to happen in Japan. It's not going to happen in the Midwest either; we got over that a little while ago.

And they said, what do we do? And I said, you've got big companies, you've got mid-sized companies, as the Germans call them mittelstand. They have power, they have the technology; at least at one point they had preeminence in the world. Use what you got.

And this occurs to me to be relevant for us. Now, I totally get, Don, what you're saying about larger organizations shedding jobs. That's absolutely true, but you know what we've got are more capitals of global commerce in this part of the country than almost anywhere else in the world. And, we don't recognize the power that bringing those companies together with those small and mid-size enterprises in an intentional way which is part of what this tool set will hopefully help people to do is find those other resources.

And so that's where JIN is focusing. They're focusing on big companies, mid-sized companies to help them be more innovative. Others are working on entrepreneurs. Jakarta is a country in rapid development; fourth largest country on the planet, two hundred some million people. They have new leadership under Jokowi. It's a very exciting place if you haven't, I urge you to take a look. But, there are a lot of challenges, traffic, corruption, et

cetera, to deal with there. Very different challenges than what we have, but different assets as well.

And then Myanmar. I had a conversation coincidentally enough with the deputy governor of the Myanmar central bank. Yes, Myanmar does have a central bank and they're building the institutions rapidly to come up to international standards. And he had an interesting observation. So, this fellow, Winston Aung, had spent a lot of time in Laos and Cambodia when they were starting to develop, and also in the United States during our financial crisis. And he said, "You know what, in all of my travels I've never been to a part of the world where people said to me, you know what, everything's great in our economy. We're doing great; we really don't need to get any better." And he said, "I reflected on that and I realized that everybody thinks their economy sucks." And then I said, "You know you're right, but I've got an exception to that rule and that was during the dot com boom, Silicon Valley; everybody thought things were great." And, there are a couple of other examples like the bubble in Japan in the late 1980's. Everybody thought things were great, they were going to take over the world. So, here's a clue: any time everybody thinks things are great, that probably means we're in a bubble."

So, his comment about everybody thinks their economy is bad caused me to think about Chicago and Illinois and Indiana and Wisconsin. Yes, we have challenges and we need to reflect a lot on the fact that we have challenges because only the paranoid survive as Andy Grove said from Intel. But, when you look at Myanmar, man they got problems.

They got challenges, but they've got energy and they've got desire and they've got people coming together for the first time in very difficult conditions and they're going to build something. What can we build from this wonderful foundation that we have here in the Midwest? That's what we're here for today. That is damned exciting. And, we have an opportunity to build that prosperity in this part of the world and I'll also tell you that my friends in Myanmar and Tokyo and Jakarta, if they don't already know about Chicago, about Illinois, about Indiana, Wisconsin and I tell them, their eyes light up. I had no idea there were more Fortune 500 companies in this region than almost any anywhere else in the country. I had no idea the infrastructure and the capabilities and the non-stop flights. And they start thinking about coming here. So, the second thing I'll say, that's ecosystem, building the connections between people and recognizing the assets

that we've got here. The second thing I'll say is, this team is doing it right. It is exciting, I mean, we as engineers often, we want to get the perfect plan and test it in the lab and make sure it's perfect before it sees the light of day. And that is not the right way to do this. We're not building an aircraft engine after all. We're trying something to see if we can provide an infrastructure to help people come together to build their business.

And so, as you'll see from Tim, they built a first version of this environment, an online space where we can connect people with resources to help them become better, to help them deal with the challenges of being an entrepreneur or having an idea, having a concept or being a small or medium-sized enterprise that's trying to grow, trying to expand perhaps across the region, perhaps beyond the region, perhaps to the world. And, so they did it with the notion of lean startup, assume we don't have any money. In fact, any time a student comes to me, or an alum and says, Professor, I need to raise some money I say, well maybe you do, maybe you don't, but here's your first exercise: Go into a room with your team and ask yourself, what is everything we can do to resolve uncertainty with no money? What is everything we can do to move our project forward with zero capital?

Now, maybe five hundred bucks to take a flight somewhere and interview people or something like that. But, what is everything you can do with almost no money to drive uncertainty out of the system. And, you know what happens? They are shocked by how much they can accomplish and how much better they can make their opportunity. And, while you didn't have zero money, it comes pretty close. And, the team has really done an amazing job of building something that I, at least personally believe, is going to have an impact. You never know until it happens as I tell my students. You never know it's working until people are paying you for it.

But, you know what, I think we got a shot. So, we don't realize how good we've got it here, but I don't want people to realize it too much because then we become complacent. So, let's go out and leverage. Let's go out and bring more people here. I just met a guy from Denver, one of the startup meccas and he just moved here to first expansion city. Uber did the same thing early on. Chicago was the first major expansion city for Uber from Denver. So, we've got big companies. We've got startup community like we've never had before if you're not familiar with it. And, heck, you've got a co-work space in the middle of Wisconsin with colleagues building new stuff. And that's

really exciting. So, with that I'll conclude my remarks and turn it over to Tim.

TIM SYTH: Hi everybody. Thank you for taking the time and appreciation to Kelly and also the work team. It's been a really fun ride and that was an awesome lead-in there, Rob. I really appreciate that. As someone who has lived in Japan for a year and a half, lived in Berlin for four years, lived in Mexico for a year, is I have been out and about. I've traveled to about thirty countries as a photographer as well.

And I moved back here intentionally after Berlin. If anyone knows what's going on in Berlin right now: tech, culture, everything. It's like the hub, an international hub. I believe the same thing can happen in this part of the country which is why I moved here. And, I'm from here, my family is from here, but coming back and that's the hope that I have is how do we instigate that experience here again. We can reference the Chicago World's Fair as a high point of this area. There's no reason why we can't go back again to that space.

So, with that I'm going to go to the first slide here and make sure this works. In the innovation work group, we decided to focus on mapping the innovation ecosystem. This idea came to us. Well, I'm going to that in a second.

But, how do we know what we have here without mapping?

But, the first thing that you do when you go to a new place and a new time is you make a map. And that's kind of what we came to, the conclusion we came to.

Before we jump into it, I want to take a moment and speak to the experience that all of the work groups went through that I think is really noteworthy. Two really important things, it's cross sector and cross scale. Very few times do you have people cross sector and cross scale working together. Usually it's all C-suites, or it's all mayors, or it's all academics, but going cross sector and cross scale across state lines is kind of a big deal. And I think that was borne out in the complexity of some of the conversations that we had. At the same time, we should use that to like incite further change and incite further development. The process itself consisted of monthly calls and in-person work sessions, three of them. So the work that you're seeing presented today was literally carried out in a handful of phone calls and three in-person meetings. It was never the same group on the phone call; it was never the same group in the room. And that is something we took from Ed's strategic doing process, this idea, you're never going to have the same network at the same time. So, you've got to make the most of it.

So, the first question, and the biggest question that we had to deal with is what is innovation? You know, we're looking at the transportation and logistics. We're looking at green technology. We're looking at human capital.

Innovation applies to all of these things. And I think that anyone in the innovation workgroup will attest to the complexities of some of the conversations that we had. Is it a focus on manufacturing? Is it innovation as talent as John Davies pointed out in Indiana? Or, how about product development, for Scott, right, as we went around and around, what is the thing that we want to focus on and how do we start talking about this.

And what we did is we went out and looked for examples, because as I said, as we looked at mapping the ecosystem, where do we start? We found national examples, but a really great one, right next door, in another city that's got some similar issues to others in the region was Detroit; it's the Detroit BizGrid. We got on a phone call with them. We spoke with the people who set that up. And the key learnings we took away are as it says at the bottom of this screen here, it was a lean methodology and practice. Be fast, be flexible, be creative with the medium and don't be all things to all people.

And I think Rob spoke to this very well, is this is not, we're not putting this out as the solution. We're putting this out as a first step and as an invitation to carry forward. And spinning off of don't be all things to all people we decided to target two groups: Companies seeking help in product development and intermediaries in the ecosystem. And by intermediaries, we mean what are the nodes that are in the networks? You can't go to every individual part of the network. But can we find the nodes, kind of the hubs where things are moving through. Think of it as the logistics network for information. So, it's not made of railroads and airplanes, it's made of co-working spaces, economic development corporations and small business associations, things like that.

And so with this in mind is we're going to take a tour into the website that we set up. This is a live website. There are approximately four pages. So, we're not even talking beta, we're talking alpha version. It's at fastproduct.net. And everyone can check that out right now and again, thanks to Ed Morrison and Tyler at Purdue, is they really made this happen on the next to nothing budget, which was really important.

I do want to take a moment and read the opening paragraph on the website. It says, "Fast product provides

entrepreneurs and growth companies a fast way to connect with networks that can help grow a business. The region stretching from Milwaukee through Chicago to Gary offers a wide range of support networks. Entrepreneurial leaders who take advantage of these networks can move products into new markets more quickly. After all, isn't that what it's all about?" So, again, this isn't about this comprehensive network of everything. This is about laying the groundwork, laying that initial map.

You know, when Illinois became a state in 1813, that's my learning for the day, I think; 1848 in Wisconsin. But, what they all started with is, you make a map of the -- 1812? Oh, all right, so we got that sorted out. The point being is, when these states were being made is they mapped them. And if we're moving from the industrial to the information age, we need to map again.

Frankly, I feel like we have an advantage because if you look at the coast, they've got their success, they know where they're going, you know, I don't want to be in Silicon Valley, otherwise I would have moved there. But we can learn from that, but truly iterate on the next level of what it means to be in the information age. We're not looking to tweak systems that were.

If you look at Silicon Valley, when did it start? In the sixties and seventies? That wasn't the information age. That's our opportunity. We can start in the information age. And so, with this website that we've made, we've given three tracks: ideas, startup and existing businesses. And the target market here is people who are relatively new to the ecosystem.

If you're deeply networked, you probably already have the rolodex, you need to reach out to people. Again, we're not trying to be all things to all people. We want to make an invitation and a starting point for those who don't know where to begin. And to populate this, the team literally went out and we categorized over one hundred different resources. We debated as to what we include, what we don't include. After a while, we just decided to include the ones that we could find. Again, this is an alpha version, we're going fast and lean with this.

And we took it from the regional perspective. You'll find things that stop at county lines, state lines, city lines, et cetera. This is looking at a region. I mean, we're one-fifth of the world's fresh water which comes out of this region. We've got things going for us in this region. And so what you'd do is you would go into the site and you choose a path to go down and resources are then offered up

to you through a directory. I see we're having a little bit of a mess up with the formatting here. Like we said it is an alpha version.

But, Startup Milwaukee is a group up in Milwaukee that focuses on, it's a startup network. They help startups get connected and work together. And, as you can see, there's two colors there, it's got the idea part and it also has the startup. Those are the two areas that it focuses on and then below that, we've got the Hudson Business Lounge which is a co-working space.

So, if you have an idea, if you have a startup, or if you have an existing business, it is a resource that's available to you. And if you were to page down, which I can't because we didn't want to be on the internet, because we weren't sure we would access it, is you would find about one hundred more of these resources that have already been categorized and catalogued.

The invitation to this room is to help us build this out. How do we identify what's important? But what are the parts that are important to the narrative that we're building? So, when I go here, I'm like wow, I'm inspired by Startup Milwaukee and maybe that's not where I eventually land, but it helps paint this picture that I think it seems like we're all trying to achieve.

I also want to take a moment and this is at the end of the fastproduct website. And I want to read this as well:

"Growing companies in the Midwest is different than on the coast. We are not looking for the quick exit, the bottle rocket startup. Growth in the Midwest comes differently from the relentless pragmatic application of new ideas to new products in new markets." Again is, let's learn from other places, but let's do our own thing. That's the opportunity that we have.

So, I've got a couple of minutes left. I'm just going to finish up, so fastproduct is about narrative as much as mapping, excuse me, products and making, pragmatism and quality, pride and acknowledgement. Confidence in the global opportunity that we have here and now is how do we start that tale and how do we get people moving in that direction?

In conclusion, we do have an ask to put forth. As Don spoke to, we're not sure this works. We might have to pivot away from this. This might have been an exercise in like working through some issues and moving on to the next thing. But, what we want to ask this group and your networks is, is there value in developing this product further? Is there interest in providing the support necessary to make that happen?

That interest could come through sponsorship. It could come through technological support. It could come through helping us populate the database that we already have. And, again, starting to build this web of resources and connections and assets to build off of. Because we need to start with assets, don't start with our gaps. Let's start with our strengths and that's what we're trying to lay out here.

If you do have something to add to this or would like to engage, Ed's been gracious enough to let me share his email in public, edmorrison@purdue.edu. And so, feel free to email him as much as you'd like. I'm sure he would appreciate that. And, again, just a nod to Ed because he had a health issue in the family and we really appreciate the support and wish he could be with us, but we support where he's at.

And then my closing slide is pointing out that thirty-one people contributed to this effort at different phases. Some of them are even on other teams now. Like we've been moving in and out and moving together. But, again, think of the cross scale, the cross sector and the story that we're beginning to tell. Because this is a lot of people working together and it was hard. But this is the opportunity moving forward. So, thank you very much.

MR. BABCOCK: Thank you again Tim and Rob. This is certainly an example of working fast together, so another warm round of applause for their good work.

MR. BOYLE: I think we have just a couple of minutes for a couple of questions for panel, if there are any. And for the rest of the day, if I can just call your attention to the fact that there are index cards at every table that if you have questions, we invite you to write those questions down and some of the Alliance staff will be coming around and collecting those cards so that we can have those questions. But since we didn't announce that before, we'll take questions from the floor if we have any.

MR. JOHN DAVIES: From an innovation perspective, what can this region become known for in the world, from an innovation perspective?

MR. SYTH: Real stuff, real stuff.

DR. WOLCOTT: And I'd like to say real stuff while living well doing it. I mean I think we've got the opportunity of fresh water and excellent culture here. I mean there's a Midwest community that I think all of us appreciate is doing awesome things while living well. I think is important.

MR. SYTH: And we can also I think be proud of being known as just, you know, pretty nice people. That means

something. One of our Japanese said, I like going to Chicago because the people are pretty nice.

MR. BABCOCK: One of the things that I know Indiana is trying to brand themselves with and I think it applies to the whole region is, if you look at some of the billboards it says, Indiana, a state of thinkers, innovators and makers, right? We make things, make the world better, help us live together better. And one of the things that I like to have, or brag about that we didn't used to have and I talked a little bit earlier about was the steel industry. It used to be you would drive across the skyway to a road or wherever and you could literally cut the air with a knife. I mean it was gray and orange and brown and it smelled and all this kind of stuff.

And so, what happened was, people got a little bit more wealth working in those industries, they would move farther out in the green space where we got some sprawl and some other things going on. But, now what's happened is with regulation and new technology, you know, our skies and our water are very clean. And, what we are doing right now is reclaiming the lakefront and creating a quality place. I think one of the challenges for us is to try to go back to some of the urban centers and try to attract some young

people in that are thinkers, innovators and makers and work with some of us old guys to make some new stuff to improve our lives.

Q: One more question, primarily for Robert, you said, you know get rid of risk with no money and all that, and actually to create value, take a three-person company to make it a three thousand. Usually it requires filling a market that doesn't exist. People don't know that that market exists. And actually (inaudible 0:51:50.3) is pretty good at that. They are starting to make companies with new materials. But a lot of those first steps, if you're not talking an app, you're talking about making materials or devices, it actually takes real money because you've got to build the first one, the fifth one. How do you do that without cash flow?

DR. WOLCOTT: Great, so let me clar- -- that's a good question. Let me clarify what I was saying. This was an exercise that any entrepreneur should do. In fact, any team in a company, any team in a corporation that's trying to do something. Sit down in a room and say, what is everything we can do to resolve uncertainty because innovation management is just the resolution of uncertainty through a rational process. How do we resolve as much uncertainty as possible with no money? And that will get

you somewhere, but it won't get you all the way.

So, I wasn't saying that you can launch that new biotech product with zero money, of course not. But, how far can you get before you need to raise capital, or without raising much capital, right? So, if you're going to launch a biotech company, you're going to have to raise a bunch of money and have a long runway, absolutely. But, it will make you better. I mean there are lots of examples of companies that had too much money, or teams that have too much money. And they threw it at the first thing that looked good. Webvan, that was one of my favorites, a billion dollars and it blew up. So, having too much money is a curse, but we need capital. We definitely need growth capital. I think we need more growth capital in the Midwest, at risk capital, real at risk capital, but I don't like to dwell on that because people tend to use it as an excuse, as opposed to getting to work doing what we can without it. Does that make sense?

MR. BABCOCK: Thank you very much again, Tim and Rob.

Thank you all for being here.

Federal Reserve Bank of Chicago
Summit on Regional Competitiveness
December 19, 2014

Working Team Presentation: Green Growth

JEREMIAH P. BOYLE: So, we're not going to take a formal break now, if we could go ahead. I'm sorry. Well, I think we are going to take a five minute break so that we can take care of some technical issues right now. So, just a very quick five minute break, and then we'll get right back to the next panel. Okay, folks, if I could ask you to find your seats again please. Sorry to do this to you, I know that networking is as valuable as anything else. But, we do want to make sure that we stay on schedule as much as we can today. So, now that we've gotten the technical issue resolved, we'll go ahead and get started with the Green Growth working panel.

I'd like to take this opportunity to introduce the panel's moderator. If you could go ahead and take your seats, I'll go ahead and introduce this panel. For those of you who don't know, that's how you get elected in Wisconsin. Jim Stern has served since 2007 as Executive Vice President of A.O. Smith Corporation, a leading global innovator and manufacturer of residential and commercial water heating and treatment

equipment. Mr. Stern serves as a member of the Board of Directors of the National Association of Manufacturers and the Milwaukee Water Council. He also currently serves on a number of charitable boards, including the Arch Diocese of Milwaukee and the Fleck Foundation. Jim?

MR. JAMES F. STERN: Thank you and good morning to everyone. I'd like the tri-state area to -- in my family has been very important. I went to undergrad in northern Indiana. I went to graduate school here in Chicago and started my career here and was born, raised and now live in Milwaukee. So, I go across all three states here.

The tri-state region is well positioned to accelerate the growth potential of the green economy. The OECD report found that information sharing across the region, across these state lines would help provide a more stable business environment for the tri-state region's green cluster. It's a theme that was echoed by all of the working teams as well. In our region, it can be difficult to know about important useful assets that lie across different state borders. That is particularly true in the water technology sector. Wisconsin long has been recognized as a leader in water technology. According to the WEDCC, (inaudible 1:00:48.2), the Wisconsin water sector employs nearly thirty-seven thousand people and has annual sales of \$12 billion dollars.

But this economic benefit has not traditionally extended to the rest of the tri-state region. As a world hub of water research, water technologies and water-focused companies, this region can work together to develop educational programs to train our talent, attract water focused companies and build partnerships that cut across multiple sectors and geographic boundaries.

So this year, the Alliance's green growth team focused on building upon Wisconsin's strong leadership in water technology to expand the water cluster in Illinois and in Indiana and raise the regional water economy as a whole. That work has included much thoughtful discussion with regional partners, significant research to define the water technology cluster and identify water tech companies across these three states.

In November, a water summit at Loyola University's water tower campus in downtown Chicago brought our regional partners and water tech companies together to move the discussion forward. In addition, the green growth team is strategizing a potential water technology recognition award in the upcoming year as a way to further promote the regional water sector. So, good things are happening. I'm going to introduce the Green Growth Water Team presenters today, but the whole team is in the program and their bios are also online.

So, our panel today is Dr. David Garman, Founding Dean-School of Freshwater Sciences, University of Wisconsin-Milwaukee; very exciting new venture for us in Milwaukee. Dr. Sammis White, Interim Dean and Director of Workforce Development-School of Continuing Education, University of Wisconsin Milwaukee. And, Heather Ennis, President and CEO, Northwest Indiana Forum. So, let me turn it over to David.

DR. DAVID GARMAN: Thanks Jim. The most interesting thing today so far is talking about tools. And, one of the things that we found in terms of developing both the water aspect and the green aspect, is knowing where things are happening, what is new and how do we push that forward into a world market.

The Water Council has been working with inno360 to develop a tool which we can do a lot more with this. And, it is not just a single tool to use by itself, you can use it for learning, for sharing, for collaborating and you can put up a project, attract people and then move in. So, it is in the first place, forming a group of interested people and then moving on so that we'll get both the public private water-related collaborative going.

And, what we've found is that nobody owns it all. The researchers love a lot of it, the industry partners love many other parts. And there's a lot of community expertise out

there. And whether or not you want to know something which is happening in China, in India or just in Indiana, quite often, you've got to go to one of your community networks to find things happen.

This is not something which is happening absolutely completely new. The tool was developed for industry to enable them and they go everything from major manufacturers and consumers, right through to some of the top military labs and global networks.

So, but really what we're trying to do is to pull it all together. Quite often when I'm doing a literature search, I know the key people in my area so that I automatically make linkages. So, first of all, if I want to put something in, I make the need analyze it. Usually, I analyze that in terms of maybe in terms of the impact factor or the lead researcher. That doesn't give me a complete picture because this is my internal knowledge and the external knowledge. So, what the tools we need to be able to do is to look at how are things are clustered. What the really hot topics? How are people interrelated? How is technology interrelated? Where are the relationships and how are those made up? How do they fit in a geospatial context? What are the key words which we have to do it, and then finally, what are the trends? Are we on a growing trend? Is this completely new? Is this a

disruptive technology? Where are we at in terms of making it all?

So, we can do things, not just simply by one or two key words, we can bring everybody together. So, both the academics from my point of view, by people who are associated with us, by people who want to market or sell for example or use it. We can do it by a common project, saying we have a common problem. We want to deal with biofilms. How do we do this? So, we can do then by a theme or an issue and also, by groups of people. These key things which came out of it, can we get in there easily. It is easy to connect? Can we actually expand this and how quickly can we get to speed to market.

Many of the tools that we've seen do take months, sometimes years to be able to get to a final product. And so, whether it's P&G or the Air Force or GE or whoever it is, they have always said, it is speed to get an understanding of your market, your innovation. And, what we've found in the green area is it is so distributed, it is so split up and divided all over the world that trying to pull things together is incredibly difficult. So that where we do in terms of pulling this together is to get the need, the landscape, the ecosystem, the opportunity, so we can develop a campaign and a response. And the response may be we can't actually do it. There isn't a market. Or, it's a niche

market and maybe it's better for an SME, a small or medium enterprise rather than a large company. So, we can tailor the opportunity to the size of development. The dashboard you get out of this is going to show you your hot words, how your clusters go, your linkages, where the activities are going and then all of the other things that you need to actually do your market development.

The sort of cluster information maps look something like this. But, then you can go to each one of those, find out who is the key person. Who are the people those people are linked to. So, we have a geospatial linkage of where things are happening. Go for water cluster, we see time and time again, we come back to Milwaukee as Jim has already said. It is a major center in terms of doing it. But, there are other major activities going on in the U.S. and, of course, around the world. I've given an academic one here, but each one of these cluster circles, you can drill down and take up each one of the key words. We've already preloaded the cluster circles with key words in terms of water, which we've taken off of the International Water Association's working groups. That gives us the key things to be able to work on.

If you want to know where the hot topics are, and the red is the hottest topic, of course. You can then see what is adjacent to it. Maybe what it is you are looking for isn't

in cells, but it could be in nuclear receptors. The same way if you go into any other green bit of technology, you can look at it and say, where is this working, what is the emerging topic, in terms of how things go?

So, by using this tool we can bring the pieces, the colleagues, we can search across multiple networks all at once. And at the back of this is something like eighty different databases. So, we can find stuff. So, okay, finding stuff; how do we analyze it? And the clusters and the impacts and the visualize the big data is the key to being able to bring this down to something we can actually deal with. We can then start sharing that because the way we see things is not necessarily the way other people are sharing. So, in being able to share the projects, the ideas and thoughts and get other people, you then start refining this to give you your top tools.

And then finally, you can use this tool to connect with everybody else who is either in your network, in your working group, or if you want to, expand that into international network as well. So, the idea of this is increasing your speed to market. It is being able to do your landscaping in those hours and not months and being able to expand your capability to innovate in your innovation ecosystem.

Now we have done this particularly for the water sector, but it has obviously got applicability across quite a number of other ideas as well. I believe it is complimentary to that last tool that we just saw and putting new networks and new capabilities together is one of the secrets of doing this and you can load your own networks into this database to make things happen.

The biggest thing about it is not relearning. It is reducing this risk of duplication, of getting halfway down your implementation path and saying, oh, Fred in Bullemakanker has actually invented this ten years ago and, you know, you're out of luck in terms of a patent or an invention or some clever idea.

So, what we are now going to is being able to connect this new platform as a partner, or as a sponsor or as a member of all three, and this will actually go through the Water Council. And the Water Council is setting up the direct access for this. We are working with Mike Turillo, who is co-founder of inno360, and the idea is to offer attractive rates for people who want to come in, who can do the linkages, who want to be part of this looking for the in their case, the water ecosystems, but also, many other ones.

So, finally, I'd like to say we are probably ninety percent down the path. We are expecting a launch in the new year and

we'd love to give you demonstrations and just show you how effective this tool is. My own experience with it takes me way beyond my academic environment and that's something, thanks.

DR. SAMMIS WHITE: Good morning. What I'm going to talk to you about is a step that we took as a committee, Green Growth Committee. We met, we did our strategic doing. We found two different subjects which were kind of split on as what we ought to get involved with, and we went with water because of the presence of a couple of us on the Committee, but more because Milwaukee has become a water hub and has gained traction internationally.

So, we wanted to see are there water companies in Illinois and Indiana? And the first question is how to identify water companies. There aren't any direct codes which say this is water. So, one of the things I've worked on actually for several years here is defining water tech companies, and at the moment we have fifteen six digit North American industrial classification codes where we can find the vast majority of these companies. And these are the listings.

From here, we have the general areas, then we had to go to the six digit codes. We had to identify them and we came up with several thousand under these codes. And I had my graduate students, the last bastion of slavery, go through

trying to create a data set from this and from the thousands we quickly got down to around two hundred and sixty water tech companies in northeast Illinois and northwest Indiana. Now we found some interesting distributions of these companies and this is what we really had to know; do they exist, and in what sector do these exist, where geographically are they, how large are they and the like. So, it's fairly simple once you find out who they are. So, of the vast majority, we didn't count Wisconsin because we already knew we had a good number there, probably in the neighborhood of one hundred and sixty water technology companies in southeast Wisconsin alone. In Illinois and Indiana, we had a significant split. The vast majority of these firms are in Illinois, thirty-two in Indiana.

Interestingly, we looked at manufacturing; the two largest categories are either different types of manufacturers or consultants, engineering firms, engineering, architecture, landscape architecture who get involved in designing systems for water users. In Illinois, we found 108 manufacturers, in Indiana ten, and in southeast Wisconsin 101, so relatively similar numbers in two of those states. The big difference is that a higher proportion of the companies in Wisconsin are involved in manufacturing and more

involved in application, given the larger service area, higher population in Illinois.

What we did find, the other part of this consultants, much higher proportion of the water tech firms in these two states are significantly higher than we find in southeast Wisconsin where manufacturing is a much greater proportion of the companies.

If you want to know specifically what counties, Cook and DuPage are certainly the dominant ones, Lake in Indiana. It is easier to see, they are distributed and concentrated as you can see by droplets and the droplets are dollars.

One of the things we found is there are very limited number of higher sales volume companies involved in this; again, concentration of consultants, a lot of consultants in these two states. In terms of size, 86 percent of them have fewer than 100 employees. So, it is smaller. This might work with the innovation group in terms of emphasis on smaller companies, second stage companies for growth. There are just very few leader companies. We have a few more of those in Wisconsin which certainly have helped. A.O. Smith has been a very big help on this.

In terms of sales, these are all estimates based off of Dunn & Bradstreet. Illinois and Indiana looked to have close to

\$11 billion dollars in sales, but a couple of those companies which have the biggest numbers are involved maybe ten percent in other business' water. So, we're really looking at something over six billion as current estimates and with southeast Wisconsin, our conservative number is 12, our stretch is 20, but I think we are closer to the 12.

Another thing I looked at is density. What's the proportion and when we look at southeast versus northeast Illinois, northwest Indiana, it's clear that there is much greater density both overall in terms of water technology, especially in manufacturing. So, the conclusion that we have reached, there are water tech companies here, there's potential to organize and grow these firms and if that is done, certainly the tri-state region will have a stronger capacity than we have in Wisconsin alone. And that is it, thank you.

MS. HEATHER ENNIS: Well, it's been said that water is the new oil. If you ask my friend, Vince Griffin, at the Indiana State Chamber of Commerce, who is an environmental guru there, whiskey is made for drinking and water is made for fighting. If you ask this team, the green team of the Tri-State Alliance, they will tell you something different. Water is made for innovating and water is made for driving investment. Let's really stop and think about this. Our region is blessed with an amazing natural resource. The Great Lakes represent

the largest freshwater resource on earth. It is reported that if you combine all of the Great Lakes shoreline, it's longer than either the east or the west coast. We have 20 percent of the planet's freshwater supply right here in our region. It's led to great industry and great opportunity.

Northwest Indiana has the most water-intense manufacturing cluster in the country. And Wisconsin, as we have just heard about, is doing amazing with water technology in their water council. They have been internationally acclaimed. So, we're so lucky to have them here in the area.

It was this water technology cluster that the green team chose as its first initiative. We're very, very fortunate to have Dr. Garman and Dr. White on that team. They've done an immense amount of research and helped drive this forward. We all met together on November 24th. I have not had the opportunity to serve on this team, but had the opportunity to attend the event on the 24th of November where we got together and talked about what a great opportunity that cluster is; how to move this technology forward, how to share information, where we can each play a part in this role.

That group was moderated by the Honorable John Dickert, Mayor of Racine, who's here with us today. Also, Kirk Allen, President and CEO of the Sloan Valve

Company was with us. The President and CEO of the Water Council was with us as well, as well as a number of other people, Rita Athas, Advisor on the Board of World Business Chicago, Dr. Ramirez (phonetic) who is the founder of Markelov Technologies (phonetic), Dr. Seth Snyder with Argonne National Laboratory, Dr. Nancy Tuchman, Professor and Founding Director of the Institute of Environmental Sustainability at Loyola and then Dr. White as we talked about who did so much leg work for that event.

It was a really great event and I had an opportunity to do something fantastic networking. And, as I said, initiate the conversation on where we're at with these technologies, where the clusters are occurring, why they are occurring there and what things we can learn from one another to continue to drive the industry forward. Obviously, we are well poised for water technology. We are well poised for companies that need intense water resources and we should continue to use this to our advantage and continue to market it, because as I said, water is the new world.

MR. STERN: Well, there had to be one group that got us off on time. So, we were the first one to do so. I don't know if there is any time for questions or.

MR. BOYLE: If there are any pressing questions, we can take one or two and then we'll get back on our schedule. Any questions for this group?

Q: I'm curious for the cluster, the network. How do you define the taxonomy? You know to basically make a classification of it?

DR. WHITE: We struggled with that obviously trying to find companies that are basically involved in solving problems through products or services, being water, quality water, quantity. There hasn't been a definition. We've tried to come up with a definition and we're trying to sell others on that definition.

DR. GARMAN: We are trying to do a DNA analysis, but it doesn't work.

MR. BOYLE: One more.

Q: How did the team look into other green initiatives and how do you see your efforts connecting into those initiatives going forward?

DR. WHITE: The other topic -- we looked a number in terms -- at our first strategic doing meeting. And the one that was really tied in terms of the first voting round was how to make something good and useful out of food waste. And 85 percent of our food waste is land filled at this point. There's great resource in that, particularly soil enhancement

or possibly even bioenergy, and the issue is how do you organize this entire area so that you can make it a series of viable businesses and reap the rewards in terms of the soil amendments or energy. And I think we will continue that discussion.

DR. GARMAN: Just on that we have a small working group going in Milwaukee looking at the way to strategically structure this going forward. We've identified groups of industries, if you like, who are where those intersections come and what the associated technology is. The biggest opportunity seems to be in new technologies. But the biggest impediment of this are established or well established mechanisms for waste disposal and those barriers are linked into both the legislation or statutes which enable certain things to do. And one or two big players who want to have things done their way.

But, what we're seeing develop out of this is there is a lot of small industries, these perhaps are in the agro-industry, where there is a great potential because they are large waste developers where for alternative energy production and there's a number of emerging companies in that area which is looking very promising, not only as a start-up, but as new businesses; certainly, a major area for investment and the spinoffs which come of those in terms of

any degeneration. So, we're looking at that space. I can see that that is going to be the next one following off of the water.

Q: Yes, if I could just make a (inaudible 1:27:03.9). I just want to make one quick comment on the cluster definitions. Through our cluster mapping project, we have some fairly rigorous cluster definition frameworks that we would be happy to work with you on. That includes elements such as labor density and it includes input output modeling as a factor, as well as location quotients based on labor. You know, it's still evolving. There's still issues dealing with things such as (inaudible 1:27:30.0) classifications for industries, but I think this element of establishing some of the common methodology around cluster definition can be really critical to advancing our collective interests in this area.

MR. STERN: Thank you and if we could thank the Green Growth Panel please.

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Federal Reserve Bank of Chicago
Summit on Regional Competitiveness
December 19, 2014

Keynote - Matt Erskine

MR. JEREMIAH P. BOYLE: Okay, next I would like to introduce our keynote speaker. Matt Erskine was appointed by President Obama to serve as the Deputy Assistant Secretary of Commerce for Economic Development and Chief Operating Officer of the Economic Development Administration in September of 2011. Mr. Erskine brings more than twenty years of leadership and management experience in business, public sector and public private partnerships. Mr. Erskine received special recognition from the International Economic Development Council in 2014 for leadership in and service to the economic development profession. With that, Mr. Erskine.

MR. MATT ERSKINE: Thank you very much and good morning. What a terrific event, terrific agenda and great attendance. It is great to be with you for this important summit here in Chicago this morning. I commend you all for coming together, coming together to focus on regional competitiveness and regional collaboration. In fact, I would argue that at this critical moment for our nation's economy, the work that we

are doing together, the work that you are doing is more important now than it has ever been. And in just a few moments, I want to delve more into what I mean by that. And I also want to talk to you about our agenda and our efforts at the U.S. Department of Commerce and at the U.S. Economic Development Administration, EDA, to advance effective and transformational regional collaboration.

But first, I need to say a few words of thanks. Thank you, Jerry, for the kind introduction and for emceeding the Summit, and a big thanks to you and your team for all of your efforts to make this event a success. I want to say a special thanks to President Evans for his warm welcome to the Federal Reserve and for hosting us today. And I thank the Alliance Chairmen, Paul Jones, Michael Mullen and Jim Stanley for the invitation to address this group of regional leaders and for their efforts, in particular, to foster the job-creating collaboration between the great states of Wisconsin, Illinois and Indiana and I appreciate their leadership and, of course, a special thanks to Kelly O'Brien and her team, including all of the volunteers for their work, both for this event, but for their overall work on strengthening economic competitiveness of the tri-state region and again, for facilitating this great event, and, finally, to our partners at the University of Wisconsin- Parkside, the University of

Wisconsin-Madison and Purdue University for your work in implementing the collaborative process resulting from the OECD territorial review of the region.

And very quickly before I begin, I want to recognize some of my EDA colleagues who are here with us today. And first, I would like to recognize Jeannette Tamayo. Where is Jeannette? There she is. Jeannette, as I think many of you know is the director of our regional office headquartered here in Chicago.

As many of you know, our Chicago region at EDA serves the states of Illinois, Wisconsin, Indiana, Michigan, Ohio and Minnesota. And joining Jeanette are some of our key regional office staff members here in Chicago, Susan Bryn Mawr (phonetic), Regional Counsel; Don Cathan, our Area Director, and we even have an intern from our office, Joe Argus (phonetic). So, thank you very much. And, I want to recognize Joseph Hurst, who is, where is Joe? Joe is, there he is. Joe serves as our confidential special assistant in the office of the Assistant Secretary in Washington. I want to thank them for their service. And I encourage you to please visit with them. They're here to be of service, to be of help, so, if you need more information, want to ask more questions, they are here for you. So, please do seek them out over the course of the day.

So, as someone who has served as a economic development professional at the federal, state and regional level, and as someone who serves as the vice chair for the Regional Economic Policy Committee for the OECD, I am reminded time and again that economic development isn't just about what we do, it's most importantly about who we do it with. Who steps up to serve in the leadership roles? Who sits at the table and stays at the table for the long term work? Who provides the day-to-day focus and diligence? Who sets the tone and serves the evangelist? And when the going gets tough, when the barriers seem insurmountable, who is tirelessly devoted to the cause and applying the grit, determination and sustained effort required? My good friend and colleague, Doug O'Brien, who is the Deputy Undersecretary for world development at the USDA states it well when he says that, in our work across the country, and we are fortunate to be able to see a macro view of economic development, he states it well when he says that, "Very often we find regions that have similar assets and similar strengths, but without fail, the differentiator between the regions that are exceedingly successful and those that are less successful comes down to people, and the leadership and initiative they provide."

But, I take it one step further, in addition to the leadership and initiative, are the leaders and the doers

forming, developing and sustaining the partnerships required to fully capitalize on the regional assets and achieve the outcomes? The answers to these questions, and especially that last question on partnerships, frame why we are here. And as I stated earlier, the need for the robust partnerships between government, the private sector, community leadership and higher education, that need is more important than ever.

So, why do I say that this is important, and why now, more than ever, do we need to advance the priority of delivering the innovation economy through effective regional collaboration? Well, it's important because today the U.S. is presented with two concurrent macro trends, one representing great opportunity, and the other significant challenges. And how we address those challenges and opportunities will largely determine what kind of economic future we have as regions, but also the economic future we have as a country overall.

So, first trend, the U.S. is in a particularly strong, competitive economic position right now for even stronger business growth. This is from entrepreneurs and start-ups to mid-size firms to large scale enterprises. And it is due to a number of national comparative advantages that we have as a country, including our strength in research and development, our stable capital markets, continued increases

in the productivity of American workers, strong rule of law, intellectual property protection, our reliable supply and service chains and, of course, the new opportunities created by the expansion of and the reliability of our domestic energy resources.

However, to seize this crucial moment, to seize it in full, a number of issues have to be addressed at the federal, state, regional and local levels across the United States. And these issues include importantly insuring that our states, regions and communities are positioned to most effectively support business ecosystems and the conditions for business growth; because the American economy that we always talked about is, in fact, a collection of regional economies.

Which brings me to the second macro trend we are facing and the challenge before all of us; the simple fact is, is that many regions and communities are not fully prepared to seize this economic moment in full. So, while states and communities may be in a better financial fiscal position than they were four or five years ago, states and localities still face tremendous budget limitations.

And this means that the state and local governments, the universities, the regional partnerships which are at the forefront of helping to set the economic conditions, to help set the conditions for business growth, often do not have the resources to make

the critical investments at a time when the need is more urgent than ever. And I don't have to tell you this, but exacerbating the situation even further is private capital is still highly risk averse, tied up due to risk factors that permit only the strongest investment opportunities to be funded without some risk mitigation.

And just this May, a study done by the Economic Studies Group at the Brookings Institution entitled Declining Business Dynamism in the United States finds that the rate of formation of new firms has declined in every state during the past three decades. As Michael Porter and Jan Rivkin of the Harvard Business School point out in their September report entitled, An Economy Doing Half Its Job, "Businesses cannot succeed for long, while their communities languish."

So, what can communities and regions do? Well, to support job creation, business investment, increased prosperity, improved quality of life, local communities and regions need the following: Support for regionally developed transformative economic development initiatives and projects, technical and financial assistance with improved infrastructure, both hard infrastructure and softer infrastructure, but infrastructure that is linked directly to job creation and increased private sector activity and investment. And assistance in addressing these resource and

expertise gaps, and improved policy at all levels of government.

Just as capital is the lifeblood to new ventures, start-up companies, enterprising researchers and entrepreneurs, communities, regions and partnerships need that capital too. They need the capital to build capacity and to strengthen the innovation ecosystem of the region they serve. They need the capital, the technical assistance and the other resources to help create that environment and create those conditions for the entrepreneurial and business growth.

And another way to think about this particular kind of capital is investment in public goods. Now, a number of thoughtful experts, including McKinsey, Harvard Business School, MIT and BCG, among others, have pointed to the importance of investing in public goods to boost the vibrancy of regional economic ecosystems.

Just as an example, MIT's Production in the Innovation Economic Task Force states, "One objective is most urgent; rebuilding the industrial ecosystem with new capabilities that many firms of all kinds could draw on when they try to build their new ideas into products on the market." And the report goes on to state that, ". . . holes in the industrial ecosystem are the single most challenging obstacle to creating and sustaining production capabilities in the U.S. that enable innovation to

come to the market, holes that could also be described as market failures." And they concluded that, "Creating public goods in the industrial ecosystem would be the approach most likely to pay the greatest dividends to the U.S. economy, but that these are public goods that the market does not generate."

So, the federal government can play a key role in this through close partnership with states, localities and regional partnerships, helping to fill the holes in the ecosystems through the investment of patient capital in a strategic way, all the while most effectively leveraging the state and local resources, university assets, private capital and facilitating the reorientation of local economies towards productive investments in their ecosystem. We believe, at the Department of Commerce and at EDA, that we have important role to play in helping to strengthen regional ecosystems and improve the conditions for business growth.

So, how will we at Commerce and EDA continue to advance this priority? So, at Commerce and EDA, our vision is to lead the national economic development agenda by integrating and focusing economic development resources to do really three things: 1) create high growth globally competitive regions of innovation and prosperity, 2) achieve an improved return on federal investment and, 3) achieve better outcomes for our

regions and communities. And our vision is designed to improve the conditions for economic and business growth and improved quality of life by expanding the capacity of individuals, firms and communities to maximize the use of their talents and skills to support innovation, lower transaction costs and responsibly produce and trade valuable goods and services; making more communities more attractive to businesses and job growth by reducing the private investment risk and improving the business environment. Transforming regional economies through the most productive use of local resources, and again, improving economic development policy at all levels of government.

We start with the premise that the successful economic development model of today that supports innovation comprises a combination of focusing on public, private, higher education partnerships, focusing on regional economies and leveraging the regional assets to the fullest extent.

And we approach it in a very place based bottom up way investing in local people and local organizations who know their communities the best. And furthermore, our approach entails making the smart, strategic, competitive merit-based co-investments to build the capacity in regional economies.

Investments that

will help encourage those who want to take risks with the game changing new ideas and research help speed innovation to market and empower the next generation of job creators.

So, at EDA specifically, we seek to advance this model by providing investment and assistance along the continuum of local and regional needs. The ultimate goal is to help communities and regions become agile and more resilient in the face of our changing economic conditions and environments, ultimately reaching that point of lasting and sustainability.

And we do this through our broad and flexible portfolio that addresses basic infrastructure, technology infrastructure planning, partnership building, economic adjustment and other technical assistance. And just as we ask our local partners and regional partners to break down silos, collaborate more effectively and do more with less, it's only right, and certainly makes sense for the federal government to do the same.

Therefore, Commerce and EDA have been leading the charge and breaking down Washington silos to achieve efficiencies and provide more impactful assistance. In fact, since fiscal year 2010, EDA has led inter-agency efforts which have invested in more than 100 collaborative inter-agency regional innovation initiatives across the country. We're doing this

by utilizing more private public partnerships, promoting inner agency groups and collaboration across multiple federal agencies. We're doing it so that the federal government can better serve our customers and the American taxpayer.

So, along these lines, as we look to maximize the impact of our programs, we are working through at EDA our research and evaluation program to assess specific EDA programs and develop more robust performance measures, impact measures.

Starting in 2012, we've partnered with the University of North Carolina and SRI International to do a number of things, refine critical economic development definitions, build a logic model, a robust logic model for programmatic impact, identify data sources for new potential metrics and actually develop those new more robust more comprehensive performance metrics. So, in 2013 and this year, the UNC-SRI research team tested several of these new metrics and this approach, with a number of our programs, and the team presented their report to us just this past October and the results actually validate our logic model and capacity building approach and they provide insights as well about how the specific programs are fostering economic development, specifically, this third party analysis finds that even though we are in the very earliest stages of many of these initiatives, our innovation strategy regional

approach is bearing fruit and the impacts are broadly distributed.

So, for example, the report finds that just in the last year or two of our i6 program which encourages and rewards innovative groundbreaking ideas that accelerate technology commercialization, getting good ideas from the lab to the market place faster. The i6 grantees are successfully helping to strengthen the innovation and job creating capacity of their client firms. The study found that 44 percent of i6 initiatives saw expanded business, 41 percent of i6 client firms reported that technology or concepts were advanced because of their participation in the program, 35 percent of i6 client firms reported improved efficiencies and 32 percent reported results and new product development.

And for our Jobs and Innovation Accelerator Challenge Programs, also known as JIACs, SRI reported that 51 percent of our JIAC clients reported that a key industry cluster has grown as a result of the project. Thirty-five percent advanced to technology or concept, 40 reported that their projects advanced work force skills development and a quarter of the client firms reported that they developed a new or improved product.

So again, we're just in the beginning stages of this approach. But the results are promising and they suggest that our

investments are successfully building the innovative capacity and strengthening local economies, therefore, playing a critical role in enhancing regional competitiveness.

So to that end, we're excited about the launch of our new 2014-2015 Regional Innovation Strategies Program. It is a competition which focuses on that metrics and evidence based investment. And it comprises three components that I want to run through very quickly with you. First, we are launching the fourth round of our i6 Challenge. But, with this fourth round, we are broadening it to include the scaling of existing centers or programs, as well as funding for later stage commercialization centers.

The second program is our Science and Research Parks Challenge which provides funding for feasibility and planning for the construction of new or expanded science research parks, or the renovation of existing facilities.

And finally, we have our Cluster Grant for Seed Funds Challenge, providing funding for technical assistance to support feasibility, planning, formation or launch of cluster-based seed funds that are offered to innovation-based, growth oriented start-up companies in exchange for equity. And I am excited to report that we have received more than two hundred fifty applications for this challenge which came from forty-four states, plus Puerto Rico, totaling

more than \$100-million in funding requested. And equally impressive, or perhaps even more impressive, are the matching funds put up by these applicants, also about \$100-million. It sends a clear message that these, or certainly is a clear message, that these sorts of funding opportunities are in high demand and invaluable to communities and we will be announcing the winners early next year.

I want to talk a minute just about our tools because that's important, the tools that we develop and disseminate to practitioners and policy makers so that they can make the more informed economic development decisions. And one such tool that we are especially proud of, that I think may have been talked about this morning already, is our U.S. cluster mapping and registry tool developed through our partnership with Michael Porter and the Harvard Business School's Institute for Strategy and Competitiveness.

This new tool will strengthen U.S. competitiveness and regional competitiveness by advancing and making more accessible our understanding of the economic performance of clusters and regions across the United States. Policy-makers, economic development practitioners, businesses and other stakeholders can use this powerful data tool to capitalize more effectively on their regional assets in order to drive more effective regional

economic development and better outcomes.

And critically important, it's not just a static data set, we have an extensive organization registry which will help connect the policy makers, practitioners and businesses with the organizations that are working on or promoting the clusters. So, through this user-contributed repository of cluster initiatives, studies, news reports and other data, the tool allows users to share and discuss best practices and economic development policy and innovation. So, if you haven't already, I encourage you all to visit clustermapping.us for more information and to register the good work that you are doing.

And finally, I want to let you know about an additional program that we have launched at Commerce and EDA to help insure that our communities and regions have the work forces they need to compete.

When Commerce Secretary Pritzker travelled the country, when she first started, the number one thing she heard and this will come as no surprise is the biggest challenge for us is workforce; business leaders, community leaders, number one. Because the availability of a skilled workforce is cited as the primary factor considered by businesses in all of their decisions, but certainly in their investment decision process.

So last month, Secretary Pritzker officially

announced the industry-led Regional Partnerships for Talent Development. And I would like to say that for the first time ever workforce development, skills development is a priority at the U.S. Department of Commerce. It may be surprising to hear that it wasn't a priority before, but now under Secretary Pritzker, workforce development and skills development is a priority as part of our strategic plan and she is working closely with our other federal agencies, state partners and local partners on moving this forward.

On this specific new effort on the industry-led regional partnerships for talent development, EDA is the lead and we are currently accepting applications for a national partner to help develop and implement new learning exchange, a new learning exchange program that will focus on building the critical public private partnerships to accelerate job skills development in our country. The learning exchanges created through this initiative will identify, promote and expand on successful industry driven regional partnerships for talent development. Because by supporting and encouraging such partnerships, we'll help build regional pools of workers with the skills that are in demand by employers leading to job creation and increased business investment.

The federal funding opportunity is currently

open. The deadline for proposals is January 9th of next year. If you would like more information, please visit eda.gov and go to the federal funding opportunity section where you can find all the information and again, please talk to EDA staff who are here with us today.

So, in closing, I want to say just a few words about your efforts here in this region. You know it is evident that you are making great strides and assembling a strong team and your coordinated efforts already underway to advance regional competitiveness are impressive. By focusing on green growth, innovation, human capital, transportation and logistics, you are capitalizing on your key regional strengths to insure success.

EDA has been proud to partner with you in establishing the OECD territory review of the tri-state region which notably was the first to be conducted in the United States. And we are also proud of our work with the University of Wisconsin and their partners to move the recommendations made in the OECD report to move those recommendations forward. Through this relationship, EDA has invested to help the multi-state region begin to implement some of these key recommendations, defining clear criteria for selecting transformative projects within each focus area, identifying and convening the qualified individuals for the working teams to develop the

strategic action plans for each focus area.

Developing the charters to connect each working team and the management team and executing a strategic process for each team to develop their strategic action plan with specific outcomes, success metrics, initiatives with milestones, action steps with responsible parties, time tables and funding sources. Our work together is helping to develop a deeper shared understanding of the region's innovation ecosystems, including the key challenges and opportunities and crucially, the work is focused on using that better understanding to develop those common goals for action.

At the end of the day it is about understanding and identifying and really delving into the clusters that represent the best potential for innovation driven growth in the region and effectively capitalizing on them. So, big thanks to you for your work, your commitment and engagement.

I'll say it again, the work that you are doing, the work that we are doing together is more important now than ever. And I challenge you to keep working together to keep collaborating and to keep your focus on this region's sustainable competitiveness. We at Commerce and EDA look forward to

supporting you. It's been an honor and a pleasure to be with you this morning. Thank you very much.

MR. BOYLE: So, thank you Matt. Matt had offered to take questions for a little bit here, but we are already well behind schedule. So, I think what we are going to need to do is to take an abbreviated break here, maybe a ten minute break. Please come back at 11:00, I'll ask people to become allies with Mayor Dickert in diplomatically reconvening us again when we need to. And, we'll get started again at 11:00. Thanks.

Federal Reserve Bank of Chicago
Summit on Regional Competitiveness
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Working Team Presentation: Human Capital

JEREMIAH P. BOYLE: All right, I know people can hear the chimes to come back to their seats and if you have conversations going that you need to finish, if I could ask you to take those conversations outside the room. And for those of you outside the room if you've refilled your coffee, if you could come on back in. We'll go ahead and get started with our Human Capital panel.

It's my pleasure to introduce Carmel Ruffolo who is the Director of Corporate Engagement and Regional Development, and Director of the Wisconsin Center for Commercialization Resources at the University of Wisconsin-Milwaukee, and University of Wisconsin-Parkside, and Alliance Wisconsin Operational Chair and moderator. So you'll note from her Wisconsin accent how deeply engaged she is in Wisconsin.

So Dr. Ruffolo was integrally engaged with the OECD's Tri-State Territorial Review and served as a Wisconsin delegate to the OECD, and now serves as the Wisconsin Operational Chair

for the Alliance for Regional Development. She remains actively involved in tri-state initiatives in Wisconsin, Illinois and Indiana focusing on manufacturing and workforce development. Dr. Ruffolo is the Director of Corporate Engagement and Regional Development at the University of Wisconsin-Milwaukee and the University of Wisconsin-Parkside. Currently Dr. Ruffolo is also the Director of the Wisconsin Center for Commercialization Resources, a joint collaboration with Marquette University, Milwaukee School of Engineering, UW-Milwaukee, UW-Parkside and UW-Whitewater that is supported by the Economic Development Administration. She also works closely with regional companies, universities and other organizations such as the Water Council and the Midwest Energy Research Consortium. Dr. Ruffolo . . .

CARMEL RUFFOLO: Thank you. Well, hello everyone and I can still say good morning, so good morning. I want to welcome you on behalf of the Alliance Management Team. I'm the first one up here from the team and I really do bring their well wishes and thank you very much for all of you to not only be here today but also there is a number of you that have actually participated in the teams. So I really do want to thank you all for being here and for making this a reality. There are some of us in the room that actually went to Paris together to deliver that OECD report. I think we've come a

long way. We all knew that this was going to be a heavy lift. It really is heavy let me assure you, for us on the Management Team. But I think we all have that vision of the ability for all of us to work together as a region and that those borders are starting to diminish. So I want to thank you for coming. I also want to say, you know I am from the university arena but I do have to really mention our partners here in all of this and that is Purdue University, Ed Morrison and his team. I really do have to thank him and Purdue for all their support. Like also, UW-Parkside, especially with all the support that Chancellor Ford has given us, and then also UW-Milwaukee and I've got Dr. Garman and Dr. White here as well. Also I have to say thank you to EDA at both regionally and also at the federal level. I do have to thank you for all the support that you have given us.

So today I'm here to talk about workforce development only briefly because you don't really want to hear from me. You want to hear from the team. And this is our Human Capital Team and they have done an exceptional job. I remember the first time they all got together and it was such an energy in the room. And today you'll be able to hear what they've been able to achieve.

So before I do that though there are two people that I really do want to single out and say thank you to because they really

did help us as we moved forward. And the first person I want to say thank you to on behalf of the team and also -- the Human Capital Team, but also the Alliance Management Team is Reggie Newson who is Wisconsin's Secretary of Workforce Development. Thank you so very much for all your help and support, very much. It really is very rare to find a secretary of workforce development to be so engaged and Reggie, we're so proud for you to be our leader in Wisconsin, so thank you. And then the other person I want to say thank you to is Jay Rowell. Jay is the Director of the Illinois Department of Employment Security, and Jay was also instrumental in the work that has come about here with the Human Capital Team, so thank you.

So I was really fortunate to be working with some really powerful women and I really do thank these three wonderful women who were able to pull this Human Capital Team together. We had Linda Woloshansky from Indiana and unfortunately Linda is not here because she's also got the "bug" but Linda is the President and CEO of Center for Workforce Innovation in Indiana. But we do have two of our leaders here and I tell you, I would go into battle with these guys, let me assure you. And I usually pulled them into battle myself when I'm going into battle. And we have here Debbie Davidson who was the lead for Wisconsin and Debbie is the Vice President of

Workforce Development at Gateway Technical College. And then we also have Rena Cotsones who is the Associate Vice President for Engagement and Innovation Partnerships at NIU (Northern Illinois University). So you will be hearing from them in a minute but I just have to say just a few words.

First of all Assistant Secretary Erskine really, I mean what an opening when he said you know, one of the biggest challenges to the economy today is the workforce. And we certainly knew that going in there. I think everyone on our team knew that from the get-go. Just with that basis alone you're going to hear something very interesting today.

When we looked at the OECD report and when we really saw what they had to say about human capital and workforce development I think it was probably the most scathing chapter, at least I felt so when you have a look at that report. And it did point out some of the inadequate systems that we have and some of the other things that are lacking within the region. And we know that and we have, I guess, recognized that and to some degree acknowledge that there is somethings lacking in the workforce development area. But we also knew, and the report also knew, that we do have some assets and our workforce in of itself is actually an asset. And so one of the things that we'll be talking to

you about is that asset that we really do have and that is the workforce itself.

So without further ado I really do want to now introduce to you Debbie Davidson but I also want you to keep in mind the logo or the slogan that we are trying to get out there today, and that is Working Fast Together. So Debbie . . .

DEBORAH DAVIDSON: Okay. Good morning everybody. I couldn't agree more, Carmel. I think that lead-in was wonderful and what I was planning to say is that the popular phrase, "show me the money," has turned into "show me the people." So as we talk with economic development organizations across our tri-state area that's the one thing we're hearing. It's no longer just about tax credits and things like that. It's about where's the workforce.

So we had a committee of about twenty-four people, a great cross-section, and as the Innovation Team said this morning, the cross-section and the cross-scale of working together with workforce development, education and industry around a common topic both at the state, local and regional level was really a great opportunity for us. And we got to work with some of our old friends and we met a lot of new friends, and that network just keeps growing. So we are a force to be reckoned with.

Okay, so Carmel said we started with the OECD report, the key findings there around human capital, and none of these are very small tasks for us to undertake. So we took a look at those findings and as we looked at implementing strategies that respond effectively, address business needs at all levels, work across those community and state boundaries, streamline the processes and programming, and improve the data gathering and information sharing capacity. So a pretty tall order to fill and we were just twenty-four people and we just had a little under two years to make this happen.

So when we first came together we started with a great brainstorming session and it was very interesting to learn the best practices that each of those committee members brought to the table. Not only their own best practices but what did they know was happening within their region, or within their state, or within their community that they felt was worthy of us taking a look at as a possible starting point.

So each one of those were -- it was an excellent sharing and learning session for us and we created a matrix of best practices. So we have more work to do. We targeted and honed in on one particular area but we all know there are lots and lots of areas for us to chip away at.

So we talked about how do we put those findings into action? One of the things that came out of that report was, articulate the Midwest as a center of excellence for workforce. Well, all Midwesterner humility aside, I don't think that we cheer for ourselves often enough and say we've got the best workforce here. We know on either coast they are quick to say they've got the most fabulous workforce around. We are a little bit more humble about that and I think we really need to do a better job of making that known to people.

Collaborative branding of the region's workforce capability. So we need to do this branding so that new businesses know who we are as we're trying to recruit those businesses. What are the capabilities that we have? And then not only the new businesses because often times as we talk about recruitment of new businesses we don't want to leave behind the good businesses and partners that we already have in the region. So retaining and expanding those by letting our existing employers know what assistance is available.

Changing that image and perception of workforce development. We are responsive. We are nimble. We are agile. Do we have a ways to go? Absolutely, but we also have some great attributes at this time and we're from all skill levels and professions. Some people hear the word workforce development and they're thinking entry level, low skill, no skill.

They're not thinking about the professional level. But we have something for all of those ranges. Also, we have changed as much as business has changed. So if you think of workforce development or education from twenty years ago we look as different as the business partners who have changed over those last twenty years.

Communicating the process. How do the employers find those employees? So how do we communicate the process in a way that's common across the region with a unified message? So we looked at those best practices as I said. And we looked at a model that was working and each state was doing it, probably calling it something different. Well actually we were all calling it something different, right? So how do we take a look at job fairs or what traditionally has been known as a job fair and how do we turn that into an event, a hiring event where we're actually matching the skills of the individuals to the skills that are needed. How do we create a skills bank, a brain bank if you will? And how do we put an event together where that matchmaking happens? Where things happen behind the scenes before the event so that the event ends up with an individual walking out with a job offer. So how do -- and then how do we diffuse that innovation? All three states agreed to use the same approach for hiring events. We agreed to a common structure, a common

terminology, a common process. And then how do we enhance and streamline that process to help match those employers to the job seekers?

And now I'm going to turn it over to Rena for you.

RENA COTSONES: So we have all this cool stuff going on. How do we make sure that everybody knows about it and who are the people that we want to communicate this to? The people we want to communicate it to are the employers. We chose in kind of our first round of communications to communicate to the people who are already in our tri-state region, the employers who are already there. I think often times when people talk about economic development they focus on the recruitment aspect and you know, let's bring somebody new to town. And we really wanted to make sure that the employers who are already in the region understood that workforce development that was already here is excellent and the workforce development infrastructure that is in place is also excellent.

It was a great learning experience for all of us, as Debbie said, because we had a chance to learn from the top workforce development people who are in the room talking with us and educating all of us about the practices that they have. And we wanted to help businesses understand that the workforce development agencies, the state agencies, the local and

regional agencies are really businesses' partners in making sure that they have the right workforce. And as we've heard several times already today, workforce is a primary concern for businesses and glad to hear that it's becoming a top priority for EDA strategy. So first of all the message, tri-state region has an excellent workforce. We've got a great workforce development infrastructure. And a great workforce means business, growth and success.

So as I said, phase one in terms of audience, is employers within our region. We have shot a lot of video at various events throughout the three states. And so phase two, as we continue to move on in 2015 will be developing messages and tools that we can create for site selectors and employers outside of the region.

So let's talk about creating the message. We have been thrilled sitting at our table this morning and to see Working Fast Together being used throughout as messaging for the entire Alliance. This was something actually that we came up with at Wingspread, and that was such an inspirational setting. It was terrific for us all to be working together and thinking through. By that time we already had our project in place and we were refining it and we said, we really need to be able to have a quick way of talking about what it is that we're doing here. So in the room we came up with this

concept of Working Fast Together.

Working, of course because we're talking about putting people to work. We talking about making your companies work by having an adequate workforce. Fast, we wanted to be able to really have people focusing on the idea of nimble, responsive, agile, workforce development infrastructure. And then Together, we're all in this together and the idea of doing a collaborative branding. Many of you know in your own companies and your own agencies even getting a message right within your own agency or your own company can be a challenge. So to say that we're going to brand something together we think, as has been intimated earlier, is a heavy lift, but is something that we embraced. And so we came up with, and actually have to give kudos to one of our video production people at NIU, coming up with this logo. I said, at some point we have to see all these three states coming together. So he came up with this logo and put the lake there because that's also a unifying factor as we all have lakefront, and Working Fast Together really became the slogan. And we got so excited about this at Wingspread we went out and said, you know, you can use this with the other teams. Let's innovate fast together and let's move products fast together and let's do green growth fast together. And so glad to hear it being used otherwise because

we think that it certainly does have relevance in other sectors.

So lights, camera action. We decided that we wanted to put together a tool that economic development agencies, economic development practitioners could use as they're working within the tri-state region; working with companies to try and help them expand and make sure that they're retaining them within the region.

So these hiring events that Debbie mentioned were happening throughout the three states. So we sent video production crews, and thank you to the Wisconsin Department of Workforce Development, Purdue University, and NIU, we sent crews out to these events and we interviewed employers and job seekers. We learned about what the process was of the matchmaking that was going on. It was very exciting to be talking with people onsite who were saying, I just got a job offer. And you know, that's what it's all about so, happy job seeker, happy employer. And we wanted to demonstrate the effectiveness of this hiring model and actually show it and not just tell about it, and again, demonstrate the collaborative branding.

And we were very pleased to have so much involvement by a number of people throughout the three states are making sure that we had everything that we would need to put together a video. And of course, we're talking about shooting all

kinds of different things. We have different camera people and if any of you have put together these types of things, we ended up at the end with kind of apples, oranges, rutabaga, cumquats. You know, they kind of didn't all naturally go together but we worked it out. And the great news is that we have lots of material that we can use for subsequent productions.

So with no further ado and assuming everything is going to go as planned here, we present the video.

(Video played)

MS. COTSONES: Thank you. We're very proud of this work product and as I said, it's phase one of several phases to come. So how do we get this tool into the right hands? We are putting this out through economic development organizations, regional, local, also municipalities with workforce agencies. This afternoon an email is going out to a database that we put together through this process of people throughout these three states that will include this and really help people understand that we consider it a tool that they can use to help in their expansion and retention efforts with companies.

So of course we want to ensure that the message is right, that this is a tool that is helpful and so we are going to give it a little while to be kind of out in the marketplace.

We're going to survey the groups to determine whether the message is right. Whether this is a tool that is valuable. We will compile and analyze and distribute those results and then determine the next steps to see about what we need to do to make sure that phase two of our project makes it even more effective and more helpful for economic development and for businesses.

So Debbie will have a few final comments.

MS. DAVIDSON: Thanks Rena. So assessment, right? How did we do? Did we work across county and state boundaries? Yes, we did. Did we address business needs at all levels? We're making inroads in that area. As you can see from the hiring event there were professionals there. There were mid-level managers. There were lower-skilled positions. It doesn't make any difference. Implement strategies that respond effectively. Streamline the process and programming. There will always be continuous improvement in this process. But we think the fact that we came together and were able to produce something together makes it easier for us to work together in the future. And improving that data gathering and information sharing capacity is really something that's through -- each of the state's workforce development agencies were able to do that much more rapidly.

So I want to acknowledge our team. I want to make sure that if you were on our team, if you want to just raise your hand or stand up. I want to make sure everybody that's here stand up. We couldn't have done this without the team. And then one last announcement, if you are interested in more about workforce and human capital, this card is at your table which talks about an event, Future Focus - Preparing for Workforce 2020, which will be held February 19th right here. So a little commercial announcement for you. Thank you everybody.

MR. BOYLE: So it looks like we have about three or four minutes for questions if there are any. You could raise or hands or if you've put some questions on cards, wave those cards and we'll come and pick them up.

Q: Hi, this is more of a comment. I actually wanted to ask it of the assistant secretary, but we ran short on time. I think it fits in with the broader theme of Human Capital. The assistant secretary laid out two macro-trends. I think that there's a third one though that's missing from the conversation and that is the issue of income and wealth inequality and its huge growth in the last thirty years in this country. I'm not speaking of this from a moral perspective as much from the standpoint of our enlightened self-economic interests because the huge,

huge cost -- social and economic cost of that cannot be overstated. And a lot of this has been brought to the attention by Thomas Piketty in his landmark work on income and growth in inequality and not just in the U.S. but in other countries.

But then Joseph Stiglitz, Nobel economist of some repute, said that this is fundamentally -- puts our democracy and our economic system at risk. We've talked a lot about OECD and of course they do territorial reviews but they do a lot of other things including measuring social and economic mobility. And this country for years and years, and years was always at the very -- number one in terms of the probability that whatever rung you were born into you would have a chance of moving up one or two rungs.

We now find this country way towards the bottom in terms of the developed countries in terms of the lack of economic and social mobility. And then the Fed Secretary, Janet Yellen, has made a huge issue of this in recent years -- or recent weeks with several major addresses. So, that needs to be factored into this conversation. I think it's -- the human capital aspect is one way of thinking about this. There's more to it than human capital. But as my colleague -- former colleague at Purdue, Ed Morrison, had a great one-liner and that is, "Workforce development begins at the moment

of conception." And that's right. And we need to get this whole issue of human capital, economic and social mobility on the table a lot more than it is right now.

MS. COTSONES: Well that would make for a very interesting video -- workforce development, moment of conception.

MS. RUFFOLO: I think I'll stay out of that one.

Q: First of all, I want to thank the working group for the outstanding work and effort that you put forth. Just a couple of comments. There are two things as far as the new reauthorization of the Workforce Innovation and Opportunity Act that's replacing the old act. First is the regional and state unified plans and I think it's an opportunity for the work group to look at a regional unified plan between the three states around workforce and developing human capital in the (inaudible 0:28:41.19) workforce delivery space.

And secondly, it provides more flexibility for the designation of workforce investment areas. I know that's going to be one of the issues that I'm assuming that we'll be able to talk about. Does it make sense for the regional entities in the three states to look at a super workforce designation area? That's more up to the policymakers of the individual states and the governors to look at, but I know that's something that we're going to be

talking about in Wisconsin that we need to look at that in terms of pulling that together. So I just wanted to make those comments and I think there's an opportunity with the reauthorization to look at this type of thing to create more of a collaborative, cohesive partnership in the workforce delivery space.

MR. BOYLE: And so one more question then. This is the last one.

Q: Hi, George Stone from Milwaukee Area Technical College. We've talked a lot about workforce development but very little about education which feeds into that. Can you give some comments or recommendations regarding the education of the skilled workforce that we're going to need? In Wisconsin we have a marvelous technical college system in addition to the University of Wisconsin system. Our great universities provide the research. Our technical college provides the skilled workforce. We have a lot of challenges and needs. Would you care to comment or make any recommendations in that regard, please?

MS. DAVIDSON: Well, I'll take that on as a fellow Wisconsinite. Workforce development to me includes education. I would say at least half of the individuals that were on this Human Capital committee were from the education sector both two-year and four-year. And so certainly you

can't separate one from the other. And as we work -- as I work with different companies and we look at that skill level it ranges anywhere from a course, a certificate, a degree, a diploma you know, and different levels of degrees. So I think of education as part of workforce development and not something that can be separated. I don't know if that answers your question or not.

But as we're looking at these hiring events it's also an opportunity for us to tell individuals if you are not getting matched up -- your skill set is not matching up with the openings that are out there, then education is your key to make you more marketable and to put you into that position. So it provides an opportunity for a conversation that we might not have if it was strictly a job fair where somebody went there, dropped off a resume and then thinks that employer doesn't want me instead of there's something I need to change in myself and I need to upgrade my skills in order to get that next job.

Q: You and I know that. So do the other educators in the room but I hadn't heard the word education all morning. I've heard workforce development a lot. And the needs of our educational institutions in order to provide the workforce

are really crucial, and important, and need to be brought to the front.

MS. DAVIDSON: Absolutely agree. Thank you.

MR. BOYLE: And unfortunately that will have to be the last word for the Human Capital group. If could thank the Human Capital group.

Federal Reserve Bank of Chicago
Summit on Regional Competitiveness
December 19, 2014

Working Team Presentation: Transportation & Logistics

JEREMIAH P. BOYLE: If I could go ahead and invite the Transportation & Logistics panel to please come on up. Mike Mullen who is the Alliance's Illinois Chair is one of many leaders and speakers who is a victim of this particularly nasty strain of flu that's been going around so he's not able to join us this morning. He was to moderate this panel. So Kelly O'Brien will be standing in for Mike Mullen and I will go ahead and turn this over to Kelly to get this panel started as soon as we get everybody seated.

KELLY O'BRIEN: Well good morning everybody. And not only were we very disappointed that poor Mike Mullen is infected, but we actually have two members of this panel that for health issues could not be here. So replacing Ken Yunker, we have Christopher Hiebert. And I just again apologize on both Ken and Mike's behalf. I know that they are very committed to the work that we're doing and very disappointed that they can't be here.

But saying that, Mike did ask me to remind everybody that the Milwaukee-Chicago-Gary corridor is the nation's premiere transportation and logistics hub and a major continent-wide player in air travel, air cargo, railways and trucking. These hub functions generate considerable employment and value-added activity through strong linkages with other sectors in the region. However, our region also faces serious challenges including states' constraints, congestion, financing issues and transportation assets that are poorly integrated across state lines. He has been following the work of this team with great interest. And I too am very proud of the accomplishments of this team.

One thing I have to share with you is that this team, and as you've heard already this morning we've had several meetings and phone calls, and there have been people that maybe were involved once or maybe were involved every single time, and it's part of creating a network that it's just part of what happens. But this particular team, we had representatives from all three states' Department of Transportation, from all three planning agencies, from Northwestern University Transportation Center, from the University of Illinois Transportation Center, and the private sector. I mean what a group of talent. And when these folks got together I was amazed to learn that a map of the region's

transportation infrastructure did not exist. That everything was disjointed. And so collectively sharing data the planning agencies went to work to share everything from the railroads, and the highways, and the airports, and the ports, and the pipelines, and the trails and Purdue took this information and created the tool that's going to be showcased today.

So I am very, very proud of the work of this team and I'm very excited to introduce our panel. We have the Honorable Jerry Bennett who is the Chairman of the Chicago Metropolitan Agency for Planning, CMAP. I also have to say he's the Mayor of Palos Hills and not that long ago I was an alderman in the City of Palos Hills and it was a true honor to work with this man. And so Jerry, thank you so much for being here.

We again, as I mentioned, have in replace of Ken Yunker, we have Chris Hiebert and on behalf of NIRPC we have Ty Warner. And again I do want to shout out that NIRPC did take the lead with the three planning agencies and put in countless hours to produce what you're going to see shortly.

And then Chenn Zhou, Dr. Chenn Zhou from Purdue Calumet, the CIVS, will be talking about the role of the universities. And we could not have done this without the support of Purdue, Dr. Zhou, her staff, especially Doreen who's here with us today and again I -- Sara and Gabby. There's just so many

people unfortunately I can't mention everybody. But all I can say is that this team is certainly comprised of superstars. Following Ty Warner we are going to hear from Mayor Dickert from Racine, Wisconsin. And as Carmel mentioned earlier, there are several people here today that have been involved with this project from the beginning and traveled to Paris to present to the OECD and Mayor Dickert was one of those folks. So again it's really nice to see the commitment over so many years.

And then we're going to conclude with Jim Ford from Clayco. Jim is a business partner of Mike Mullen's and has provided a very relevant and needed perspective from the business sector.

So without any further ado, let me hand this off to Mayor Bennett. Thank you.

GERALD BENNETT: Thank you, Kelly or alderman, former alderman. Ladies and gentlemen it is certainly my pleasure to be here this morning as Chairman of the Chicago Metropolitan Agency on Planning. We are an agency that's now an award-winning agency, nationally recognized and also certainly within the metropolitan area, for the work that's been done. We were created back in 2010. We took two, a planning agency and a transportation agency, put them under one roof and it was a lot of work. But more importantly we

represent the seven counties, 284 municipalities and eight million people. And to bring politically that body together under one roof to do something that hasn't been done since the Burnham Plan of Chicago back in 1909, was to create a master plan for the Chicago metropolitan region, of which we are very proud.

And in listening to some of the speakers it's not only putting it down, it's getting results. And we think right off the bat, CMAP was very successful. We received a grant from the Department of Housing and Urban Development for \$3.5 million dollars and we took that money and put it right into exactly what the GO TO 2040 plan is all about on livable communities, human capital, efficiency in government, and regional mobility.

That \$3.5 million dollars was put directly into the hands of local city officials, mayors, and city council people to plan their future. To rethink their future about how they can sustain themselves going forward in the 21st century. And we've had incredible results. We have literally had zoning plans rewritten across this entire Chicago metropolitan area to look at the things that this organization talks about and whether it's workforce development, whether it's quality of life issues, and certainly in the areas of transportation. We are proud of what has taken place in just a short period of time.

We also released a master plan, at least a short-term master plan, on capital projects. We identified five capital projects in the metropolitan area, four of which happen to be involved with the Illinois Tollway Authority in improving and reconstruction, and adding onto that system. Within one year after we released our recommendations for a capital plan, the tollway authority underwent a \$12 billion dollar capital plan to do exactly what we talked about.

The fifth one is right in the works now. In fact it's the linkage now of Route 53 all the way up to the Wisconsin border.

We understand the importance of regional mobility. We understand that planning takes place only with partners; that no city's an island, no county's an island, and certainly no state's an island certainly in the metropolitan region, the tri-state region. And CMAP worked immediately with the OECD report in coming up with some indicators to help them identify where we're going in the future. In fact in reading that plan it almost kind of mirrors what we're very proud of, our GO TO 2040 plan, and how the region should work.

The areas of freight which is critical for the tri-state region. I had the opportunity last year to testify before Congress. Somebody said earlier, show me the money. We need to be shown the money. And we believe -- in fact the

transportation director for the State of Wisconsin spoke also at that hearing before Congress. Because we need to bring capital into this metropolitan area to move freight. It is critical for the mobility of our region, both Wisconsin and certainly Indiana. In fact the Director of Transportation spoke and mirrored exactly my comments that we are the hub of the nation as far as freight transportation and we need capital investment for that to take place. We continue to work as an agency to see that happen.

Recently we announced an action plan and that's Show Me the Money Again. Our metropolitan region can no longer depend on -- we all know it -- fed and state dollars. It's gotta come locally. So we have launched a fund, GO TO 2040 idea in concept and that's to work through the Regional Transportation Authority in trying to create a 25-cent increase in the regional RTA tax to help us do things more than just transportation, on open lands, on areas of workforce development, on areas of economic development, but putting money directly as collected right into the hands of local communities.

We're very proud of the work that's been done so far. I'm kind of limited to my comments. I could go on for a long time about what we think -- we believe we're doing at CMAP. And we are cutting edge. We have staff that has done multiple

reports including some recaps on the OECD study that was done on indicators. You can go to our website at cmapillinois.gov and download those reports because they all are cutting edge as to not only identifying what's happening in our region but indicating how people have improved their local communities or the counties, but more importantly where we're going to go in the future. CMAP stands ready to work with our partners in northeast Indiana and Wisconsin, and again driving this region to be a sustainable one and one that we believe is a world class metropolitan area that we all can be proud of and hopefully someday say that we are -- we are the best in the U.S. So thank you very much.

CHRISTOPHER HIEBERT: Thank you. For over fifty years the Southeastern Wisconsin Regional Planning Commission has been conducting comprehensive planning in the seven counties in the southeastern Wisconsin region, consisting of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington and Waukesha counties. Over the years the Southeastern Wisconsin Regional Planning Commission has worked closely with the Chicago Metropolitan Agency for Planning and its predecessor agencies, the Chicago Area Transportation Study and the Northeastern Illinois Planning Commission, to identify potential infrastructure needs and coordinate regional plan recommendations between our regions and across the state

lines. Of course we do this within our region, between our municipalities and counties, and between our region and other regions within the State of Wisconsin.

But over the years we've seen that plan recommendations which cross governmental boundaries, in particular those recommendations that cross the state line, have lagged in implementation. These have occurred for various reasons such as the differing priorities of the various units of government and levels of government necessarily involved.

One such project was the connection to Metra's Union Pacific North Line which would have extended Chicago-based commuter rail service to the cities of Racine and Milwaukee in southeastern Wisconsin. Hopefully this multi-state alliance for regional development effort and the tool being developed to identify the transportation assets and deficiencies across state lines in this multi-state region will help close this gap between implementation and plan recommendations, and improve the connectivity amongst all our regions within this area. Thanks.

TY WARNER: Thanks, Christopher. If you look back at the 2012 territorial review from the OECD you'll see that recommendations riddle all through there rely heavily on MPOs, on Metropolitan Planning Organizations, as entities that can help carry on that cross-state regional

collaboration. The MPOs, which you may not be aware of, have signed an accord some time ago, the Wingspread Accord, which involved first Wisconsin, and Illinois, and Indiana, and then I think in 2008 or so added southwestern Michigan. So there's a great partnership already and a spirit of collaboration among those three states, among those MPOs.

But what the Alliance project did and what we were able to do with this particular tool is to actually put some hard practical application to that collaboration and move forward together in doing that. That tool brought those states together in collaboration. As Kelly said our staff at NIRPC, Sarah Geinosky, Scott Weber, Gabrielle Biciunas worked really hard with the other three MPOs to help bring this data and create that sharing to be able to level it and create the tool that's been created now.

But it also not only had the collaboration among three states, it also provided an opportunity to collaborate with universities, particularly the Purdue Center for Innovation through Visualization and Simulation and also the Purdue Center for Regional Development. Contrary to the comment that was made earlier this morning about slave labor, these students right here did this with great passion and great energy to put this together. I think they didn't do it under any duress whatsoever. Just what I saw of the evidence that

they put into this was outstanding. And so their energy I think really bodes well for the future of this entire mega-region.

Why I think this is particularly groundbreaking, you're going to see the tool very soon. You're going to see it demoed. But there are some things here that really haven't been done yet in this region that I think you're going to find particularly exciting, at least we do. First of all is the evidence of that data sharing among the three states and the leveling of that data. You'll see some examples of smoothing that cross-state information. Erasing those lines that really don't mean anything to the market across states. You'll see being able to share land use data and have that detailed land use data of what's exactly over the state lines when somebody's looking to locate in the region or try to find out what kind of assets and infrastructure is in place to locate in the region.

So just in a nutshell, this is of particular relevance not just to as a planning exercise -- we're not going to make exercise -- but we think this has some real legitimate applicability to the development community as well. This is working in partnership with the public and the private sector to help provide the best data that we have to be able to inform those decisions that can help make this a globally

competitive region both in identifying gaps in the regional infrastructure, but also in being able to sell the regional infrastructure and help build upon the fluidity of that infrastructure throughout the cross-state region. So I think you're going to like what you see.

I'm going to turn over to Chenn who is going to talk about the process of developing that tool.

CHENN ZHOU: Thank you. Good morning. First of all, good morning. First of all, I would like to say it's my honor to speak on behalf of all my academic colleagues to talk about a very important topic, the role of the university. Specifically I would like talk about two points.

The first one is how the university applied research can benefit education -- that's the keyword, education -- and the economic development. The second point is why the collaboration between industry, community, government and university for education is so important. So let me tell you two quick stories to elaborate on these two points.

The first story is, a few years ago there was an engineering student whose name is Tom and he actually was a top student in his high school but almost quit in his freshman year. Fortunately he was doing research at our Center for Innovation through Visualization and Simulation, which we call CIVS at Purdue University-Calumet, very close by in Hammond. So it

was the applied research that kept him going and kept him engaged, and finished his degree successfully.

One of his projects he worked on together with other five students was a flow plan, you know air duct, in a power plant at NIPSCO, a local power company. So what Tom and the other students did and together with NIPSCO engineers they applied computational fluid dynamics to find out what is wrong, why it's wrong and apply the solution that has saved \$1.9 million dollars per year within a very short time. Actually we got our answer within two months but then there was a lot of consideration for validating data. So everything was done within six months. So through such hands-on experience Tom and the other teammates learned great practical problem-solving skills and produced impactful research. So this is the kind of experience we can give the students for better education and better workforce, and also have direct economic impact.

The second story is about our project. You already heard about that. Let me just say my perspective. So our team was very ambitious and wanted to do this interactive map. So as you know, the GIS data normally was managed by organizations within individual states. Because of different data format and other issues it is very difficult to merge dataset to share them. Therefore it's hard to make decisions for the

regional development people to have a comprehensive look of the GIS information across states especially for the information like transportation, intrastate transportation. Through the phenomena of collaboration and teamwork, and the interactive video -- you will see that soon -- the map that was created included the data from northwest Indiana, and northeast Illinois, and south Wisconsin.

So how this was done and who did this? Well, I have to be very proud to say our students made the map but of course we cannot -- it is impossible for them to do it alone. So we had two great groups. One was the working group led by Doreen. Stand up please. The working group had three undergraduate students, Phillip, Conrad, and Rick.

And we also had a great advisory supporting group -- that's my name, I named that -- and this group included many people. I just wanted to name a few. Kelly, yes of course, Kelly, Sarah from NIRPC. She came to our center almost every week, sometimes after working hours; sit down with students, mentor them, closely work with them, and our Mayor John, and of course also the Purdue Center for Regional Development. These two groups worked very closely together. So we get done within three months and through the again, a senior design project by undergraduate students.

So this is really a typical win-win partnership. From the academic side we have great, talented faculty and students but we need more technical know-how and more practical guidance. We need the data to work on. From the industry side you have great technical and practical knowledge but need more, better technologies and more skilled workforce. So by the more close interaction, the faster and better innovative solutions we can get. So therefore we can Work Fast Together, okay.

So let's give our whole group, whole team another big round of applause. I want to thank EDA and thank everyone, thank you.

JOHN DICKERT: Well, isn't this exciting? My name is John Dickert. I'm the Mayor of Racine, Wisconsin, home of the best tasting water in the country. Sorry Kelly. Had to do an ad. A couple of years ago when we were in Paris we walked out and -- the report finalized -- realized something very quickly that in the transportation sector if we were going to truly do what we wanted to do and as some of us mayors know, you gotta get things done, we recognized the fact that the study was showing 20 million more people were going to be in the Chicago metro-land area by 2050. So then when you look at the transportation mechanism and you already see congestion in rail, air, roads definitely, we said well how

are we going to do this? How are we going to create a platform for this system in 2050 if we don't know first of all what assets we have, number one. And number two, what that system looks like. And if we were going to great guys like Mike Mullen, and Jim, and some of these guys to build this new economy with all these incredibly smart people, and all these universities, and education, how are we going to do that?

Well the first thing you're going to do is you're going to take away the borders. Now, is that easy for elected officials? No. Is it easy for thought leaders? No. Is it easy for competitors? No. So we have to take down the borders.

So our job was really to create this platform and then the next stage really after these young men and women had done all this work -- and by the way, they will be looking for jobs so that's my next editorial and advertisement, hire these kids -- we have to figure out now the next phase will be to set up the platform for the future. And then introduce that to those thought leaders and those elected officials whether in Congress, presidential candidates, whatever the case is.

But to do it in a way that is unlike how we've done it in the past which is to say all the bets are off. We're not going to patch up the mess

that we have. We're going to create the plan and design it for 2050 with open doors, open minds, no boxes.

So do we have to take a road back to put rail on? Well, back in the '50s we took rail to put roads on. Do we have to create something that these young people, 23 percent of which don't even want a car more or less a license, to work with? How are we going to handle 20 million more people and all the productivity and ingenuity that is coming out of these people here today?

So that's what we're looking forward to doing and is that going to be difficult? Yes. Do we have to do it? Absolutely. Why? Because we can't compete on a global level which is what we're doing. We can't compete on a global level if we are still working with 1950s technology and transportation. We can't do it. So do we have to say to O'Hare airport, you're going to be for people? We're going to move people through O'Hare. We're going to move product through Gary, Indiana. Oh my Lord! We can't do that! Well, yes we can. And maybe we have to because no one can be everything for everyone, but we can be really good at being good at everything collectively.

So what we did was we put together this project and this platform which these young people, smarter than I am, did. And to tell you the truth there's nothing like this. So let's roll it. And what I'm going to do is I'm going to talk

through this a little bit while we're going through it because I hate to read stuff that you're looking at.

So what we did was -- the first thing we did was showed that when you're looking at this thing from a couple miles above earth this is a big transportation network that is really quite congested when it comes into Chicago. But our platform is not only taking rail, we're layering on roads, barge traffic, bike paths, everything into that twenty-one-county area. And this, we're taking the borders away from. What is the program that we're going to utilize and what is the information that we're going to utilize? So what these young folks did with our team was we collected data from all over. Looked at it from different ways, satellite imagery all the way down, layer after layer after layer. And then they started pulling out the data sources that we wanted. What do we need to look at? We need to look at all of it 'cause it collectively works together. And we started putting all this together.

Now how are we going to utilize this? Well, we're going to utilize it to look at different systems. Because the first thing that we have to do is we have to figure out whether it's our airports or our roads, what's working and what's not working? The first thing that you have to agree upon is if you're doing it right. And we have to be willing to accept

that fact that maybe we're not doing it right. And when you start looking at all those airports right now it looks a little congested. And it is because our whole system is congested.

So if we're looking at our airlines, we're looking at our freight rail, we're looking at the way the land uses around those areas we can use that to determine how we're going to move forward.

For instance, does high speed rail take away 19 flights between Milwaukee and Chicago every day? Yes. Does that help in congestion, and cost, and economic viability? Absolutely. Can we look at those land use areas? Yes. Can it make it more obvious for cities to do comprehensive planning regionally as we're looking? Absolutely. But this also allows us to look at our sources that we have in our cities to determine possible opportunities.

They've also got a great little idea here where they can take this little circle, drop it down there and then tell you what the land uses in that area according to commercial, residential, park districts. They can also cross borders. And I will tell you this is one of the most difficult things that we have right now. The city or the states have different types of analysis when it comes to even land use. So these are borders we have to break down.

They also allow us to look at potential opportunities for the future. If we wanted to do a project in the tri-state area -- and this one just happens go up my way -- can we do it? What are the objectives? What are the opportunities? What are the barriers to doing this? It allows us to start assessing the future before we get there so we can start planning collectively together to make that happen because it will work better for all of us.

There's the great City of Racine. You can come up anytime you want, spend your money. We'd love to have you up. What we're doing -- we have done a comprehensive land use plan for the City of Racine. Why? Because everything that we're doing will work according to the regional and our tri-state plan. This allows you to look at things from a different level. Whether you want to look at it from a GIS map and take a clear look at it or look at it from the map -- the zoning map.

What they have done is they have allowed us to prepare. Even if you're talking around airports. This allows developers and allows cities and regions to look at what's going on. You could also track who are the owners on these properties in case you want to start contacting them and having the conversations with them whether you're a mayor or you're a regional planner to see hey, maybe we should talk to these

folks about some project planning that we're doing going forward.

This is the biggest issue, population density. So imagine what we're looking at right now of population density and add 20 million more people to that area. Here's what I'm going to ask you to think about. If there's 20 million more people in this area and we don't have a good system, we're not able to compete. We're not able to provide the young people the quality of life that they need. We're not really doing what we need to do to prepare for our children's future.

But here's probably the most important point. Economically we're wasting money because if we're not creating viability between the regions we are wasting money because we're doing patchwork transportation right now. So the question is, are you willing to give up a road to put a freight rail in? Are you willing to give up the air travel between Milwaukee and Chicago, or Milwaukee and Indianapolis to take a 20-minute train ride? What are we willing to do?

With this group I don't think the answer is difficult. The difficulty is in talking to the electeds at the state and federal level and getting them to understand that not only are we going to create a plan, which is our next step, to create the plan but then to pass it

because it's the most cost-effective, efficient way to allow us to compete in the next century. That's our goal.

So we have some work to do. We know that, but we are preparing for it and I want to give these young men and women here who have helped our team do this, and I'd like to ask the team to stand real quickly, give them the chance to do that. So everybody's who's worked on this transportation plan stand up. Come on. I know we've got some folks in the back. Thank you.

I will leave you with this. I always think about what I'm going to tell my kids when they ask when they're older, so dad, what did you do? And we have to be able to look back and tell them that we did that to make your future better and brighter. If we can do that and get the elected officials to agree, then we will be on our way. But if we don't, how do we compete because the OECD told us, you have to.

So thank you for your time. Appreciate it and appreciate the transportation group's hard work.

JIM FORD: So what does ultimately this model mean in a practical sense? And as I was preparing some thoughts and notes last night, kind of mulling over different directions to take with a short, brief concept here, really putting it to practical use. Just like Dr. Chenn, I live life through stories and stories are very important to all that I've heard

today. I've heard a lot of different points today overall. And in my career, my profession now in being involved with the real estate world and construction world and looking at different criteria of site selection and location, locale in general, a lot of things have dawned on me. And one being, Martin my buddy with City of Gary in the back there, who leaned over to me as a question was asked about education. And he said, "Jim, you know when I was in school, GIS," -- which is mapping and what he does as a profession -- "there was no degree in it." And Martin's a young guy, trust me. Right, Martin? So we'll keep that in mind.

And as I look back to the late '80s when I was starting undergrad work and I swear -- Kelly can attest to this -- that she did not know that I went to Purdue as well so it's not an infomercial for Purdue. But when I was trying to figure out what I wanted to do in life in general I always thought I'd follow in my father's footsteps. And my father, my grandfather, my uncles, many relatives were all involved in the transportation industry, trucking, rail, those type of things. And a buddy of mine who was a freshman at the time had said, "I want a degree in logistics."

And I was thinking, what do you mean? I wanted to be in the restaurant/hotel business so that's actually what attracted me to Purdue

originally was a great hotel and restaurant management program. But my thoughts changed really quick because we started talking about all these different topics of manufacturing and offshore and all these things that we're contending with. And over twenty-five years now of evolution what that all means to me. And I thought about degrees and I thought about all the different things that I as a student should be pursuing and probably in all honesty if it wasn't for the fact that my father, my grandfather and my uncles before me were involved in the transportation world of logistics, I probably would be running a restaurant today. But you know keeping that in mind, keeping that frame in general and concept of what ultimately this model means to all of us and our daily beings, is that I was also recently reminded -- when I was at a transportation conference in Kansas City that the Journal of Commerce put on -- and a real estate broker, which is really what I predominantly do for a living, who I'd known for twenty-some years came over to me. He happened to be at this conference and now a major emphasis in industrial or distribution, those types real estate practices, is absolutely transportation, the movement of goods and freight in multi-modes, not only this containerization, this inner modalism, but also freight in general, waterway of course. And we have it in the great

resource of Lake Michigan in bulk freight and those type of things. But this broker I'd done a deal with literally twenty-some years ago said to me, "Jim, isn't it crazy to think that twenty years ago if we were an industrial broker or involved with industrial real estate all we cared about is finding a site for our client that was probably, hopefully environmentally clean and probably was really just the most affordable or best deal in the marketplace for twenty acres or thirty, whatever they were looking for.

There wasn't a lot of emphasis on really all these other things now that the site selection world goes through. And there are literally specialists in the site selection world that focus on all of these things we're talking about now, education and those options and those alternatives in general. The quality of living, all these things that have been discussed today in general. So it's -- my message is you know, it's become much more of a broader topic than just about in the model and what the tool's creating. It's just about available property out there, or it's clean or it's the most affordable deal in general. So when I look in really what the site selection criteria is and how this tool is different and unique from something that I've never seen again in the marketplace, we start at the development and planning stage, and get a general criteria of the

important aspects of a company looking to locate.

And you start with really the infrastructure which is a baseline in the model, as the Mayor said you know, roadway and highway, and rail, and water, and pipeline, and all the things that might be involved, highway connectors, types of facilities that you could load or unload either your raw goods or your finished products from. And it evolves into really a business strategy and getting an operating cost. And where this model is unique is because of the fact, as the Mayor said, there are many other factors that you can layer into this with population, and in the academic areas, and worlds and word training and those type things that are coming from school-wise. So it is unique from something that I've never seen before that's not strictly just involved in a true GIS-type system that's looking towards just site selection. It really encompasses all of the different things that we've talked about this morning from innovation to quality of life and all the things that are involved. And I think as the tool that evolves even further from where it is today you're going to see something that could really be widely used to benefit the region in general.

And my closing thoughts once again is I wish we all had a crystal ball and listened to comments like Martin's in

realizing where my life's gone and my career in general. I do agree that the education system in the evolution is critical to the success of the region and obviously we know with the tri-state region in general here that if we continue to work on these initiatives together as a team that success will be had. So, thank you.

MR. BOYLE: So with that I'd like to thank this panel and ask them to go ahead and exit stage left. I know we didn't leave enough time for any Q&A here but over lunch we will have working lunches when people will be able to get together with all of these panelists in these breakout sessions and have a little bit more discussion. So again, thank you panel.

Federal Reserve Bank of Chicago
Summit on Regional Competitiveness
December 19, 2014

Second Keynote - William Tompson

JEREMIAH P. BOYLE: I'll go ahead and introduce our keynote speaker who is coming to us from Paris. He's on his way up. William Tompson is head of the Urban Development Program and the OECD's Public Governance and Territorial Development Directorate. He's the author of numerous books, articles and book chapters on Soviet and post-Soviet politics and economic policy. Since 2010 he has led a number of OECD studies of regional and urban development including *Investing Together: Working Effectively across Levels of Government* and national territorial reviews of Slovenia and Ukraine.

He was the editor of the OECD's recent *Making Reform Happen* and, together with Dr. Julie Newton, of *Institutions, Ideas and Leadership in Russian Politics*. He has also worked as an advisor to the Select Committee on Foreign Affairs of the British House of Commons and I'm sure that with his remarks we'll be left both hungry for lunch and for the

working sessions that will happen during lunch. So with that --

WILLIAM TOMPSON: Thank you very much. I'm very happy to be here. Thank you for the introduction and thank you, Kelly, for the invitation. Two quick points before I get down to business. One is simply that this isn't actually Paris business chic. This is me waiting for my luggage which doesn't seem to travel as fast as I do this week. I understand it's now in Texas but it hasn't actually been sighted by reliable witnesses yet. The second point is that although I'm presenting OECD work here I am speaking in a personal capacity so if I go off the OECD message at some point you can't hold our member governments responsible for what I say. I usually go off message if there isn't a high probability of being reported back in Paris.

Now I had prepared far too many slides. They're not on the screen which I think is -- oh, actually I think it's great that they're not on the screen. Leave this here. I hope these will be circulated to all the participants. There's some fun graphics. There are far too many of them and some of them are just there for fun. When you look at some of our data, for example for comparison to the U.S., I threw out a slide from Germany mainly because you can see East and West Germany very distinctly 25 years on. Things like that.

But what the presentation is about and bearing in mind that I'm that last thing standing between a hungry crowd and its food, is not about Chicago really but it's about a lot of work we've been doing on cities and metropolitan governance though, I think is quite relevant here. I take it as given that nobody in this room knows less about Chicago than I do in spite of the fact that I was involved in the review that came out in 2012. And so I want to focus on the work we've been doing since that really resonates. Lots of the themes that came up in Chicago have really been looming large.

And the first point is that we've been doing a lot of work on what makes cities rich, on productivity of cities. And the point about this is there's huge literature on this but we finally, after years of work, in 2012 were able to launch a metropolitan database which includes 270 large metropolitan areas across the OECD area. The 270 with population of 500,000 or more. So Chicago is very much in there. The point is that it's the first time we've been able to look at cities on a common functional definition across more than thirty countries because, although you're familiar with the concept here of the metropolitan statistical area, most OECD members have no such thing.

Statistics all conform to administrative units which means that even with income trees, if you're comparing cities you

may not be talking about the same thing at all. Because for example in Italy I happen to know the city of Bologna largely sits functionally within its boundaries, very comfortable match there. The city of Venice bears no resemblance as a functional economy to the municipality of Venice, which is just a small part. So using that we have started to explore the determinants of productivity of cities and of growth, and of other issues. And also we've started looking at governance.

In parallel with assembling this database, which by the way is online. Look for the OECD Metropolitan Explorer. You can play with it. It's an interactive tool online, maps, data, the works on 270 metros.

The second thing we did was we realized that nobody has systematic evidence about how these places are governed. So we put in place a Metropolitan Governance Survey. The data from the first round is relatively thin but in a world where nobody has data, even thin data's a big step forward. And we're now doing a second round to deepen it to understand to what extent the governance of these functional urban economies is fragmented, coordinated, unified. How do they work? And what's the relationship between how they work and their performance in terms of environmental, economic, social outcomes?

Very relevant for Chicago because as some of you will recall when we totted it up we came to the conclusion that there were 1,700 governments in the tri-state Chicagoland area. That's including all your municipalities, your counties, your states, the feds, but also all those special purpose governments, right, school districts, water boards. Anybody who can take money away from you and send you to jail if you don't pay up, even if you don't want to buy the product, counts. Seventeen hundred, if memory serves.

So we got to working on this. What do we find and what does it suggest for you guys here in Chicago? First of all surprise, surprise -- and this is clear from the literature as well -- bigger cities are more productive. They don't grow faster but there is a strong and very monotonic relationship between city size and productivity. And there's two things at work there. One is just a selection affect. Overwhelmingly the most productive firms, higher human capital individuals are very often drawn to large cities because of the opportunities they offer, either amenities and consumption opportunities or productive opportunities.

But the second thing is what we call the pure agglomeration affect. Because what you find is when that agglomeration takes place you get the interaction among people and firms adds to it. High productivity people, high human capital

individuals become even more productive in the presence of lots of other highly productive individuals. Factor -- labor markets are deeper so you have better matching. You have more interactions and so we find the pure agglomeration affect. Every time a city doubles in size is worth between two and five percent on productivity.

Now you say, hey, Chicago is not going to double in size. But it tells you something about the productivity advantage of an existing large city versus a much smaller town holding other things equal. It also tells you what's happening in places that are urbanizing fast.

I was in Hefei in China, in Anhui Province, earlier this year. It has doubled in size four times in my lifetime. This is a city that had 500,000 people when I was born and I won't tell you quite how old I am. I'm still on the right side of fifty. It now has seven and a half million. So in places like that you see these effects at work dramatically.

Now the hitch is, it's not guaranteed. If just getting people together were all it took to make this happen then refugee camps would be the most productive places on the planet. For it to work a number of other things have to work. The first is who's coming to the city and who's there? And that's where human capital does matter.

We find in early stages of

industrialization and development and still in many developing countries a lot of industrialization dynamics are key because there's a lot of learning by doing as industrial takeoff occurs. In more developed and mature economies it's the quality of the human capital that above all determines the agglomeration dynamics. So that is I think one crucial takeaway for you.

A second is the importance of internal connectivity. The thickness of your labor markets, their depth, their efficiency depends on how people can get around. And we've had some pretty rough things to say about internal connectivity in Chicago, as you know. It's a paradox. This is globally one of the best-connected places on the planet and it is a huge logistics hub but internally it can be hard to get around. And that has big implications for how labor markets work in particular.

If you look at the slides later, and I hope you will, there's a couple of maps of Sydney that illustrate this. I don't have the same maps for Chicago. This was done in Australia. They look like they're population density maps but they're almost the inverse of that. What they show you for the City of Sydney is if you live in a particular place what percentage of the jobs in Greater Sydney can you reach within forty-five minutes driving time, or one hour of public transport. Yeah,

if someone wants to run ahead to Sydney, you'll see what it means.

There are about two million jobs in the Sydney area but of course the darkest place, the best-connected for labor market purposes, if you look population density is the least densely populated because it's the central business district. Basically 75 to 80 percent of the inhabitants of Sydney live in labor markets of 200 to 400 thousand, not two million. And that is because Sydney is very poorly connected internally.

Two other findings about what makes cities rich that I think are important. One is proximity. We do find that the connectivity of large cities to other large cities, they can lift one another. Connecting up cities doesn't generate the same level of agglomeration affect you get in a dense labor market, but it really does have a lift affect. So that connectivity among cities in a large city region is very important.

The third point that comes out of this, and I'm speeding up a bit, is that cities do lift their hinterlands. The spread effects of growth from large cities -- from a city of 2 million people stretches -- you can measure statistically significant lift effects to about five hours driving time. I want to say 300 kilometers, but we don't use that Commie

metric system here do we? A hundred, say 170-180 miles. I've been abroad too long. I've slightly gone metric and it's troubling to me. If I have to watch Olympic weight-lifting in kilos, you know what did we win the cold war for?

The second big strand that's really important is governance. We look at governance fragmentation and what we find is that again, holding other things equal including economic structure and labor force kind of skills capacities, more fragmented metropolitan areas grow more slowly. They are less productive. They are more likely to experience urban sprawl and they are much more likely to have low levels of public satisfaction with public transport.

And all of that in a sense makes sense because -- and this is why it's great that CMAP was here -- the crucial connection, and we focus a lot on a study that will be released in February on this very issue, is the need in particular -- whatever else you do or don't coordinate -- to have transport and land use planning coordinated with one another and coordinated across jurisdictional boundaries. I could stay here until suppertime telling you crazy stories of the stuff I have seen on the ground in places where this doesn't happen. And you have dense high rise developments sitting just over the line from the rice paddies because development control is so completely uncoordinated, for example, around Bangkok.

So that fragmentation is an issue that's the first point that comes out and it comes out quite strongly in the data that we've gathered. The second though is that we do find a growing trend across the OECD to greater metropolitan coordination. Most of the time this isn't about mergers and most of the time mergers are not necessary. The point is not to redraw all of our administrative boundaries to fit our functional boundaries because the functional boundaries change every day and they depend on the function anyway.

So it's not about adding yet more layers of government. It's not about merging municipalities and destroying local identities. It is about devising mechanisms and institutions that are effective in providing coordination. And we find some clear regularities there. The larger the city, the larger the functional urban area, the more likely it is to have such an institution. Over time since 2000 we find that in the bigger cities it becomes clear that they are more likely to be more powerful as well. There's clearly a greater need there. And everybody's doing it by the way.

When you're competing, Chicago, and you're working on these issues, remember all of your rivals are working on these issues as well. There has been an extraordinary wave of metropolitan governance reforms and a growth of interest in this. First in the good years before the crisis, driven by

cities that were trying to turn themselves around and benefit from what then seemed to be good economic times.

Since the crisis, often driven by also fiscal pressures and some kind of desire to reignite growth. The core areas we find them working in, economic development, land use, transport planning, lots of other stuff besides, but those are central. And certainly I want to suggest that labor markets which we've also discussed have to be a crucial part of that picture.

Most of the regions I've worked in, the policymakers obsess about higher education. I'm not against higher education. I have quite a few years of it myself. You never go wrong investing in human capital. In some context the returns may be better than others but I'm generally in favor. Somebody once asked me, if you were dropped into a place and you didn't know anything about it what would you be wanting to know about? And that would be my first question.

Having said that, what we find is that the focus on higher education often leads to a kind of neglect of the middle and lower ends of the skills distribution and these have to be dealt with at a regional or local scale. Super qualified individuals as you all know are highly mobile. Further down the workforce tends to be less mobile and yet the presence or absence of their skills can be crucial to determining whether

you attract the firms that bring the really high caliber individuals and the high productivity employment. Because to employ a highly skilled individual you often need lots of other people who may be less skilled but who have to have certain important skills.

We're at half-past. I don't think I've eaten up the twenty minutes that in theory I had but we're getting near to lunch. So I want to leave you with that and also if you don't look at anything else on the slides, to encourage you to have a look at the very last one. It's simple. It looks like common sense but it reflects our kind of -- not that last one, this last one -- an ultimate slide -- which is just looking at the way in which metropolitan arrangements are evolved and what we need. And I think here you guys, from what I'm hearing this morning, are on the right lines.

But as much as this seems to be common sense, it merits reflection because many of our common sense messages at the OECD are derived from the fact that we study places where they're not being applied often because they're difficult not because people are stupid. But because as we all know, in political life and in policy, simple common sense can sometimes be the most difficult thing to do.

But the crucial message coming out of that is that you're on the right lines coming from all these different places. It

is not -- well Detroit is a great example of what happens when the city is at war with its neighbors, right. Lots of places I've been, that local conflict and competition, fighting each other for small gains rather than realizing you needed the collaborating to compete on a much bigger scale. And I think it was Ben Franklin who said at the Continental Congress but it's true of major metros, "We must all hang together or we will assuredly all hang separately."

So I wish you great success the rest of the day and in your endeavors to help the kind of larger Chicagoland region hang together. Thanks very much.

MR. BOYLE: Thanks very much, Bill, not only for the remarks but being the most observant about the time yet today.

Federal Reserve Bank of Chicago
Summit on Regional Competitiveness
December 19, 2014

Introduction to Strategic Doing Session

SCOTT HUTCHESON: Hello. Hello. All right, hopefully you've found a table with a conversation topic that you are interested in. So, I'm Scott Hutcheson from the Purdue Center for Regional Development. Ed Morrison, some of you in the room know Ed and you've certainly heard his name a number of times today, sends his regrets. But he's been watching the webcast so we can wave at Ed and he'll see us throughout the day.

So we're going to have some tabletop conversations and I wanted to give you a little bit of background and explain how this is going to work.

I'm going to take you back first though to another waterfront community. This one is not the greater Chicago area but a rural community in Arkansas. And they were facing a couple of similar issues that we're talking about here.

One was transportation and logistics. So in this rural community in Arkansas, they were along the White River, and

this is going back over a hundred years to the era of my great grandfather, Sid Hutcheson. Sid owned a mercantile on this riverfront community and also had a cotton gin and it was a long way to either side of the river to find a bridge to get across of it. But across the river was the majority of the population and the route to market for his cotton. So he faced a transportation and logistics challenge. So what he did is he got together with one of his friends and they built a ferry across the White River, able to bring people over to shop at their stores and they were able to get their product to market sooner.

That was an economic development project that unfolded a lot differently than the kind that we're talking about today. They didn't ask permission. They didn't need a permit. They just built a ferry.

The other story from my family is one of a human capital story. This rural community also faced a skills shortage and this skill shortage happened to be in health care. There were no doctors and no dentists. And as far as it was to either of those bridges, it was even further to the nearest doctors and dentists. So my great grandfather and one of his buddies struck a deal. They said one of us will send a son to medical school, the other will send a son to dental school,

and they will come back here and practice. So that's what my granddad did. He drew the straw for dental school.

So that's how communities took care of their human capital challenges and their transportation and logistics challenges a hundred years ago. Well we know it's a much more complex prospect that it is now.

Over the years we've adopted tools to help us manage the complexity of economic development and strategic planning was one of those tools. But there's something interesting about strategic planning. It was born in a command and control environment. It was born in industry and military. Command and control doesn't fit within economic development.

So that's why we've developed Strategic Doing as an alternative for communities and regions to take strategic action in an environment where no one can tell anyone else what to do, and that's especially true with a vast complex region like this 21-county Chicago tri-state area. So Strategic Doing helps guide these collaborative networks towards some very measurable results and they're able to make adjustments along the way.

So we've applied Strategic Doing in the work of this organization in trying out what we call some Pathfinder projects. And you've heard reports of those Pathfinder projects this morning. So we've heard about our four

different focus area groups, the working teams, and some of the collaborative projects that they have started to launch. So there are a couple of fundamental things about Strategic Doing that we're going to see represented in our discussion today. First of all, Strategic Doing harnesses the power of a network and a network has a very solid core but it also has porous boundaries. So we are giving you an opportunity to come into that porous boundary and join one of these networks. So that we hope that you are either already involved or you are interested in becoming involved in one of these four areas. So we're going to build our network today.

The other thing that's important about Strategic Doing is our opportunities emerge when we link and leverage our assets. So you are going to have an opportunity to tell us what assets you have that you could share within this network. And then we also think about Pathfinder projects. We learn how to collaborate by collaborating, by doing something. That's why we focus on doing not just planning. So you've seen examples of that where students and elected officials and others have worked together on a terrific platform and we've seen lots of different examples of that.

So we're going to ask you to do a couple of things. We're going to ask you to reflect on the Pathfinder projects you've seen so far and provide some advice on what might be next

when it comes to those particular Pathfinder projects. But we're also going to let you open it up and think about, all right, what other Pathfinder projects or initiatives might be appropriate within these focus areas. So at your tables there should be a collection of green sheets that look like this. We'd like everyone to have one of these and this will help kind of guide your conversation. So in a few minutes I'm going to say "go" and I'd like you to do several things and I'm gonna kind of walk you through there.

First of all we'll want to collect these so please do your best to put valuable information on it and write as legibly as you can. And I'll ask you to just leave them at your tables and someone will come around to pick them up.

So the first thing we want you to do is to check off which of the topic areas you are discussing at your table and then give us some initial feedback on the work that you heard in our four different presentations from the working groups. So we want you to give us input on two criteria. From what you heard, what's likely to be the impact that this work would have on the region and then how easy would it be to implement it or take it to the next level? So you can do that independently and then move into your discussion.

So I'll ask you to reflect on the key points that you heard in the presentation that aligns with your topic area and

address two questions. What do you think this group should be doing next and then reflect on what other Pathfinder projects or new initiatives might be appropriate within your particular focus area?

We'll give you about ten minutes to have that discussion and then I'll urge you to move on to the next. And this is again, it's kind of a personal question, your assets. What assets do you have that you are willing to contribute to making headway for the region in these particular areas? And when I say "assets" that could be your skills, your knowledge, your experiences, the networks that you have access to, the things that you're willing to contribute. And then hopefully if you are willing to contribute you will let us know that by giving us your name and your email address.

So again, we're going to take about a half an hour for this conversation so we can get back into on time in our agenda.

So first thing I'd like you to do is give us that impact and ease of implementation feedback and then launch into your tabletop discussion reflecting on what you heard today. What advice you would give these groups as next steps, and then any additional projects that make sense for this particular focus area.

Rena, Peggy, myself and perhaps Carmen will be floating around the room if needed to see if you're on-track and make sure

that you're capturing all that great conversation that you're having that you're getting it on paper. So continue your conversation and I'll give you some time markers so you know where you stand over the next half hour or so.

Thank you.

(tabletop discussions)

MR. HUTCHESON: So let me leave you with this challenge. At the bottom of your green sheet we're asking you, "Do you want to contribute?" Do you want to play in the sandbox? Really all we're asking is, would you be willing to give one hour a month in joining one of these collaborations? And I hope that you're willing to do that. Those that have been doing work on these working teams I think will tell you that it's some of the most rewarding work that they've been doing. So if we -- to paraphrase one of our great Purdue graduates, one small step for each of us could end up being a large leap for the region.

So please finish up your forms, wrap up your conversations and then we'll get to the next keynote.

Federal Reserve Bank of Chicago
Summit on Regional Competitiveness
December 19, 2014

Third Keynote - "Midwest Manufacturing Renaissance: The Importance and the Way"

NICHOLAS PINCHUK: I don't think I like the podium 'cause I don't have any notes anyway. Um, look, I'm, as billed, gonna talk about manufacturing renaissance in the Midwest. It's important. And manufacturing has been the basis of this country's success since it was founded. It's never been more important than it is today.

I'm gonna talk about the way to implement that renaissance and it has to do with upskilling the American workforce, encouraging that workforce and supporting it. This is the seminal issue of our time. Believe it. And business and government and education have important roles to play in this and there's no better place to do it than this area, this tri-state area. This has been the center of American manufacturing since almost the beginning and it will be again.

I'm from Snap-On. Snap-on's an interesting company. It was founded in 1920, which is about 95 years ago now and it was founded on interesting concepts I think. Innovation; the first tool was really innovative. Every one was high quality. You pick up a Snap-on tool today you will believe it's true. But it was founded on something that's even more important. It was founded on the respect and dignity for work. And that echoes down through this period. And over those nine decades we've grown from that sort of Milwaukee-based company, which now is in Kenosha to a company that does business in 130 countries around the world and has 28 factories, eight of which are in the United States.

You probably know Snap-on from the 3476 vans that ride around the U.S. And we have a great business model, a tremendously broad product line that's delivered flexibly to customers in solving their problems. 65,000 SKUs but 80 percent of what's sold off those vans is manufactured in America. And a hand tool is 50 percent labor. Check how much a television is labor. Or a cell phone. A hand tool is 50 percent labor. Yet

we're able to do this because we take advantage based on complexity of product line and flexibility of delivery of the one inalienable advantage American manufacturers have and that is a capable workforce and proximity to the world's

greatest market. Manufacturing is possible in the U.S. and especially in the Midwest and Snap-on is a great example.

It's good workin' for Snap-on actually. It's a lot of fun, you know. You go into buildings, you check in down here at the security guard and the security guard will say, "Snap-on. You guys make great stuff." I'm not kiddin', you know. Okay, it serves some ups and downs.

So I'm in Washington -- Washington of course, that puzzle palace of a town that's on the Potomac, and I'm there at the -- an association -- I guess the National Association of Manufacturers. And I'm sitting at a breakfast that has a speaker from the Administration and sitting next to me is a young woman from the National Association of Manufacturers. She looks to be about -- between 30 and 35 and she leans over and she says, "Snap-on. What is it your company does?" And I go, "Well, Snap-on Tools, you know" and I tell her, I proceed to tell her about how we were founded on innovation and quality and the respect for dignity of work and she says -- if it's possible for a 30-year-old to give a patronizing look to someone my age, she's doin' it.

Now I'm gettin' mad, you know, right? I'm not so happy about this. She's dissin' me right here. At that moment, a 50'ish woman leans across the table and says, "Snap-on. Oh, my family idolizes your product." And this is Hilda Solis,

the Secretary of Labor of these United States and she is the speaker. I left that room in triumph.

And then six months later I was at this event and I feel a little tug on my sleeve and it's this young woman next to me and she says, "Mr. Pinchuk, can I have your card?" and I said, "Sure, but why?" She said, "I went home and told my father that I had met the president of Snap-on Tools and I didn't know what Snap-on Tools was and he told me that he was ashamed of me." It's a true story, so there's some ups and downs.

We do business in a 130 countries around the world and I'm here to tell you that even today, United States is the greatest society in the history of this planet. There is no question. If you ask yourself this, you'll see it. Now we have out problems and so on, but this is the greatest country in history and you ask yourself, how did this occur?

Well, you don't have to look further than -- read David Landes and *The Wealth and Poverty of Nations*, who attempts to explain why U.S. was ascendant among all countries in the New World, and what he said was, we knew how to make things. A more contemporary historian, Paul Kennedy from Yale talked about the engineers of victory and the fact that our industrial base was here, allowed us to be successful in the great World War II.

And if you want more visceral and smaller examples, you can take the example of Ms. Rose Hillman Rowe, who came out of the hills of Kentucky and worked in a factory in Willow Run, Michigan and learned how to build combat aircraft and became known as Rosie the Riveter. And she and her sisters created the industrial base that allowed us to win the one war that we could not afford to lose.

This is what created America. It was created on the idea of the brilliance of a few, like Henry Ford or Thomas Edison or the guy who founded our company, Joe Johnson.

Henry Ford -- think about him. He had an idea but he couldn't have done anything, he couldn't have brought that idea to fruition without what I would call commercial amplifiers. And he chose the greatest commercial amplifier of its day; that was the American workforce.

Dedicated, energetic, committed. And together they founded the U.S. auto industry. And he got rich; he should have. It's a great idea but along the way he gave the opportunity for millions upon millions of Americans to build lives of prosperity and dignity and satisfaction. And that story played out from sea to shining sea. It created the very republic which we hold so dear.

Manufacturing. The National Association of Manufacturers says that, you know, 1.48 jobs are produced for

every manufacturing job or created for every manufacturing job. The Germans say four to five. This is what created America and the great middle class. But anybody wanna read the paper? We have our challenges today. New York Times says, the Federal Reserve -- this very building, the Federal Reserve says, mmm, the economy still needs help. That was in The New York Times yesterday.

The Wall Street Journal says, middle class workers devalued. And my personal favorite, The Washington Post says, the middle class lost in space. My answer to all of these is, no kidding, Sherlock. And the reason is 30 percent of manufacturing jobs have disappeared in the last 20 years.

I understand people asked if workforce development in manufacturing had anything to do with income gap. Yeah, sure. You see America didn't become the America we believe in because we made our money on the velocity of money. We didn't create our prosperity on the velocity of money or tulips as they did in 1637 in the Netherlands. Maybe we're gettin' more dependent on that today. So instead of building things we're trading companies and a few people make money and the great middle does not.

So what's wrong? Where's Henry Ford? Where's this great virtual cycle which created the America, you know, the

brilliance of the few and the efforts of the many comin' together to create the auto industries, the electronics industry and so on. It's the ideas. We don't have as many ideas.

Well, I don't know. You know, since 1901 there have been 889 Nobel prizes and Americans have won 39 percent of them. Thirty-nine percent, pretty cool. Next country is England, 14. That's a lot. Maybe we're fallin' off. Well, it ain't true. Since 1901 instead of 39 percent we've won 44 percent. So if anything the ideas are getting' better and if you worry about the Chinese, and I do all the time, there have been 10 Nobel prize winners of Chinese descent and the majority of them have been American citizens.

So it ain't the ideas. It's the workforce. The unions have screwed us up. And American workers no longer know how to work. Well, I don't know. When I walk through the factory in Milwaukee, Wisconsin, as I just spent a week there on the factory floor, or in Algona, Iowa, or in Crystal Lake, Illinois, where we have a distribution center, I see the same commitment and energy and dedication that I imagine Henry Ford saw all those years ago at his first Fairlane plant.

So what's the problem? Well here's the problem: when I walk the floor in Shanghai and Minsk and Belarus or Sao Paulo, I also see commitment and dedication and energy. You

see when someone has an idea and there's a competition to be the commercial amplifier for that idea, to be the manufacturer, to spread that idea, the values of that idea across the middle, other people are in the competition and the natural American advantages heretofore of dedication, commitment and energy are no longer differentiating.

So that brings me to how do we establish that again and I would say there are few things, and business and government and all of you can cooperate. First, I believe, is give our workers better capabilities. Makes sense, huh? The most capable workforce wins. This happened in 1805; it's gonna happen in 19-- and 2025. And so that has to do with training the workforce, educating the workforce. Making them fit what's needed. And I think there are a lot of things about education and so on.

But one of the things I think that business can do is to try to work with community colleges to try to make sure the curriculum matches exactly what's going on and needed in the workforce. I think Secretary Penny Pritzker of Commerce, who's a great advocate of this would say demand-driven.

And I agree with that and we in fact at Snap-on are doin' that. We have partnered with Gateway Community College and a number of other community colleges around the county in an organization

called The National Coalition of Certification Centers, NC3. And we provide certification, stackable credentials for 130 colleges around the world and tens of thousands of students have already done this.

Businesses can keep doing this. But education has to accept it too. Education isn't always that easily accepting of assistance from business and I think education has to make sure that they realize that the ultimate outcome of education is not necessarily an education; it's a career.

It's nice to be educated. It's nice that I can stand up here and say, *Arma virumque ab Troiae Roma cano* (sic), the first line of the Aeneid in Latin. Or the first line of the Iliad in Greek, which I'll spare you my pronunciation. But, but, it didn't get me a job. Made my life more interesting, but didn't get me a job. And so that's what we need in these kinds of places. So matching is one.

Secondly is celebrating. Whether you realize it or not, and you probably all realize this but I'm gonna say it again: Manufacturing and technical careers have a heck of a p.r. problem. If some young person says they want to be a welder on an assembly line, even a very complex welder, or a car mechanic or I dare say even a line foreman, they are seen to have settled for the consolation prize of our society.

You doubt this, read The Wall Street Journal, The New York Times. Of 225 names in The New York Times last Friday, only four percent had anything to do with technical careers of any kind. And The Wall Street Journal wasn't much better.

You see, if I go to Washington and I speak to a group like this or maybe if I speak to just a different group in this building and I say to them, how would you feel if your son or daughter told you they were going to be a welder or an assembly line supervisor, you would be able to hear a pin drop in the room because they know this is what other people's kids do, not theirs.

And yet these are the very jobs that have created the America we enjoy. Yet we're focused on the velocity of money. We need to restore that. We need to have our government officials and ourselves say that these jobs are not the consolation prize of America but are our national calling.

In 1961 President Kennedy got on TV and said we're going to the moon in ten years and an incredible percentage of high school children decided at that moment they would go into engineering or science because it was like enlisting in something that was important to America. I am here to tell you there is no path to prosperity in the future of America -- consistent prosperity without a manufacturing

renaissance and without making these jobs a national calling. We need to do it ourselves as business people and educators and government people, to try to act this way and we need to urge our leaders to do so. So we need to celebrate it.

And then finally we need to recognize the difference between endorsement and support. And this is for business and for government. If you listen hard to business today you will see they're not so dedicated to American manufacturing. They're very willing to move overseas because this sells well to investors.

But actually business has to remember that part of our function, yes, is to optimize the use of capital. It's also to optimize the use of the energy of the population which surrounds you. When Mitt Romney said -- I don't care if you're a Democrat or Republican -- you probably hate me after I say this, when Mitt Romney said corporations are people, he was right.

Maybe we don't act like they're people, but actually they are. And corporate leaders have to view this and say, look, it's my responsibility and I can make more money if I use this enabled workforce in American. And I wield it here in American right here in the Midwest, which is the greatest place for manufacturing. And then I will take advantage of one, this great workforce which is nearby and proximity to

the world's greatest market and I can make a lot of money at this and satisfy my stockholders. This can happen.

So corporations have to embrace this idea. The idea that they are put on this earth not only to optimize capital but also to optimize energy. And the energy is, in some ways, if you're an American company and American -- is American people.

And then government. Government needs not to just endorse but to support. If you doubt this, I'll give you a couple of stories. I can go into Congress, and I've done this many times, I walk up and down the Senate building, I can get any Senator or Congressman to say, manufacturing; Midwestern manufacturing, we're America. Yeah, well endorse it. But when push comes to shove will they actually support it?

Anybody here ever heard of Dodd-Frank? Dodd-Frank. What's Dodd-Frank there for? Does anybody know? Dodd-Frank's there to control the banks, right? Everybody agrees with this, right? Ever hear of somethin' called conflict minerals? Nobody has heard of this I'll bet, here. Conflict minerals is an element of Dodd-Frank. Conflict minerals requires manufacturing companies in America to report the amounts of gold, tantalum, tin and tungsten that are in their products that comes from central Africa. I assure you it is not a trivial exercise to do this.

Tulane University says it will cost manufacturing in America \$7 billion collectively.

Now whether you're a conflict minerals guy or not, I'm not trying to point out, but I just want to point this out to you: the very people who say manufacturing is terrific are willing to sacrifice the interest of manufacturing on the altar of one of the more obscure of causes. We need to have been support. I'm not focusing on that; I'm just offering that as an example.

So we need to have support for manufacturing from government. Government actually has to say they support manufacturing, they support it in the Midwest and they have to act like it as opposed to just say it.

Same with corporations. So that's my pitch, is it's like this: America's the greatest country in the world. It's the greatest society in the history of this planet and it has been done so not because we sell tulips or we depend on the velocity of money. It's because we know how to make things.

We have our challenges. The middle class has been devalued and some people are sayin' the middle class is lost in space. Many people say that goin' forward assure our prosperity the American worker is a question. I say that's not true. The American worker's not a question. The American worker is the answer. And the way to make them the answer is

one, to upskill them. Train them in technical capabilities that match the needs of manufacturing. Work with schools that will match exactly the curriculum to what's needed in the marketplace and get jobs comin' out.

Two, celebrate it. Take what's been the consolation prize of our society and make it a national calling and act like it in our thought, word and deed. And then three, actually, whether we're in business or government, say manufacturing's important and act like it.

For all of you, for all this work, because I think there's no better place to promote manufacturing than the Midwest in places like Indiana and Wisconsin and Illinois, it's the heartland of America. It always has been. And so have a leg up here. So I think that you've come together and for all in this task and for that, you have my admiration.

I know that it's a lot of work to do these kinds of things, to meet in these taskforce and to work on this and you have other things in your lives and so for all of that work and all of that dedication you have my gratitude.

And then for takin' the time to listen to a simple toolmaker on a message about American manufacturing and the importance of it and the fact that there's no path to the future prosperity of America without a manufacturing renaissance, especially in the Midwest, and the way to do

this is upskilling the American workforce, matching curriculum, celebrating it and actually walking the talk, for all of that, you have my thanks.

Thanks a lot. Have a good day and the rest of the conference.

Federal Reserve Bank of Chicago
Summit on Regional Competitiveness
December 19, 2014

Panel Discussion: "The UI Labs Digital Manufacturing and Design Innovation Institute (DMDII)"

JEREMIAH BOYLE: -- introduce that panel's moderator as they do come up. Gregory Hummel is the Illinois Operational Chair for the Alliance for Regional Development. He is a senior partner at the law firm Bryan Cave. He is based in Chicago, where he leads the firm's public private partnership practice. His work involves real estate development and finance as well as public and project finance.

His practice focuses on economic development and job creation activities in cities, states and other units of government both in the United States and abroad. With that, Greg.

GREG HUMMEL: Thank you very much. It's a real honor to follow a speech that we just heard. I'm passionate about manufacturing. I came from a town that was grounded in manufacturing and agriculture in northwestern Illinois. I

want to set a little context; we're missing one speaker for this panel so we have a little more time.

I was a history major and I've studied some history which I think is relevant to today's conversation. In China a thousand years ago there was an industrial revolution. The Southern Song Empire. They had a central bank and they revolutionized rice manufacturing, which led to population increase and density in cities. And they flourished.

And then they turned inward. The Southern Song dynasty was followed at some point after the Mongol intervention by the Ming Dynasty and they turned away and just about that time, the industrial revolution started to emerge -- at least the first parts of it, the Renaissance and then ultimately the Industrial Revolution in the west.

And perhaps that had a zenith in the 19th century with German chemical manufacturing. And where am I going with this? Well, the Fraunhofer Institutes that we're gonna hear about an American version a little bit later in this panel, is our attempt to regain some important ground.

There's 61 of those institutes in Germany and one of the themes that we've heard a lot about today is use everything that we have available. So that's the shareholder class, that's the management class, that's all of the laborers, that's the educational institutions, that's the think tanks,

that's the research institutes. There's a seamlessness around that.

So we take the Midwest. I submit to you it's the greatest collection of universities in America, the Big Ten. And our great private universities. And we meld them into something that can advance our agenda in the manufacturing and other realms.

And so the University of Illinois, which is a key part of UI Labs has an annual research agenda of 1 billion and a very strong heritage of supporting applied research across multiple sectors. Building upon that heritage, the University sought a new strategy to address contemporary technological challenges, improve technical workforce training and create new technical and academic business models.

A visioning effort clarified the University's goal of connecting the dots among the universities, government and the private sector to retain talent in the Midwest, support company formation and community sustainability and enhance competitiveness. This region, this 21-country region was chosen for the initiative to provide maximum visibility, interdisciplinary collaboration and potential for commercialization and transfer opportunities.

UI Labs, the initials standing for university and industry, was incorporated as a stand-alone profit -- not for profit -- in March 2013 and spent the balance of the year responding to the federal government's request for proposals to establish a national digital manufacturing design innovation institute, DMDI. A \$70-million dollar federal grant was awarded in February 2013 to launch the new institute in the former Wrigley facility on Goose Island leveraging \$250 million dollars in already committed funds from major multi-sector partners.

Let me introduce some of the people, really the key people who made that possible: Dr. Caralynn Nowinski and Dr. Larry Schook. A word about them. Dr. Nowinski is a medical doctor. She's also an entrepreneur and a venture capitalist, and I think chief among her gifts are her ability to work across multiple sectors and bring people together. She was joined in this effort by Dr. Lawrence Schook, Vice President for Research at the University of Illinois. He's a senior research officer who oversees nearly a billion dollars in a sponsored research portfolio and he oversees the economic development efforts of our great university and its three campuses.

So these two folks are going to be part of a dialogue, question and answer that I have the privilege to conduct.

I'm going to join them in just a minute. But the fact that the Midwest, with this brilliant institution and these people won that award, I have an inside story on that.

I had heard that at the time they were goin' after this, we were competing with Huntsville, Alabama and Cambridge, Massachusetts. And the GEs of the world would only bet on this team. They didn't participate in the other teams, so I think we're in for a very interesting ride.

So let me start with my first question, Dr. Schook, how did U.I. labs evolve and what's its long-term potential for regional economic development and new models for public private partnerships?

DR. LARRY SCHOOK: Thank you Greg and let me also share my appreciation to the former speaker, because I think he clearly touched on a lot and a number of the elements of why Caralynn and I are here today.

Let me just, if I can, digress a second 'cause I'll say the year of 2011 was a starting point. We had, for me, Chris Kennedy was our chair of the board. He put a call to arms up about what was the role of universities and really pushing and challenging society. As you know, the Kennedy's have a strong heritage in Boston and they saw that the universities really were pushers and the challenge to me is what are you doin about this?

And I want to say that because during that year we spent a lot of time with my colleagues at the University of Chicago and Northwestern, IIT, having dialogues about how we could work together as a community. And I just want to say it was very gratifying that we saw this as a community effort. So I just want to make sure that -- and it was based on the facts of several functions. One was how do we build the community? I want to come back 'cause I think there was a part of that in terms of community meaning how do we train people, how do we celebrate and how do we make heroes? And I think part of what we always look at is, if it's important we gotta make sure young people see that this is a career and a hero. So with that a part.

We also looked at, as Greg said, we're really good. Just ask anybody in the Big Ten and they'll say, one of us in number one in something. But we looked around globally and I think we all said, you know, we really should be doing better. We really should be doing better as a driver of economic development if we really are working together on a global perspective. So I think we all as a group and I say as a community accepted the challenge that we needed to work together better to really drive transformation.

And then the last part that came back is connecting the dots. And Caralynn and I actually met and started having a dialogue,

both having the opportunity to serve on Governor Quinn's Innovation Council and that was a theme that came out was we have great companies, we have government leaders and we have great universities but we're just somehow somethin' not right, so how do we connect the dots. And I say that 'cause that kind of drove our thinking.

So with that said, Caralynn was working at a different location at the time. I said, let's put this together, so I really appreciate that Caralynn was willing to come and work in our office and we spent, I'll say, the next year or two arduously working with both the City government, World Business Chicago, who was another great partner in this and the Governor's office.

So with that, it was really being -- the idea what we heard earlier was, we have great innovation but it was in silos so how did we -- so UI Labs was an attempt to create a separate entity that we all owned; it wasn't owned by any one sector, it wasn't owned by any one university, it was owned by our community. And so I really felt that that was an important thing and it really was about getting around innovation for the silos.

Talent, again that comes up again and talent across a spectrum. We have been really good maybe at the high tech level but we haven't been really good at the workforce and

transfer that so when I say talent, I mean talent across that spectrum. And

then access to experience and guidance. We have some very successful companies that we haven't really used as mentors in the process, so for me, those were the basis of UI Labs. It took the challenge and set it up and we're very grateful for those who believed in us and before I let Caralynn have a chance to speak, I just want to add one other thing, and that gets back to the manufacturing. We started on the manufacturing story a year before President Obama announced the call for competition. And we picked this because we believe it was who we are. This comes up in the Midwest; we picked manufacturing so we created -- Caralynn working with the Department of Commerce Economic Opportunity here in Illinois created what was called the Illinois Manufacturing Lab, which was how do we connect the problems of small and medium size companies with solutions.

So we were in that space and we felt it was a space that there was the passion was there and it was really -- culturally it was something that we could -- everybody could say yeah, we oughta be good in that, rather than tryin' to say, well, are we okay in this. But this was something that I have yet to see in the Midwest someone say, yeah, we shouldn't be good in manufacturing.

DR. CARALYNN NOWINSKI: Just building off what Larry said and also I think wherever Nick is, those comments were really spectacular because I think it really calls to -- it calls to action the government, the universities and industry and the broader community and I think that's really what we're trying to do with UI Labs and specifically with DMDII, as we call it -- the government gave us a name and now we have an acronym that sounds like we're stuttering, but so DMDII, the Digital Manufacturing and Design Innovation Institute is really about bringing all those elements together to celebrate manufacturing, to create those jobs and to take a seed grant, essentially, from the federal government, a \$70-million dollar grant to challenge industry. Will you match that and then to go to the community and the state and the local government and say, will you match that and they came through. And so now it's up to us over the next five years and then to create something that's sustainable into the five and ten years and however long after that, that really is about capturing that legacy and that opportunity for manufacturing.

MR. HUMMEL: How can the establishment of DMDI (sic) in Chicago and the construction of its headquarters on Goose Island most effectively serve as an engine for further economic development not only there, but more broadly

throughout the region and indeed the three states that we're talkin' about? How do you leverage it?

DR. NOWINSKI: So when we first thought about UI Labs, again before we even realized manufacturing was going to be the first thing we went after, we were very insistent this had to be a place; there had to be a physical place where people could go to. School kids, manufacturing executives, welders, line workers, university faculty, post-docs, you name it. There had to be a place where they could go and connect the dots together. Have a real place-based innovation process. And so the way that we look at Goose Island and what that means to the region is home court advantage for us in the Midwest.

DMDII is a national institute. We have a mandate that stretches from coast to coast. We have partners in fact, that stretch from coast to coast. We've got some designers at Oregon State University, engineers over at Rochester Institute of Technology and down at UT-Austin in Texas. So we've -- while our concentration is here in the Midwest we really do span. And so when you think about that diversity of stakeholders across such a large geography, Goose Island becomes our home and it becomes the place where all of these partners can come together, whether it's working on a project

or going to a workshop or maybe participating in some sort of event or training experience.

And so for the small and mid-size manufacturers and for our local talent, whether that's a student or an incumbent worker, they have a place that they can literally go to. When we were looking at where do we base this thing, well it's gotta be close to the vibrancy of the city and the entrepreneurial community. We looked at River North and west Loop, which is north and west of the business district and said, those would be really good places for us to be. Not exactly a place where you can set up a manufacturing shop.

And so after a little bit of trial and error we found indeed an abandoned manufacturing shop in Goose Island, not too far, you know, mile and a half or so from the central business district. Very close to the entrepreneurial vibrancy of around the Merchandise Mart and the River North area. Not too far away from Google's new home in the west Loop and wanted to find a place where we could have a place, one that you could have a manufacturing floor, a real working floor where manufacturers can come and a place that has a community draw to it and that's in a neighborhood. And it has parking. That was actually a very key thing to our decision.

DR. SCHOOK: Yeah, the parking was critical, as you can imagine and that we could actually tell people they could come and they could park there and walk.

I want to get back to a point that came up earlier about the establishment of this in Chicago as Caralynn said. This is a national institute so and one of the things that I think is important for this dialogue today is how do we make sure that as the innovations come out of this national institute in Chicago, we're able to capture them for our region, 'cause I want to come back to that.

I myself, I'm very confident that the digital manufacturing team will create unbelievable innovation but you know, at the end of the day we want to make sure that the Midwest is well positioned to take advantage of that.

And one of the other parts that I think was -- comes back to the success of our proposal was on the sustainability piece. So when we were being heavily marked on innovation and sustainability. And if you look across our, I don't know, 11 states in the Midwest, I get 'em wrong -- that were our core on our team, we were all in. And the number of companies that you know they are gonna be in Wisconsin, Indiana, Iowa, in Michigan, this region, it's in the thousands. So we had -- and we, I'll say, democratized the concept here that this wasn't about a couple of companies on

the top, which, unfortunately we had the thought leaders there, so we did have the GEs and the Proctor & Gamble and the Rolls Royces, so we did have people who at the top, but they were actually incredibly interested in making sure that the strength of our small companies here in the Midwest was preserved.

So I want to come back to the point that was made earlier about Wall Street and the big things. I have to say that the big companies that came on our team saw the value of small and medium-size companies. And they put -- they're putting a tremendous amount of resources in there, so I'm really excited that a) there's a sustainability component here that will continue to drive the Midwest and 2) that meetings like this, and we already had a number of, as Caralynn said, a training center that's physically to our advantage to be here will lead to a lot of innovation and sustainability for our communities.

DR. NOWINSKI: Can I build on one quick point --

MR. HUMMEL: Please.

DR. NOWINSKI: -- on there 'cause of course that jogged something as well. One of the things -- so we got the award at the end of February. You can imagine it took us a little while actually then get an award and then hire our team. We were officially had our first employees April 1st and we've grown the team now and since that time to about 25, so

appreciate the community's patience with us as we've kinda gotten off the ground a little bit.

But since then we've had two project calls to start engaging our partners in workshops and in responding to projects. But equally important to the projects is the outreach part, to Larry's point, so we've already been able to have some incredible visits to communities within the Midwest, have invited us there. We've spent a few days up in Rockford not all that long ago where had some great dialogue about how we might be able to leverage the aerospace cluster there.

We've headed out to the Quad Cities and talked with the companies, both the big companies and the small companies and even the Arsenal there about how we might be able to leverage that community and we are really looking forward to visiting other communities, particularly in our tri-state region because we want to be able to, like I said, you know, take advantage of that home court advantage.

And that extends beyond Goose Island, of course, to the other communities and so I would just invite those of you who are coming from different communities across the tri-state area, we'd love to come visit you. We can talk to you a little bit about how some of the folks, for example in Rockford organized an amazing visit for us. Because we'd like to have similar visits like that all

around so we can continue to develop relationships and the pipeline and the channels for how we get these innovations out.

MR. HUMMEL: That's good to know in terms of spreading it in other geographies. Let's do a deeper dive on how you integrate large companies with small and medium-size companies, particularly as it relates to R&D and then product delivery. And then also maybe workforce development. When we heard from Matthew Erskine earlier today, he cited two examples in a conversation I had with him after his remarks. One is near Richmond, being led by Rolls Royce and integrating the supply chain but dealing with product development and also workforce education.

He also mentioned Clemson, where BMW was doing the same kind of thing. So how do you take the behemoths and make them work with the small to medium-size and what are the challenges?

DR. NOWINSKI: I can sort of talk a little bit about projects and maybe you can talk a little bit about the manufacturing lab, too. So as Larry had said, our big companies said right from the start this has to be about the supply chain. And so we've got to think about how we get the capabilities and the innovations disseminated into the thousands of supplier across the, or the hundreds of thousands and so one of the

core elements of our applied R&D projects, which is -- I should actually back up.

There are three main thrusts that we -- three responsibilities that we have. One is applied R&D. Getting the innovations out of the university labs and into our industry for market adoption. The second area is what we refer to as technology integration or technology transition. It's more of that kind of pulling from -- now we've got some commercial readiness. How do you pull it actually into the market so that big companies and small companies can use that technology.

And then that leads right into that third pillar, which is the workforce development and training side of things. And so if you start at the R&D and you think of it as, it's really a pathway and our job is to fund -- to identify projects and then fund teams to execute on those projects.

And so every year there will be multiple project calls, all of them go up on our website, dmdidd.org, and then we also have a proposer's day for every time we do a project call, where we invite companies and university partners to come, learn about the projects, create teams and then apply for them. Next year we will deploy about \$40 million dollars in R&D funding toward projects and so it's a really amazing opportunity for our partners to take advantage of leveraged funding for the work that they want to be doing.

One of the criteria for those projects is a blend of companies, so it's in a sense, a requirement, if you really want to be competitive, you can't just -- GE can't just supply as GE. They need to be able to bring in their suppliers to be competitive for these projects. Likewise, the University of Illinois can't just go ahead and apply; they've got to be able to bring in partners from big companies, small companies, community colleges, other universities and that's what's going to enable the opportunity to not just develop a new piece of R&D, but start building that transition plan right into the projects. Because I think that's the way we get the dissemination out to the small and mid-size companies.

And then there's other mechanisms we'll have in place over time and one of those is the Illinois Manufacturing Lab and some of the projects we can do specifically for small and mid-size companies here.

DR. SCHOOK: No, I think the one key point I just want to reiterate Caralynn shared, this is a problem-driven study. So it's for a sector of like, here's our big company and here's their supply chain and they're -- how do we make this work better? And I think it gets back to the thing on, I'll say, the global competitiveness thing. You know, we can't have little companies competing against each other and then

realizing that there's something in Korea or China that's put together just to compete against them.

So we want to make it dynamic and I think that's why Caralynn said so even the proposal calls it a process. Okay, what are the problems? What might be a big problem but nobody's really had space to deal with it. So all right, we'll put that on the back burner. So there's a lot of interaction about defining the problems and as Caralynn said, that it's rewarded by a spectrum of people who are coming to the presentation.

I think, I just want to say that the biggest challenge to me, is still is the workforce development. And I say that because, as I said in my earlier remarks, our commitment and one of our pillars for setting up UI Labs was workforce development. And we also, and I'll say, want to make this place on an international stage. So we also have a thing of, we joke about it, you know we all have a lot of people from universities, I'm sure have children, junior year abroad. We really want this to be a designation (sic) for foreign people to have their junior year abroad. And that's part of the Goose Island -- we want to have people come and say, this is the future of manufacturing. This is where the innovation's coming from.

And we want to hype that so I'm throwing that out there as an invitation. If you have ideas of what kind of program we can

have, because we have programs that we've -- everybody's been doin' and we all kind of agree, well, it's okay but it doesn't really get where we want to. So how do we build, back to that workforce, how do we get into high school? We were talkin' about it at our table. How do we get parents of high school kids engaged? So we need to -- there is no answer right now, so that's, to me it's an invitation to you to share your thoughts 'cause we need to collectively answer that one.

MR. HUMMEL: On that point about creating a global hub, so juniors from abroad want to come here, what are the crucial elements? Is it funding? Proximity? Urban environment? Supportive political leadership? Other things? And while you're pondering on that, the other story that I think's important to tell is how on earth did you pull off the kind of collaboration that you did because I think in the telling of that story other things will emerge, 'cause it's a pretty amazing success story going up against Cambridge and Huntsville was not easy.

DR. SCHOOK: Well I'll answer that last part first 'cause it's a simple answer. The passion that we had from our partners. From small, medium and like I say we had 11 states. We had 20 senators. Like I say, I was joking at my table, one of the photo ops I missed was, you know, Senator McConnell shaking hands with Senator Durbin. I mean the passion that

we had across aisle, red states, blue states, whatever, this part of America's gonna get back and the renaissance of digital manufacturing is gonna be our driver.

So for us, it was like calming it down in a sense. Poor Caralynn -- we got another 50 companies comin'. It was more, how to make sure -- but like I say part of it was innovation but part of it was looking at the sustainability and anybody who's looked at our proposal saw -- and we also had democratizing of innovation that there was a sense of size is important but it shouldn't be the restricting of what's small companies and how they can grow. Because at our table at lunch we were talking about innovation and stuff and big universities and Big Ten's one of the best of, you know, we have a lot of patents, we generate a lot of royalties and revenues and big companies grow, but big company can grow a revenue of let's just say \$25 million dollars but hire three people to deal with that. Whereas a company in some town adding a hundred million dollars in revenue is a lot of people.

So I think there is also this idea of jobs. So when you ask how did we compete, I think we had a real sense of it wasn't, you know -- I haven't seen our proposal but I thought our proposal clearly articulated how the security -- the national security and being able to respond to national issues, would

be strengthened by harvesting the passion and the commitment of the Midwest.

MR. HIMMEL: Great. Caralynn?

DR. NOWINSKI: Because it became industry-driven so early on, that was an incredible strength for us. The federal --

DR. SCHOOK: Broad industries. I just want to -- not just big guys. Broad.

DR. NOWINSKI: -- broad industry. We -- there were a number of workshops that the federal administration had hosted across the U.S. before these first RFPs went out, trying to understand what should an institute look like. What should it tackle? What are the big problems, what are the sector areas?

And one of the common themes was that it was industry-driven. And I remember we said, okay, well now there's a bunch of universities sitting around the table saying we're going to do this along with the City of Chicago and the state and how are we gonna make it industry-driven? And it was as if it happened overnight. Because the companies very quickly realized that we had a base, we had a really strong foundation and it was.

It was the large companies but it was the small ones, and I'm staring at one of those entrepreneurs right in front of us, who came with a real passion about what the future of digital

manufacturing could be and what it means for American manufacturing and really transforming an industry.

So it was the big companies, the small companies, it was the types of companies. And we had the typical companies that you would expect for a Department of Defense grant. We had the, you know, Lockheeds and Boeings, like General Dynamics, etc. But then we also had companies that make diapers and shampoo. Like Procter&Gamble. Or chemicals companies like Dow. And I think there was -- I think we surprised the federal government with that one a little bit saying, how are those companies identifying the same problems that you know these major aerospace companies are having.

And I think that led to that surprise element along with some of the process and framework that we put in place was something that was particularly attractive to the administration.

DR. SCHOOK: If I could just add, pick up on that 'cause I think some of our competitors I think focused on the DOD part more than us. As Caralynn said, we had Procter&Gamble, who you know, makes 10,000 products and a very -- and they understand how to cut costs and why they're incredible and their approach to manufacturing. But I have to come back and make sure -- we had another partner that I thought was

important, that was World Business Chicago. And had nothing to do with industry. I mean, defense.

But that group provided so much support in terms of if we have a -- if we can do this we'll have a vibrant manufacturing sector, which drives this workforce development. It was like the kinetic energy would expand and really benefit outside of just the sector we were talking about. So they were incredibly helpful and brought in a number of consulting groups on us that we got a lot of strategic insights from.

MR. HUMMEL: Yeah, and having been privileged to serve on one of the strategy teams for World Business Chicago, I know what you're talking about. I mean -- what we have here in the Midwest is cross-sector and cross-scale. And the diversified economy that we have in this area is unique within the U.S. and so a shout-out to Mark Angelson. He was Mayor Emmanuel's first deputy mayor. And Bruce Rauner,

our Governor-elect was central to this effort. So the challenge for this room: we now have three governors from the same party and we ought to be able to do something pretty exciting across a wide geography, at least that's the hope.

DR. SCHOOK: If I can just touch base. Yeah, the whole "I" concept was, I'll tell you, Thursday, September 1st, 2011 invited by Mark Angelson to come -- Deputy Mayor, City of Chicago, come and talk about University of Illinois and

partnering with the City to look at technology development and he said, "Just a couple -- ya gotta wait just a couple minutes 'cause I invited Bruce Rauner representing World Business Chicago to come and give a business perspective." And it's -- you know Caralynn and I had the incredible personal opportunity -- I'll put in (inaudible 0:51:47.9) to work with Mark Angelson at the beginning and Steve Koch. Mark left and Bruce Rauner. To really look at how can we build something that's so special? There was -- I'll tell you there was no politics in this at all. It was, how we as a community can really build something special. I just -- it was a personal experience.

MR. HUMMEL: So with that, what portfolio of projects, what did they look like? And what is the process to arrive at those and what does 2015 look like for DMDII?

DR. NOWINSKI: We're really excited.

DR. SCHOOK: Caralynn can answer this one.

DR. NOWINSKI: So much of 2014 was spent on the standup of the institute and you know a couple things are happening. We're starting to at least slow the pace of hirings; the team is connected, is a little bit more stabilized. We actually have funding from the government now that's -- the process of getting that in order. And we have a process with our partners to identify and then create these projects. So there

were two project calls that we announced in 2014. The awards of those projects will be out kick start to the year. Those two awards or sets of awards will be followed by another proposer's day, very shortly after that and then a series of those throughout the year.

One of the new things -- there's two particularly new things that we'll see in 2015 in addition to the facility. The first one is that we're also going to be embarking on a series of workforce development initiatives as well. To kind of kick start things in 2014, we looked at what are the foundational elements that need to be put in place from a broader perspective around manufacturing. We partnered with World Business Chicago and a number of other associations across the City and the county to announce a thousand jobs campaign. But that was just the very first piece of it.

Now we get to dive into the specifics of digital manufacturing and so to those of you who again are coming from the workforce side or within your communities, we'll have project calls in the workforce space next year that will also be eligible for some of the matching funds from the federal government. And so those programs focused on training and are on dissemination to SMEs are gonna be an important next step for us.

The second really exciting part about 2015 for us is that some of you may have heard us talk about what we refer to as

the Digital Manufacturing Commons, or the DMC. It's the, essentially a Facebook for manufacturers meets the App Store for manufacturers. It's the place for designers and makers and entrepreneurs and investors and distributors and service folks to all come together and collaborate online in a virtual way with the goal of, of course, a physical product.

And so the idea is to break down some of the barriers, increase the transparency and also ultimately provide a secure place for the transfer of data and of knowledge so that we can actually take the data that's coming off every part of the manufacturing process and be able to make sense of it and to be able to transfer it from one part of the process to the next. From design to make to assemble to distribution to service and end of life use.

And so if we have a way to capture that data in a safe secure way, they can exchange it among players, I think we're really gonna be able to move the needle in manufacturing. So the first part of that, and this will be an evolutionary process, but the first version, the first instance of it will be available next year. It'll be something we'll be talking a lot about, so when it's available you will know.

But there's also an interim step to that, which is an understanding for us of where manufacturers are at on this

continuum of understanding how to use digital manufacturing. We hear too many times that SMEs say, well that's cool but it doesn't apply to me. And so we want to start demonstrating yes it does apply and this is how you can use it. And first part of that is an education of what is digital manufacturing and then where am I at on that continuum and so we're gonna be distributing a digital assessment, a tool of how, where you are on the maturity scale and part of that will be helping to define what digital manufacturing is, because it's something that I think everyone's having a hard time defining 'cause it can mean so many different things.

So be on the lookout for that as a way to kick start what's in store for 2015.

MR. HUMMEL: Last question from up here and then we open to you. So it's been six or seven years after the great recession. There are four of these institutes nationwide. One in Youngstown, Additive Manufacturing; one in Raleigh, one in Detroit and then the one here and as a result of the action of Congress last weekend, there's \$300 million dollars more that is gonna go for two other of these research institutes.

Is this effort giving traction to the revival of the U.S. economy and what promise does it hold for us as a nation?

DR. SCHOOK: Well, I mean I think it, let me just say that in the new additional money I think it was again a very bi-partisan perspective so I think this is one of the areas again I want to come back to building a future that's bi-partisan and one that everyone sees that there's a benefit to each of the respective partners. Because I think that has been a problem we've all struggled with. No matter what side of the aisle you're on is we've been dysfunctional because we haven't been able to have a vision of where we are and where we want to go and definitely we might have some disagreement on how to get there. But now we at least have a vision that, and a wakeup call to the rest of the world, that we're back in the game.

And for me one of the things, and you know my whole career's been in education so you can take it with a grain of salt what I say, but I think one of the things that we are really good at, you know I'll come back to it, is competing.

I think that we have not been able to compete fairly in a global sense in manufacturing because of, I'll say, where our government has or hasn't been and I really believe that where we are now is in a position that we've told our universities, we've told our local governments, we've told our companies large and small, we're back in the game and we're gonna compete. And

I have -- I get excited about the sense that we can compete with anybody and back to the workforce. And I can say I grew up -- I should -- total transparency -- I grew up in Detroit in a manufacturing neighborhood and I can see what happens when you don't pay attention to details.

And so that's another area that we're in a good spot from the recession and I think collectively Chicagoland, we're in a good spot and I think it's going to be exciting times.

DR. NOWINSKI: I think if you look at the stats alone and I'm a numbers person, I guess, and so when you look at the fact that one in seven jobs in America are manufacturing jobs and then you look at the, similarly the stats that Nick mentioned before even, if there's 1.48 jobs created for every one job in manufacturing, that's actually more than any other industry and there are, there's people that say even, I've heard even beyond four to five jobs in advanced manufacturing support-related jobs for every one advanced manufacturing jobs.

So I think those two stats alone show us that if we don't do something about this to secure our future, I mean it's the most obvious choice.

DR. SCHOOK: To me it's like, why haven't we been doin' it?

DR. NOWINSKI: And so I, we were all really thrilled last week and, er over the last week to hear that the RAMI Bill,

Revitalize American Manufacturing Innovation Bill was passed because that is -- that's really a start to this, to make it official that these networks are important for the future of the U.S. and I think it's a tremendous message that that sends and we can start celebrating that child who says, I want to work in manufacturing.

MR. HUMMEL: Questions from the floor? Mayor.

Q: What do you think is the first thing that you're gonna see come out of the organization or what's the low-hanging fruit that you think are gonna be the first wins for your organization? We heard about this from Howard Tullman last month up in Racine. By the way, we'd love to talk to you guys about the work that we're doing with our incubators up there, but what do you think is that real low-hanging fruit for you coming out of the box?

DR. NOWINSKI: I think it starts with an awareness, an access piece. So the awareness I think comes down to the fact that there's this place that people can come to and start learning about what digital manufacturing is. See examples of equipment that they see on their own machine shop floor and say, oh, I can make that now, that dumb piece of equipment's smart and this is how I do it.

And then we've got to put in the pieces in place to allow then the small, mid-size companies how to access it. So Larry

mentioned the Illinois Manufacturing Lab and as part of that initiative we've begun ten pilot projects to work with small, mis-size companies and understand what is the model for how we can work with small companies to provide them with the access and the resources and expertise that they need.

And ten sounds like a small number and it is, but we needed to test the model. We'll have those ten projects complete next year and we hope that several of them will be success stories. Now for us the hard part's going to be -- and Scott was instrumental in getting some of those projects off the ground, so he knows this very well. The hard part's going to be figuring out how do we go from those ten to hundreds and then hopefully thousands.

But you know, it's a start for us to start our understanding. How, what's that process need to look like? How can we scale it and we'll have some of those early marks at least as it relates to the first ten projects very early in the new year.

DR. SCHOOK: I want to -- a thing that came up last week, we had an opportunity to host Secretary Pritzker and one of the things that came up with some of the bigger companies was on the manufacturing floor was actually companies that are producing digital manufacturing equipment being able to be there together. So there was this innovation of interactions between, even in that sector, of what's the next wave? You

know, we have existing products that kind of evolved in a silo but now if you say, here's the future of really creating a digital space, you know, I think there's gonna be a lot of dynamics there. But I'll get back to Caralynn's point.

I think what the first low hanging fruit we'll have is how best to interact with each other because we've got, you know, we can have a nice conversation, one goes, we'll that doesn't work for us 'cause we can't do that and we've got to figure out how to help 'em be able to do that. I think it's -- to me that's gonna be, and that's a major step forward.

Q: Hi, thanks. Really quickly, what do you see the role of water and water reuse and resource recovery being in this next age of manufacturing?

DR. NOWINSKI: Okay, so you're gonna have the non-engineer, non-manufacturer try to respond to that one. Unfortunately Bill King, our Chief Technology Officer was not able to join us; he's got the flu, so he would have been much better to answer that. However, I will tell you the DOE is very interested in this space as well. Of course, the manufacturing process, to make it more efficient, to make it more cost-effective, there's a critical component related to energy and water. And so being able to think about more efficient processes, look at opportunities like reuse, will be something that will be inherent as part of our process.

Now DOE is also looking at digital and smart manufacturing and we're working with them to figure out what the right things for them to go after versus for us through the DOD, and so I think it'll be an ongoing dialogue and one that, you know we hope to really engage the clean tech community in discussing.

DR. SCHOOK: You know I think it's clearly is something it's on the table, as Caralynn says, it's central how to do that. I mean one of the issues, again, this is an invitation for you to forward thoughts because you know, water issues in this area are very different than water issues in New Mexico or California.

So we really need to have a really broader sense of, coming back to this is a national institute for digital manufacturing. So one of the things that we need to make sure is that the value proposition may be actually greater than our local community in some of these discussions so if you have thoughts on who should be invited like Caralynn says, to put together proposals for building teams, it's be very helpful.

DR. NOWINSKI: Can I, let me also just add one point on that because I think if I can, you know, put the DMDII platform to the side for a second, I mean UI Labs was set up to not just do this for manufacturing but to do this with multiple problem

areas. And so we're already exploring a second platform to be able to build on and a similar way bring together these consortia that involve industry and government and academia together around big problem sets.

And I think the Midwest and particular the tri-state region is well positioned in a couple of key industries sectors. And water is indeed one of those. And I know there's already a number of initiatives going on and I think maybe a challenge back to this group perhaps is, you know, is there an opportunity to take those initiatives to the next step? DMDII was born out of a number of different initiatives that were happening all around the Midwest and bring those together and getting the critical mass to move something forward, bring industry to the table for that. And, I throw a challenge out: help us figure out what's next. And thinking about what's the next sector we can go after as a region together.

Q: First, congratulations on what very very exciting and important initiative. I know from my own experience these kinds of things don't happen easily, so here's my question: What has been the most frustrating or difficult or biggest hurdles that you've had to overcome to achieve this notable success to this point and then secondly, as you look to the future, what may be the biggest challenges as you continue to move forward?

DR. NOWINSKI: I'm on the front lines. I see lots of challenges.

DR. SCHOOK: I think for me the number one challenge, and I'll speak for both Caralynn and I is when we put -- you put together and say, we need to connect the dots and you have industry and you have governments and you have universities. And they have very strong cultures about how they make decisions and they're very proud of them. And so to say, well we're going to do it differently, there's a tremendous pushback.

Now I think what one of the things that benefitted us was the scope and size of the project. Because you know if we wanted to compete at a level like \$200, \$300 million dollars and be the national lab, you know, that kind of skews the discussion. You know if it had been \$5 million or \$10 million, we'd still be havin' that discussion. So I think the scale and scope of the project, which is one of the lessons we've learned, really mitigates some of that cultural bias.

I think the other part has been defining a transformative global problem that's being solved. And I say that because then that means the scale and scope cannot be -- one company can't do it. One state can't do it, one university can't do it. And so that really requires people to sit down and figure out if this is a problem we all want

to solve, how are we going to do it? And that was one of the basis for UI Labs. We needed a venue, a place where when everyone comes in that door, they're not representing University A or Company B. They're in there as a partner in discussion of solving the problem.

So I think those -- and that will continue to evolve. We've had some hiccups at times about that but I think again, back to what we were very fortunate on was the manufacturing sector was something that everybody saw value in and as I say, we had incredible support across the spectrum from top to bottom.

DR. NOWINSKI: I think that's exactly right. I'll just add there's this sense of transcendence that the companies have to buy into, the universities have to buy into because there is such a give and take when you're talking about this kind of scale. And it is the scale that allowed us to overcome some of those challenges. But we'll, I'm sure we'll continue to see that and as we build our second and third programs and so on, we'll continue to see that. This is not for everyone. This is a scale and a depth of collaboration that is new and we're really hopeful about the early progress we've seen. But this is gonna take a little bit of a leap of faith and a little bit of give and take for us to be able to make it work --

DR. SCHOOK: I want to, if I can add one more comment to that and this goes back to the RAMI decision in D.C. This was all an experiment, right? You have an industry -- big problem and you say industry and the feds, well we're gonna put money on the table and if industry matches it -- I really think that we're gonna see more and more of that because it really does drive the competitiveness of our companies. It really brings focus to our universities and I think it gets back to this workforce development piece in a broader sense.

We're just not counting how many people we graduate and say, good luck, you got a great education, go find a job. I think we are getting back to a little bit of like having a career in manufacturing is going to be an important thing. So I think there's some exciting times.

MR. HUMMEL: Our time's up.

MR. BOYLE: So I think that's gonna have to be the last comment for the day. I'd like to make sure Kelly comes up and wraps this up for us. Thank you to the panel.

Federal Reserve Bank of Chicago
Summit on Regional Competitiveness
December 19, 2014

Closing Remarks

KELLY O'BRIEN: So as you heard all day today, working fast together, so I pledge I will make my remarks fast. On behalf of the Alliance for Regional Development I want to express our gratitude to all that made the Second Annual Summit on Regional Competitiveness possible. Thank you to our host, the Federal Reserve Bank of Chicago. I have to tell you, working with this team has been such an honor.

As I mentioned earlier this morning, they have very strict deadlines and so they push our team to be very diligent in terms of making sure that we pushed our speakers and the other participants. I really want to ask for a round of applause for our master of ceremonies, Jerry Boyle. (Applause).

Jerry, Alicia, Katie, Brenda, Rhonda, Edwina, Sean, Sarah, Greg -- everyone has just done above and beyond and attended to every detail to make today as great as it has been. And for the members of the team that if I missed your

name, I apologize but I thank all of the entire Federal Reserve team and everybody that's helped again with this event.

To our generous sponsors, whose support makes our work possible. Our video and our hand-out showed some of our sponsors. Wow -- look at that. We have a number of private sector entities; we have governmental entities; we have foundations. I unfortunately cannot mention everyone but I do want to make just a few shout-outs: Of course, starting with the Alliance management team. I's so blessed to work with six phenomenal people that are so committed to this effort. Jim Stanley, Mike Mullen, Paul Jones, Carmel Ruffolo, Greg Hummel and David Terrell. I'd also like to point out that Bryan Cave Law Firm. Brian Cave provides the Alliance beautiful office space and administrative support. It truly is a wonderful place to go to work every morning.

Manpower. Manpower provided the initial operational funding to help the Alliance be independent as a 501c3. Without their help not only with the funding but their intellectual capital, Manpower has been just a tremendous supporter going all the way back again to the OECD report days. So a round of applause for Manpower (applause).

The JPMorgan Chase Foundation has provided a grant and sponsorships to the Alliance. Thank you for believing in us.

Purdue, the University of Wisconsin-Parkside, the University of Wisconsin-Madison. We have special -- so many sponsors that again have contributed both money and intellectual capital. The U.S. Department of Commerce, Baker Tilly, A.O. Smith, NIPSCO, Boeing, Barnes Thornburg and to so many others. In fact, I've learned of new sponsors since that sheet was printed. So again, I can't thank everybody but from the bottom of my heart, we appreciate the support we've received.

Thank you to our expert speakers and panelists. There are stories that go on behind the scenes in order to get all these folks here today, but I hope that you found the program enlightening and really informative and I just think we've pulled together great people despite that nasty flu bug.

And to more than 100 committed volunteers to our Alliance working teams. Imagine this, and I'm not exaggerating, you look in the back of the program book and online we have people's bios and pictures. There's over a hundred volunteers from this region who have diligently worked together really from the beginning but especially this year.

And thanks to all of you that are here today and watching on our webcast. We're only as strong as the people that show up and participate. And I think today has been a wonderful success.

Our tri-state region is a main driver of national growth and global competitiveness. Northeast Illinois, northwest Indiana, southeast Wisconsin are together the third largest contributor to our nation's GDP. That means that the steps we take to grow our regional economy benefit not just the Milwaukee-Chicago-North Gary corridor, but our nation as a whole. That's how important our mission is.

Today we talked at length about growing the economy in four key areas: green growth with the water technology sector, workforce development, innovation including start-ups and established manufacturers and our transportation network and logistics hub.

But the secret of the work we do and it's really not a secret any more is that the gains we make by standing together and collaborating as one region across jurisdictional lines to advance these areas advances the areas and the regional economy and the national economy.

Our work this year clearly demonstrates the leadership of this region and the economic power of regional collaboration. For those of you that read the OECD report you may recall that it stated that one of the key successes was genuine collaboration instead of, and I quote, "petty harmful competition for scarce resources" and that scaling

assets would allow our region to compete more effectively in the global marketplace.

Because of our work, the OECD report was not just another study that sat on a shelf collecting dust. In one short year the Alliance working teams first convened and our accomplishments are significant. We brought together high level decision makers in government, academia and the private sector from all three states to engage in a year-long effort to implement strategies to benefit not just one state but the entire region.

Those leaders stayed at the table through 12 long months of challenging work and they were successful in their tasks. They kick started ongoing truly region-wide discussions about solidifying leadership in the water technology sector. They adapted a proven successful workforce development model to benefit all three states. And by the way, when that team presented today, the presentation and that video went out to hundreds of economic development entities, chambers of commerce and to the entire Alliance distribution list.

We team created an online portal to share innovation on business-critical assets with innovators throughout the region and of course, who can't be in awe of the transportation team and the GIS mapping tool?

How many other regions can point to successes like these? All from the work of volunteers. And we're just getting started. We don't want to lose a moment of the momentum we've created. So what's next?

Please join us on March 9th as Alliance leaders and stakeholders to sit down again to determine what are our next steps for ensuring that all cross-border collaboration, of which our region has now proved itself admirably capable, will remain the new normal for efforts to improve competitiveness in this region.

Our goal is for the individual working teams to meet in January and February and then in March to bring together a large group of funders and stakeholders and working team members and really plot out when can the Alliance say, mission accomplished and what can we do to build on the work that has been started.

To be most successful we cannot stand apart. My hope and prayer today is for ever deeper regional collaboration to be the legacy of the Alliance for Regional Development. And to all of you, I invite you to stand with us in this effort. And thank you for contributing to this effort. Truly, thank you.

Happy holidays; enjoy your weekend; the 24-team summit is concluded and I have waited all year to say that!

- END -