

THE BROOKINGS INSTITUTION

THE FUTURE OF THE GREAT LAKES ECONOMY:
A FEDERAL-STATE COMPACT AND OPPORTUNITY

Washington, D.C.

Thursday, June 28, 2007

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Panel One:

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TERRY THOMAS
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Panel Two:

TIM PENNY, Moderator
Director
Southern Minnesota Initiative Foundation

GEORGE KUPER
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PROCEEDINGS

MR. KATZ: Good morning, everyone. I am Bruce Katz, and I direct the Metropolitan Policy Program at the Brookings Institution, so welcome.

Today we're here to talk about the economic and environmental importance of the Great Lakes Region, in particular how federal policy can be structured and reformed to leverage the potential of this critical part of our country.

Today's forum builds on a multi-year research and policy effort led by John Austin, who is a nonresident senior fellow at Brookings, who is based at the University of Michigan. Over the past several years, John has worked closely with a network of academic, public policy, business, and civic organizations to craft a federal and state agenda that builds on the powerful institutional economic and environmental assets of this region.

And this work and our program in general have been supported by a network of corporate and civic philanthropies based in the Great Lakes. Some of them are here today, The Joyce Foundation and the Knowledge Works Foundation, as well as the Canadian Government.

In October 20, '06 of last year, John and his colleague, Brittany Falter-Kane, who is also here today, released a vital center, a federal-state compact to renew the Great Lakes Region. This report confronts head-on the legacy costs of the industrial economy and the pain of the transition to an

economy based on knowledge and innovation.

This report also lays out a vision of the Great Lakes that is quite different from the negative perceptions of its still permeated public debate. As John will share, the Great Lakes are home to an incredible diversity of leading-edge, high-tech manufacturing industries, world renowned research and educational institutions, and the physical infrastructure and natural resources that position the area favorably in the emerging economy.

John's report and today's discussion will try to answer three central questions that face the Great Lakes and I would argue all regions of the United States. How do we grow an economy marked by continuous innovation and knowledge creation and new and traditional industries at a time of fierce and rising global competition?

How do we build a strong and diverse middle class at a moment when wage stagnation and rising income inequality threaten our traditions of social mobility? And how do we grow in a more environmentally sustainable matter given the reality of global warming and climate change?

There could be no better time or place to have this discussion. The 2008 presidential election, as we all know, is off and running and promises to raise and confront issues about economic restructuring, family opportunity and

environmental sustain ability.

The Great Lakes occupies a special place in this emerging discussion, both as the region that made America a great agricultural and industrial powerhouse and as the region that has decided many of the most recent elections.

So, Brookings intends to do what we can do with this effort and others to inform the 2008 presidential election with grounded objectives, discussions of the challenges the region faces, and with discreet attainable ideas for reform and action.

Today's event is therefore the first in a series, and we really have a superb list of speakers today. First, we're going to hear from Congressman Ehlers, a distinguished public servant and a leading Great Lakes champion in the congress. And I'll introduce the Congressman in a sec. Then, we'll hear from John Austin, the nonresident senior fellow at Brookings, who leads our Great Lakes economic initiative, and he'll lay out the case from the 2006 report.

Then, we're going to hear from two panels. The first will speak to the emerging knowledge economy in the Great Lakes region and will consider the education and workforce policies need to support innovation and growth.

And then we're going to hear from a second panel concerned with

the environmental imperatives that confront the region and the potential of those imperatives – to meet those imperatives through the revitalization of great cities like Milwaukee, whose mayor Tom Barrett is here today as well.

Now, we are expecting to close this presentation with June Duderstat, the former president of the University of Michigan, but given the time of the year, his flight was cancelled this morning. So unfortunately, you'll have to hear from me at the end as well.

This is being simultaneously webcast. To those hundreds or thousands of people who are hearing us over the web, good morning.

So, first let me introduce Representative Ehlers. He is from Grand Rapids, Michigan. He is serving his seventh full term in the US House. Since coming to the House, he has really built a distinguished record of working to protect the environment, promote conservation of natural resources, and advance alternative and renewable energy legislation.

He has led the efforts to protect and restore the Great Lakes from his position as Co-Chair of the Great Lakes Task Force. Enacted in 2003, his landmark Great Lakes Legacy Act has helped to clean up contaminated sediment and restore the beneficial use of rivers and harbors in the Great Lakes Basin.

And prior to joining Congress, Representative Ehlers served in the

Kent County Michigan Board of Commissioners and in the Michigan House and Senate. And an interesting side note, I gather you're the first research physicist to actually serve in Congress.

So, we welcome and we are pleased to have Congressman Ehlers here this morning. Thank you.

MR. EHLERS: Thank you very much. It's a pleasure to be here. This is a great institution, and I probably should put it on my list of potential retirement options.

Presently, I'm enjoying the Congress. I always enjoy it as long as I get things done. And I've discovered one strange thing. The longer you're there, the greater your seniority. The great your seniority, the easier it is to get things done. However, if you're in the minority, it's tough to get things done. So, the world changed last November.

But I just want to thank you for what you do at the Brookings Institution, the report that you've just completed; excellent piece of work. And thank you for inviting me because I'm going to be talking about my two favorite topics, namely innovation competitiveness and the Great Lakes. So, we will take a look at each of those in turn.

Now, the problem is to get it all said in the 20 minutes that has

been allotted to me, and I'll do the best I can.

The report that you've put out emphasized just the things I've talked about for a number of years, innovation as the key to economic competitiveness. When I first arrived in the Congress, one of the first tasks – well, I set two main tasks to myself with the enthusiastic support of Newt Gingrich, who is quite a techy.

The first one was to computerize the House simply because I was astounded when I arrived there in 1994, which was after all the internet age – we were well into it – and it was easier to email someone in the Kremlin than to email a colleague 20 feet down the hall.

So, that was a mammoth task, which as I pointed out to Newt when he asked me to do it, and I initially said no. And I simply, look, a job like this, if I do it right, no one will ever know or say anything. If I do it wrong, everyone will criticize me. But he persuaded me to do it anyway. Fortunately, it did work out.

My second major project the first two years was to try to write the beginnings of a new science policy for America. This had not been done in any serious form by the Congress or by the federal government since Vanever Bush did it with Science, The Endless Frontier.

It was very interesting working on that, trying to pull it all together. I knew nothing about science policy, but I did know science. And I think we put out a reasonable product in a fairly short time. But I entitled it Looking Towards a National Science Policy. There's still a lot of work to be done. I had hoped others would pick it up. So far, they haven't to any great extent, but it is beginning to happen.

Innovation is the key to competitiveness. And I tried to emphasize the need for basic research in this nation. Another factor is the importance of math and science education. And I'll come back to that a bit later, but, it's absolutely essential if our – well, I'll hold that back for a bit.

Another essential aspect is the importance and the value of basic science research funding in which we're not doing that well in this country, either at the state or the federal level.

And finally, the crucial need for a better environmental stewardship with the Great Lakes, that was not in that report, but it's essential to what I'm going to be talking about.

I was particularly interested in the section of the report that identifies the assets on which to build including a number of things, first of all, an innovation infrastructure of leading public research universities and other private

sector research institutions. Now, I think it's essential to have both.

We obviously have to have a very good innovative leading leadership from the academic institutions. And we have a strong higher educational system in the United States, and support comes from various sources. It's kind of cobbled together. We'd never do anything simply in this nation because we have the states as well as the government, but nevertheless, we've managed to build the world's greatest university system.

Also, the private sector institutions are extremely important because frequently, governments will put restrictions on the publically funded universities. I mean, you've probably all heard the standard joke about the legislature are very concerned because faculty members were working – teaching 12 hours and they thought that's a pretty long day. And then they said well, maybe it's not so bad; you do get some resolve. And that illustrates the incredible misunderstanding of some of the governmental agencies about how universities work.

Another factor is of course the nation's manufacturing base, which you have pointed out, and then finally, the Great Lakes, which provide drinking water and serve as a means of transportation and recreation for tens of millions of people.

Let's talk a little bit about competitiveness. And that's what everyone talks about, but what do we really mean? Competitiveness today no longer means being able to compete with a company down the street or the company across the country. It means competitiveness with other nations.

It was slow of us to catch on. We have now caught on, and I think our country is making substantial strides compared to other countries, particularly, considering the wage differential.

But it's still – there's still a lot to be done on this and in particular, we have lost our competitive edge in one area definitely. We may have lost it in several areas, but in one area and that is the lack of funding for basic research.

When I was younger, when I first got into the science fields, there was ample support for research from the federal government. But, in addition to that, almost every major corporation had a substantial research operation, and some of them had outstanding basic research operations. One only needs to mention Bell Labs, IBM, Xerox, et cetera.

Those have virtually disappeared. Why? Competitiveness. We are competing with other countries and businesses in other countries which do not support basic research. And just the bottom line and the insistence on doing well every quarter, which is what the current investors demand, just simply put the

pressure on the companies so much that they began to do away with their basic research.

That means that basic research is largely in the hands of the universities and the private institutions, such as the Rockefeller Institute or more recently, the VanAndel Institute in my hometown of Grand Rapids, Michigan. We are very rapidly growing, a very substantial endowment, and doing some very, very good research. Fortunately, I noticed that President Lou Anna Simon of MSU is on the panel, next panel. MSU is now cooperating by putting a med school just within a half block of the VanAndel Institute in conjunction with a major hospital. And I think that's going to result in some really great things too.

Much of this has come to focus in the past few years in terms of competitiveness. And I have worked on this now for almost 14 years. It is very, very difficult to keep your spirits and your energy up in the Congress because it is -- the only way to gain traction is personally persuade at least half of the Congress that you have good ideas. It's very time consuming.

As Harry Truman once remarked about the presidency, "The only power the president has is the power to persuade." And when he left the presidency, he bemoaned the fact that he had spent most of his time trying to

persuade people to do things they should have had sense enough to do themselves in the first place. And I frequently feel that way.

So, it has taken a long time to build the support for research and educate my colleagues in the importance of research in terms of our competitiveness. But last fall, everything came together very beautifully. I called Josh Bolton, who then was the Director of and Office and Management Budget and now, the President's Chief of Staff. And I had had various conversations with him trying to make it clear to him the importance of this.

And I called him and said could we have breakfast. And he agreed to do that, so we had breakfast. And I invited along Sherry Bullard, Chair of the Science Committee and Frank Wolff, Chair of the subcommittee funding science – at least much of the science, National Science Foundation, NEST, and so forth.

And we had a great breakfast. I had my usual PowerPoint presentation and went through all the factors involved, how we're doing compared to other countries. I'll give you a little sample of that in a few minutes. We had a very good breakfast, and Josh was genuinely interested in it, seemed convinced. The final question was it's all very fine, but how do we pay for it, which is always the question a budget projector asks for.

And I pointed out to him how we could pay for it – several avenues in which we could pay for it, but also pointed out good research well done more than pays for itself. And I love to give all the examples -- I won't give them here because you all know them, but the examples of various products which were developed with government funds, which have yielded multi billion dollar results for the economy.

In conjunction with that, we also held a summit the same day. It's just by coincidence it ended up on the same day. We invited university presidents, corporate presidents. We had six cabinet secretaries show up. And we had a grand summit about competitiveness and what it meant and particularly, how it would affect each of the cabinet secretaries' departments, a very good discussion.

And then, roughly at the same time, Norm Ornstein's National Academy Report, "The Gathering Storm" came out. To me, it was a perfect storm, not just a gathering storm, a perfect storm, all three of those things happening. We worked together and Norm Ornstein went into speak to the President of the United States, who is a very good listener and a very quick learner, contrary to what many of the public, especially in the academic arena, think. He is very bright, caught on very quickly.

The result was in the State of the Union he announced the American Competitiveness Initiative. I saw the president the following week, and I thanked him profusely. And I said, you know, I have been working on this for 12 years. I'm just absolutely delighted to see it finally happen. And in his usual fashion, he winked at me and he said Vern, I just apologize that I'm such a slow learner. But he – I don't think he's a slow learner, but he did do it, and that has been the vehicle that we are now using to increase funding for research because it ties directly to competitiveness.

The Science and Technology Committee continue to act on this. We've passed a number of bills this year dealing with improving basic research, improving math, science education, and programs which expand and strengthen teacher training and provide fellowship programs, improve research opportunities for young investors and so forth.

We've put it all together in one package. We passed them as individual bills, but we've now put them in a package we call the competitiveness menabus, because the Senate didn't want all these different pieces because then it would go to different committees and they'd never get it back together. So, we wrapped it up in one bill, and we hope they will deal with it soon.

Let me also mention a very important factor and that is education,

STEM education, science, technology, engineering, mathematics. We picked a name unfortunately before stem cells became a big issue, so I constantly have confusion in the public about STEM education. They think it's education about stem cells.

But I've invested a lot of effort in this, and I've never intended to get on the education committee. I had too much of a committee load to begin with, but early on, I got a math education bill through the science committee, went through the education committee and died.

The chairman refused to even take it up. His argument was we have to concentrate on reading first. And I pointed out to him the evidence and the research that teaching math and science actually speeds the learning of reading. After all, you're doing a lot of things in science, particularly if it's hands-on, that aid you in understanding the symbols that are used in reading.

And so, I just couldn't make headway, so Newt said okay, next year, you go on the education committee. So, I went on the education committee, which turned out to be unfortunately far too much work, but I at least did get the science education bills too. It was also providential that I was put there because when No Child Left Behind came along, the emphasis was on math and reading, no science. And by working very hard, I got science included with that.

Research and development, I've already talked enough about research and development. The real issue is jobs. How can we provide jobs for our people? Because if our people don't have jobs, as we're encountering in Michigan now because of the difficulties of the automobile industry, our unemployment rate in Michigan is 6.9 percent. We had been leading Louisiana, which has an excuse for a poor economy. We have now lost ground and we are the last of the 50 states.

The only American area that has a worse unemployment rate than Michigan is Puerto Rico. So, obviously, our competitiveness involves more than just our healthy economy. It involves jobs for the people of our nation.

The time line is all happening fairly rapidly. Tom Friedman published *The World is Flat*. I was delighted to see that and particularly delighted to see how it caught on with the people in this country. It was very kind of him to quote me, although he said I was a representative from the state of Missouri, which I hope did not speak well to the accuracy of the book as a whole. But he did correct it in the next printing.

But as I mentioned, "Rising Above the Gathering Storm," The Innovation Summit, American Competitiveness Initiative, this all happened very, very quickly. I was very pleased with it. But I've been constantly asked by the

public why STEM education, why do my kids have to study science. My answer is very simple. That's where the jobs of the future are.

And I have to repeat over and over, I am not doing this because I want to produce more engineers, not because I want to produce more scientists. That's part of it, of course, and an important part. But the real part is the jobs of the future are going to demand an understanding of the basic principles of math and science. There's no two ways about it.

And we have to – if we don't prepare our kids with math and science as China has done, as India has done, we're going to continue to fall further and further behind. And the state of American education in math and science is not good.

Some gentlemen from Michigan State University, another famous university of which Lou Anna Simon is the president, did the Timms Studies measuring American students performance compared to other countries.

In math, we came in second to the last of the developed countries, physics came in totally last, general science, we were about seventh from the bottom, just not doing well in this country. And our kids are not going to be able to perform in the workplace of the future because it's going to be a very technical workplace.

We also, as I said, have to produce the needed scientists and engineers. And that's exceedingly important, but we can't forget the other children. We have to educate the children because they are going to be consumers and voters. More and more issues are decided in the ballot box, many environmental issues, particularly in California. If you have an uninformed electorate in terms of math, science, you're not going to get a good result. But also, they have to vote for congressmen, and I hope they will expect their congressmen to understand math and science.

Finally, my very important reason in my mind for STEM education, to enable thinkers and learners. When I taught physics, I deliberately chose – selected courses for the liberal arts majors in future teachers, because that's where I thought we should make the biggest impact. My colleagues thought I was crazy because they all wanted to teach the advanced physics courses. And I did too, of course, but I saw a great need there.

But I kept emphasizing to my students when they complained about having to learn physics and learn the math in it and so forth, I said that's not what's important. I'm trying to teach you to think and to learn how to learn. And I also told them when you graduate from this institution, don't think that your diploma is a union card, a signal that you can perform certain jobs. Think of your

diploma as a learning permit because all we're trying to teach you in this college is to learn how to learn so that the rest of your life you can learn productively.

Pending legislation, I've run through some of this already. Science Committee has done a number of things, K-12 education. A big battle I'm working on right now, second line from the bottom, get science included in adequate yearly progress in No Child Left Behind. Because that's the real test. I think most of you know where our students lie in terms of science education.

And if we -- if I can get this in No Child Left Behind and the newspapers are going to scream as they did in Michigan when they first began testing on science, you get an immediate reaction. The public gets angry, why are our kids -- as in Michigan, first year they got tested for science, 17 percent average across the state in science tests. And the public was just in an uproar. Today, we're doing far, far better, and I want that same thing to happen nationwide.

The other thing I'm doing is the SPEAK Act. That's an acronym, and I don't even remember what it stands for. But what it is is to get a neutral national agency -- I was specified one, but I don't care which one does it -- to outline the ideal curriculum, structure, sequence, and so forth for math and science courses for this nation.

We cannot make them mandatory. There's a very strong feeling in this nation against federal control. It has to be the local school boards in the states. But if we can set up a model that is so good that almost everyone will follow it, the textbook publishers and authors will follow it.

And my principle argument for that with lay people is just say look, math is sequential. You can't learn this without first learning this, and that's why it has to be taught sequentially.

But, there's still a lot of flexibility, and you can have a situation where a fifth grader is taking math in a school that teaches fractions in the fall and percentages in the spring. Christmastime, his parents move to another school district, and there, they teach percentages in the fall and fractions in the spring. The kid gets a double dose of fractions and never learns percentages.

And we have that frequently. This is a very mobile nation. The average family moves every four years. And so, I think we need standardization of the curricula in that sense without mandating it but set up what the ideal program is. And I hope – and I have introduced that with Chris Dodd, and I hope that we can get action on that.

I already talked about the Competitiveness Initiative. Let me just talk briefly about federal R&D funding. Much of my effort has gone into

increasing the funding. It has been like pulling teeth. My colleagues all say science research is important, and they agree totally on almost everything I'm trying to accomplish. But, when it comes to the funding and it's a choice between funding research or getting 10 million dollars for an earmark for the district, you know where the choice goes. And I've been fighting that over and over.

We have done very well with NIH, thanks to Newt Gingrich. When Newt came in, he says we're going to double NIH. We're going to try to cure some of these diseases, diabetes and so forth, so we pledged to do it and we succeeded. Later, I managed to get the same bill through for NSF, but about that time, we hit the recession, and we're just beginning now to get real money in there.

Notice NSF, the bottom line, is just sort of dribbling along, steady increase, not a great deal. And it's easy for me to look at this and get very discouraged until one day I sat down and calculated. Well, on average, I've gotten 100 million extra per year for NSF. Over 14, that compounds, because every 100 million you get in a year, that's the base for the next year. And so, I've managed to, through my efforts, probably increase the base of NSF at this point between one billion and one and a half billion dollars.

So, as Everett Chirk says, a million here, a million there, a hundred

million here, a hundred million there, eventually you're talking big money. But it's still very disappointing to me that I have not been able to do more. The Department of Energy, particularly, I have worked strenuously to increase that. Notice we're still behind where we were on almost 20 years ago. NASA goes up and down depending on its fortunes, its projects, but it's not doing that well either. We as a country are simply not putting the money into research that we should.

Let me switch gears now and talk about the Great Lakes system. As you have observed in your report, it's a marvelous system. It is a center for manufacturing excellence, Detroit. If you look at the chart in the book about automobiles, you see everything centers around Detroit and filters out into the neighboring states. You can pick other manufacturing areas and you will find other states in the region served well.

A lot of it is just the Great Lakes. They're a great resource. They attract people because of recreational opportunities. They provide water for industrial processes, for drinking, for recreation. They have great economic and environmental value. Most people don't realize the fishery alone from people who catch their own fish is a four billion dollar a year industry in Michigan and comparable in the rest of the states.

If you include the commercial fishery and go over the entire Great Lakes system, I have been told – and I have not been able to verify this, but I’ve been told it’s about an 18 billion dollar a year industry. Yet there are serious threats. Legacy pollution, for years we just let the pollution go into the rivers, into the lakes.

I managed to the Legacy Clean Up Act passed, and it has turned out to be the most successful cleanup, compared to the land cleanups. And communities are working hard on this, 65 percent federal money, 35 percent state, local, and business. And we’re really getting the job done, but we have a lot to do.

Invasive species, huge problem and we have not stopped it. We will today be taking up a bill in transportation and infrastructure which will try to tackle the invasive species problem. Most of it comes in ballast waters of ships, and so we have a fairly strong bill, which I hope will pass and go into effect.

The shipping industry when this first came up some years ago came to see me and they were very concerned about all the astringent new rules. And I said well, that’s okay, why don’t we just forget about it? We’ll just make you liable for the cost of the invasive species and which the case, the shipping representative said whoa, we can’t afford that. I said, that’s the point, neither can

we or the rest of the people. And so, we are going to put controls on ballast water.

It is a tough problem. It's not as simple as you think, and there's a lot of research that needs to be done. I'm adding a research component to the bill, and I hope it will be done properly and soon.

Solutions, we're constantly working out solutions on Great Lakes issues. And I don't have time to go into all of those. We can talk about – let me also just show a few slides which show why the Great Lakes are so important and what an incredible asset they are.

First of all, just a comment aside from the slides about the value of water, we dramatically undervalue water because we just assume we can pump it out and use it at will and that the cost is just the cost of pumping it out and treating it. That's not true. Most of the water is a very scarce resource. T. Boone Pickens, who made a fortune in oil by going around and buying oil reservoirs, has now gone to buying water rights around the world. He sees water as becoming resource of the future, and he is willing to put his money there.

Look at what we have in the Great Lakes. If you look at this, you can see a lot of rivers. By the way, this is courtesy of Howard Tanner, who once again is a great person at a great university in Michigan State University. You'll

get the bill for this later, Lou Anna.

DR. SIMON: Thank you very much.

MR. EHLERS: But Howard Tanner used to be a Director of Natural Resources in Michigan but also a faculty member at MSU for many years, and he prepared these slides. And it really struck me the first time I saw them. Look at all the water on the surface. If you add all the freshwater and the surface freshwater in the United States, add it all together, every creek or stream or river or lake, add it all together, you would have to multiply that by 20 to get the water that's in the Great Lakes.

Great Lakes are huge. Some of them are very deep. And the Great Lakes contains 5500 cubic miles of freshwater, 6 quadrillion gallons of water. It's 90 percent of the US freshwater supply. And if you emptied the Great Lakes out over the states of the United States, ignored all the hills, mountains and so forth and you spread the Great Lakes out over it, we would be under 9 and a half feet of water everywhere in this nation. It's simply a huge amount of water.

Let me ask you another question. Which state of the union, other than Alaska, has the greatest amount of shoreline? Florida? California? Michigan, of course. You knew that or I wouldn't have asked it, right? But you didn't know before. Michigan has more shoreline than any other state except

Alaska. We also have 900,000 boats.

And I'll talk about invasive species in just a minute and you can understand why we're concerned, because the average boat owner in Michigan – and there are 900,000 boats in Michigan, by the way, one for every 10 people – every 2 years, they pay \$200 to clean the bottom of their boat from the zebra mussels, the eggs, and so forth.

But what I want to show with this slide, the Great Lakes look pretty big where they are, right? But I never realized just how large they are because you're so used to seeing them there. They belong there. And so, what happens if you place them over Texas, okay, Oklahoma, Kansas? Look how much of the United States they cover. It's really striking because you don't see them there normally. Or in California, they cover most of California and up into Nevada, Oregon, even stretching into Utah. Especially when you look at it compared to Europe.

Notice it covers a good share of France, Germany, Switzerland, parts of Italy, Eastern Europe and so forth. Just huge, huge amounts of water and a very, very valuable resource for us because as water becomes more scarce, it is going to become more important to Michigan's economy. And any company that needs copious amounts of water for its processing will find Michigan and other

Great Lakes states very attractive. We have threat, the invasive species that I mentioned a moment ago. This is the Asian carp, which was originally brought into the catfish farms in believe Mississippi and Louisiana and so forth. They're bottom feeders. They kept the weeds down in the catfish ponds.

And this was all fine until there was a big flood and the fish got into the Mississippi. They've been marching up the Mississippi ever since. They come in various sizes. These are large samples, about 150 pounds. They like to jump. They love to jump. And so it's very common -- most people fishing the Mississippi take a garbage can cover along to fend off the jumping Asian carp.

There's a new sport I just learned about two weeks ago. There's a video out, and I just could not get it in time for this, a video showing fisherman out with bows and arrows shooting Asian carp as they jump. That's a totally unique way of fishing. So, that's one.

But look at what zebra mussels do to a water intake pipe. And we are spending -- we have already spent well over three billion dollars in the Great Lakes cleaning water pipes, getting zebra mussels out of them. I have heard the figure is something like 18 billion total for all the damage to the Great Lakes, the boats and so forth. So, obviously, we face a serious problem with this.

The gentleman at Grand Valley State University, which is in my

backyard, has done a study in which he shows – he hasn't convinced the world, but he shows to his satisfaction that the net gain to the economy as a result of the Saint Lawrence Seaway is less than the cost to the economy of dealing with invasive species.

One I haven't shown yet is the sea lion parade, which was the first major one done in Michigan for 75 years. We spend several million a year trying to deal with them, mitigate the damage, and they're still there and the cost is cumulative.

Overall, Cornell University has estimated that overall both terrestrial and aquatic invasive species cost this nation 137 billion dollars per year. That's big money. That's a good – take a good share of our defense industry. And yet, it just goes on and on. The aquatic is a smaller part. We're estimating about 13 billion annually for that.

So, we have definitely problems in our lakes in terms of our fish and if the Asian carp manages to get into the Great Lakes, which we are desperately trying to stop with electronic barriers, that would totally change the ecosystem of the lakes and could destroy the fishery.

Well, thank you very much for your attention. And I've covered in somewhat random fashion a number of issues here. But I hope you get the flavor

of Michigan is in bad shape at the moment. It's been leading the nation for many, many years in manufacturing, but we definitely need to improve. We may need help from other states and particularly from the federal government to recover from our current slump. But we have a wonderful state. The Great Lakes are an incredible asset to this nation, and every single one of us has to work on competitiveness if we're going to maintain our economy the way we are used to having it.

Thank you very much.

(Applause)

MR. KATZ: Yeah. I think what we should do now is take some quick questions because the Congressman needs to return to the Hill for some votes. So, any questions from the audience?

Right over here. And if you could, speak into the mike.

FEMALE SPEAKER: When the Congressman said that STEM, he said that we're preparing kids for the technical workplace and the future depends on math and science.

Could you give me a little bit more about what types of – what are we going towards here that math and science is key? I know it's important, but why is that the key?

MR. EHLERS: Let me give a couple of examples. First of all, as I mentioned, Michigan is an industrial state. We have a lot of businesses in my hometown of Grand Rapids and as any good congressman does, I tour the factories regularly. Factory owners – and they’re not doing this to lobby me, they’re just proud of their facility. In fact, I get invited to open new pizza stores because the owners have saved for years to build this pizza shop and they want – they think it’s important that I come there and show support for it.

But you tour the factories. Twenty years ago when you went through the factory, you’d see a whole line of lathes and milling machines and people working on them by hand, you know, turning the screws by hand, measuring with micrometers. You walk in the modern factory, you won’t see any of that. You’ll see \$700,000 milling machines controlled by computers, run by operators earning \$80,000 a year because they know how to program that computer.

And education is everything. The owner of one of our manufacturers – manufacturing shops has a standing offer with his employees because he only hires high school graduates. He says anyone wants to go to college, I will pay you full pay, but you will only work 20 hours a week. The other 20, you go to school and study.

So, he pays the whole shot. And I asked him, you know, do you have them sign an agreement that they will stay after they get their degree. I said, I don't need to; no one has ever left. I mean, it's that type of workplace to date, highly educated and technically demanding jobs.

The Chinese caught onto this 20 years ago, so did the Indians. And they both decided their students should learn math and science. In China it was easy. They just said you will take math and science, period. It's a dictatorship. China as a democracy had a more difficult path. They were very clever about it.

They developed this institute modeled after MIT and Cal Tech. They studied both MIT and Cal Tech, built this great institute, and somehow persuaded all the parents in the country that they should get their kids to study hard so they might be able to go to the institute. Now of course, only a tiny fraction could, but in the meantime, all these kids were studying math and science. And if they didn't get in the institute, they could go to the universities and do other things.

But the workplace is increasingly technical, almost every workplace. And our educational system is not doing well. I recall when I was on the state legislature there was a person who owned a number of 7-11 stores in the

Lansing area. He was looking at his numbers one day and realized he was losing \$100,000 a year in loose change – I'm sorry, wrong change.

In other words, if the cashier gave the wrong change -- and as you know it's a one way street. Technical terms, it's a diode. The money always goes up if there's a mistake in change and the customer benefits. They just put it in their pocket and walk out the door. If you give them too little, then they say hey, you made a mistake and let's change it. So, the money is always flowing out, \$100,000 a year.

He instituted a simple arithmetic test for all his job applicants, 10 questions, addition and subtraction. Fifty percent of the people who applied scored less than fifty percent. I mean, he just had to say you don't have a job. And his losses went from \$100,000 a year to \$5,000 a year just with that simple little test.

That's just one minor detail. But all across our spectrum, this is a knowledge economy in almost every job. And if you don't have knowledge, you are not likely to get a good job, meaningful employment.

MR. KATZ: One more question.

FEMALE SPEAKER: Back on Great Lakes restoration and aquatic invasive species and some of those issues. Are there – have you been able

to identify friends and champions for the Great Lakes outside the delegation from the Great Lakes states?

MR. EHLERS: You mean in the congress?

FEMALE SPEAKER: Yes.

MR. EHLERS: Yes and no. There are some. There are some members of congress who are environmentalists. They regard this as an environmental issue, so they will support it. But by and large, one of the reasons I worked so hard in this is because the Great Lakes region is losing power every 10 years with the reapportionment of the congress.

Michigan used to have 20 seats. Now, we're down to 15. We're likely to lose one or two more in a couple of years. And that's true of most of the Great Lakes states. So, the water hungry southwest and other parts of the country are gaining political power, but that's one of the reasons I spent so much time in congress just trying to educate people on how important this is.

And when I first got here, I tried to pass a bill. I was going to introduce a bill to prohibit diversion of water from any of the Great Lakes to anywhere outside of the watershed. Governor Inger, one of the smartest politicians I've ever known called me and said hey, don't do it. And I said, why not, I thought you'd like it.

And he said, no, no, no, because if the federal government passes a law saying that you cannot take water out in that stance, that means the federal government has the power to pass a law that will take the water out. He says leave the power in the hands of the Great Lakes governors. So, Bart Stupeck and I got a bill through that increased the power of the governors to prevent diversion of the water, and I think that's a better solution thanks to Governor Inger.

But I've spent a lot of time trying to educate my colleagues about the Great Lakes environmental issues. That's – if they haven't seen it, it's hard to do. But what I've been doing on the Great Lakes, when Mike Lovett, who was the governor of Utah became Administrator of the EPA and I had chaired a subcommittee that had jurisdiction over part of the EPA.

So, he paid me a courtesy visit. I spent a half hour bending his ear about the Great Lakes because I was concerned the biggest lake he had ever seen was the Great Salt Lake and I didn't want him to think that was an example of a big lake. And he just grabbed hold of it and ran, an immensely capable individual. That's why he's now secretary of HHS. And he grabbed hold of it and ran, convinced the president to issue an executive order establishing a Great Lakes collaborative.

We've got 1500 people working together. In May, we had

representations from all the Great Lakes mayors, all the Great Lakes governors, the Indian tribes, environmental groups, and I represented the Congress. Fifteen hundred of us worked together to develop a recommendation for how we can save the Great Lakes. And tremendous support, big rollout in Chicago, big press conferences, very well received.

I now have a bill on congress which will put into law the recommendations of that group, and I'm hoping I can get it passed because that will put us on a permanent road towards improving and protecting the Great Lakes. But it takes a lot of work, a lot of job hunting.

MR. KATZ: I want to thank you, Congressman, for setting the national federal context for today. And I'm convinced we probably need a few more research physicists sitting in the House and the Senate.

MR. EHLERS: Please, please.

MR. KATZ: If there are any here who want to apply –

MR. EHLERS: Yes. I'm aging. It's time for me to move on.

Find some others to run.

MR. KATZ: If we could thank the Congressman, that would be great.

(Applause)

MR. KATZ: Thank you very much.

I'm going to ask John Austin to join us. As I said before, John is a nonresident senior fellow with Brookings. He also is the vice president of the Michigan State Board of Ed, and he lectures at the University of Michigan and various schools. And as I said, he is really the key author of the vital center report.

John?

MR. AUSTIN: Thank you and don't let Congressman Ehlers retire here any time soon. We still need your leadership on behalf of not just Michigan but the whole Great Lakes Region. But you also educated me that there's another asset we have I didn't appreciate in the region. We also are the home to a new extreme sport, this Asian carp spearing or shooting that is very popular among generation X, Y, or whomever it is.

I'm going to move briskly to introduce you to basically the analysis and the recommendations coming out of this Great Lakes Economic Initiative because I want to get to our panel and our – the leaders from the Great Lakes Region who I thank for coming and who represent the fulsome geography as well as the real thought leaders in education and economic leaders from our region on hopefully they and we will be persuasive in suggesting that it's not just

us in the region, but we as a nation and our friends in Canada, we have a shared economic stake in the transition of this region from its historic role of creation and leadership of the industrial economy to leadership in today's knowledge economy.

And the first understanding that we came to and tested really in this initiative was this reality that this region centered on the Great Lakes but also, as it developed economically along the Ohio River and the upper Mississippi watershed really is a region that has not only a special role but a unique place, a unique story, a unique economy that has been instrumental in America's economic and social history and is incredibly important today as we look ahead to how we compete in the global economy.

The story of this region as it was opened up with incredible natural resources, the richest farmland on earth, abundant raw materials; we gave away the land, free land to the farmers. The pre-labor versus slave labor in the South helped develop this region. Through immigration, waves of immigration from the world to work on the farms and our factories that developed there, a primacy on education, the value and the creation of what we'll touch on again of this commitment to public universities and land grant universities as a driver of education, human capital, and commerce in industry, we really became the bread

basket and the industrial cockpit of the world and certainly America's economy.

Incredible industries were forged in this region, ranging from original, agricultural, and agricultural processing, the assembly line, the automobile, the aviation industry, the oil industry, and some non-alliterative industries were all created in this region.

We were the arsenal of democracy for two world wars and more recently, as the new innovations that changed the world economy like the internet.

When Al Gore created the internet, he got serious help from the University of Michigan, Minnesota, and the University of Illinois, where all the basic technologies of the internet with federal funding were created.

And so, our suggestion to all of you is that any agenda for America's competitiveness touching on what Congressman Ehlers has been working on has got to include and be driven by the Great Lakes if we want to see robust economic growth, if we want to see sustainable economic growth, and if we want to see inclusive economic growth.

This obviously is a region in transition. These are the images of the rust belt that we carry and sometimes are preoccupied by, which I think mask the emerging reality. And our job is to fuel the emerging reality of this region from the rust belt, both perception and reality, to its emergence as the tech belt.

And you'll hear more about the tangible ways we are developing this region as a tech belt from some of our panelists, where we have tremendous opportunities and are already in a position to lead in emerging fields of IT, in life and biosciences and healthcare, in energy and next energy technologies, as well as the advanced manufacturing new materials that can drive the US economy.

And this is a current reality. This is Chicago, a global city. Our metropolitan communities are the locust for robust growth in leading sectors that are important as we compete globally.

As we look at the metropolitan communities that are the nation's leading concentration in high value export industries, obviously, motor vehicle parts, aerospace, pharmaceuticals, measuring instruments, and biomedical devices, we see significant leadership coming out of our Great Lakes Region.

Similarly, in the areas where we are overly concentrated are disproportionate shares of leading edge service industries from finance to information technology, legal services are also growing and emerging in this area. So, we're a center for global leadership and key clusters.

Congressman Ehlers emphasized innovation and the innovation infrastructure that we have at larger scale than probably any place on earth to create the talent and create the new technologies that can drive the economy and

create new jobs. A third of the nation's new intellectual property, new ideas are created in our region in our private sector and our firms working often in conjunction and powerfully with our research universities.

This picture is so important. We don't appreciate as a region we created purposefully this world leading network of public learning institutions, public universities, as well as a rich network of community colleges and other educational institutions that is second to none on earth. The greatest number at greatest scale in terms of its output of people and new ideas are in this network of research universities, including our Canadian partners.

Industries like IT and life and medical and biosciences only happen in cluster around the location of these research universities. When we look at the 100 leading universities in the world, 19 of those are in this Great Lakes region. That's more than the 15 that the Northeast and Mid-Atlantic have combined. It's more than the 13 on the West Coast. These are universities with global reach. They're leading the global discourse and discovery of new ideas, education of people, communication and communion of people across the globe.

The Chinese are coming to these institutions to try to copy them at scale. And we have them, and we uniquely created them to educate every man and woman and to drive commerce and industry in our region.

We punch above our weight in production of the STEM discipline educated people that the Congressman was talking about. We produce in this region in that oval 38 percent of the nation's bachelor degree holders, 37 percent of advanced science and engineering degree holders. We are the locust for producing that the talent that the nation needs to compete.

And as we look at the emerging countries that we're engaged in economic competition with and communion with, Chinese and India, this is a region that can be America's driver in terms of the talent creation and already is exporting talent to the world.

When we look at the scale of our economy, in this region and when we add our highly integrated true Great Lakes economy, which includes our friends across the border in Canada, it's the third largest economic region – if it were a country, it would be the third largest GDP on earth. And it is the largest in terms of the binational trade of any place on the globe. One point eight billion dollars today flows between us and Canada, which is the largest international exchange of commerce on the planet.

This is arguably, as Congressman Ehlers and all of us will touch on, incredibly valuable resource essential to really America's sustainable growth.

This region, we have a fifth of the world's freshwater. It is – we have no

hurricanes. It's very friendly. We can be a platform for sustainable population and economic growth when much of the Sunbelt, which is growing -- if you read US Today and others, we're still seeing population growth. We can accommodate that growth.

We have incredible amenities in terms of our natural features as quality of place and the environment and proximity to recreation. And the ability to enjoy the outdoors is important, particularly to our young knowledge workers and others. We have those assets, and we have those assets to develop, particularly, as we open our up waterfronts and waterways and our rivers.

As Mayor Barrett from Milwaukee and others around our region will I'm sure illustrate, incredible opportunities for water based development as an attractive driver of our economy, and we do have the opportunity given our research, public and private infrastructure to be the nation's leader and to solve the problems we've got to solve as a country and a world in terms of clean energy technology, clean coal technology, clean water technology that the world needs, including how we improve our transport and our traditional industries such as autos that we have relied on.

If we also develop the region, which is highly populated in densely and closely connected metros, if we develop within our regions a transit and

transportation and links between us, it would also be a driver of sustainable growth. We have a well-developed air infrastructure. These are airports with high travel, and this is the plan. We have a national plan for high speed rail. If we implemented it, look what it would do. It would fuel the development of our region in particular as well as the corridors like the Northeast Corridor. They're already functioned as highly integrated economic units and it would be a – go a long way, particularly as we add in the Canadian connectors to Toronto towards fueling sustainable economic growth in our region.

And we have in place already in our great cities that were built in our region – here's Tom City, Milwaukee – assets that matter to the new economy. Today's economy values places, including our great cities that have existing amenities including waterfronts, including historical buildings, including people who want to live and work in an urban setting. The civic institutions, the educational institutions, the research institutions are hubbed there.

We have these assets that already exist in these cities for sustainable growth that are increasingly valuable in terms of the way the new economy is. And people are choosing and able to locate both their firms and their work. They want to be in these vital urban communities. And we have those places.

We also can and must be a region that leads as we have historically in providing inclusive economic participation for all our citizens. Our region was the region with its great industrial enterprises and its commitment and fight for worker rights, labor rights, and civil rights.

We built the middle class from Henry Ford's five dollar a day to the work of organized labor to negotiate good terms, good benefits that really spread the American dream to more people. Our workplaces in our region were the leaders in integration of blacks, women into the workplace. The shop floor is the most integrated institution perhaps in America.

And we've opened the door and we've benefited by waves of immigrants who came to build and populate our region. And so, we must lead the way in terms of remaking an inclusive society. We in this region also created the model that employers would pay for your healthcare and that you would look to your employer for your pension. That was post-World War II. Our great industries with labor cut that pattern for America.

Now, obviously, this is one of our great achievements, but it's a great competitive challenge for us, for the nation if workers, particularly in firms that have been around like ours have to rely on their employers for healthcare and they look to their employers to provide their pension, often a defined benefit

pension.

Those are hurting our firms' competitiveness, particularly firms in our region to not have portable accessible healthcare. They're hurting our workers ability to flexibly move in the economy, to adapt and to move to new both skills and jobs. So, this creation of an employer sponsored benefits system is our own in the region which spread to the nation. It's one that uniquely hurts us. But we need to remake and help remake as a nation to have flexible accessible health and pensions for all our citizens.

We, as a region, historically benefited from these waves of immigrants. As is noted or if you pick up the paper today, we're still losing some of our domestic population to the Sunbelt; however, we're being refreshed, and we must appreciate that. Waves of immigrants are coming and repopulating our cities, proving new energy, entrepreneurial contributions to our economy, which are invaluable.

And I think it's real important given the immigration debate that we appreciate this dynamic of many of our older cities losing some of our domestic population but benefiting from newcomers, which on balance, our immigrants coming to the Great Lakes and Midwest are highly educated. The darkest blues are the most well-educated or highest shares of immigrants with

bachelor's degrees or higher, often better educated than our domestic population, which sometimes lacks a post-secondary education given you didn't need one to work in the factory economy.

So, our immigrants are a contribution to our talent base in the region and a source of renewal and strength in energy. However, in this report and in our work, we're trying to confront very directly many of our challenges which are unique to us too, including this dynamic of well, inclusive in the workplace in pioneering civil and social rights, we are left with the legacy of the most segregated urban communities in the country, which crimps our economy, which leaves people behind, and which we uniquely have to solve to move forward as cities and metropolitan communities that are thriving most successfully are thriving with diverse, rich, multiethnic, and racially integrated communities, special challenge for us.

So, as we put together recommendations which really our panels today are invited here to illustrate the power and promise and opportunity for all of us around two of these topics, we put together ideas of public policies that can – that we can work on together in our states, as a region, and as a nation that can really fuel our regional economy and its transition from hegemony of the industrial economy to leadership in the knowledge age, as well as help us as a

nation compete.

We're proposing that we, as a region, should leverage our great research infrastructures to be the place that develops the new technologies, next energy and related that the nation needs. As Congressman Ehlers would argue, we as a nation should up our ante in terms of basic and applied R&D, and then we can put it to work the region as many of our panelists will indicate.

We can commercialize those new technologies in our communities and across our region as again some of our guest here will talk specifically about how we are already doing that. And we can grow the talent. We can produce the highly educated people given these incredible learning infrastructures if we as states and if the nation moves the kind of STEM agenda and support for incentives for those education investments.

We also in the region could create a common market ourselves for human capital where we're working to leverage the highest quality, lowest cost education infrastructure on earth to allow cross state tuition to be comparable, allow portability and flexibility of credentials across states and with Canada, which would grow us as the common market as the locust for education in the region and in the country.

We're going to talk specifically with one of our next panels about

this idea of us as the North Coast, Freshwater Coast, Third Coast, this reality that the coasts are a very attractive and beautiful and viable place for not only high quality of life and knowledge work and knowledge workers to grow and thrive, if we purposefully work as communities, as states to preserve, clean up our industrial sites, enhance, acquire more of the beautiful – and preserve the beautiful natural features we have, as well as market them, brand them, encourage all of you to come visit and spend your dollars and go Asian carp fishing, we will thrive.

And a simple federal delivery that would support our economy – and we're making an economic argument in this work – is to follow through on the 20 billion dollar shared plan among our states and the feds to clean up the Great Lakes and rebuild the sewer systems, and protect invasive species. We're suggesting that's a huge economic boon for the nation and for the region and would support sustainable economic growth in our area.

Two of the topics that we're not going to spend time on today but we're coming back to are how do we fuel and elevate this understanding of the opportunity for true powerful economic integration with our partner in Canada that would be a boon to both our economies and how do we elevate that understanding in our discourse about national policy. Because it is a huge boon

for our countries, and it would particularly fuel the Great Lakes region economy where that economy is centered.

We've got to as a nation and if we can reach towards national schemes for healthcare for all, it would certainly help all of us. It would help our workers; it would help our industries. In the meantime, if we can't get there, we must put in place state and perhaps regional portable universal defined contribution pension systems to allow our workers to move flexibly with security and to provide health access that would allow again our workers to move with security to new jobs and opportunities as well as we should help our firms and our industries compete.

And we have to remake the way we pay for post-secondary education for all our people so that emerging young adults and existing adult workers. We have more folks in our labor market in the Midwest with some or no post-secondary education but no degrees or credentials. We need to put together a package of resources like a new GI bill that would pay for post-secondary education for all and fuel our economy and our region and our country as the talent producer for the nation.

So, as we – beautiful shot of Pittsburgh – as we move ahead in this initiative, some of our next steps, not all, are going to be to build this network

of leadership in our region, including trying to help and encourage our mayors, our elected officials, our congressional delegation, our governors, and aspirants for president to appreciate some of the main lines for policy and federal policy as well as regional actions that can support our economy and do the deeper research and homework in policy development around key features of our recommendations.

We're coming out with a – in September an economic impact study that leading economists, including one who could not be here, Ned Gramlick of the former Federal Reserve Board Governor and others have been participating in that's going to put a price tag or an economic benefit dollar amount on following through on Great Lakes restoration. And that's going to come out in September.

We're working with our Canadian friends to color in that sort of vital center report with a true analysis of the Canadian economy and the binational policy directions that can fuel our region.

And we're initiating some of these additional research pieces, such as what a federal energy technology strategy should be that fuels our nation's next generation energy technologies and also our region, how we develop this portable package of resources to pay for post-secondary and that we put together and

extend the kind of venture and commercialization funding efforts in our region that can help us grow more businesses and jobs, leveraging this incredible creation of new intellectual property and new ideas that we initiate in the region, keep it in our region instead of leaving us to go to the coasts as the internet jobs did so that we can build – rebuild our economies and transition our economies.

And we're going to talk specifically with some of our panelists about how we're taking steps to do that.

So, thank you very much. Thank you for being here. And I look forward to having the real leaders from our region illustrate with power and purpose how we can work together and help our nation and our regional economy succeed.

Thank you.

(Applause)

MR. KATZ: Thanks, John. I'm going to ask for the first panel to come up here.

Dick Longworth is going to moderate it. He's a senior fellow at the Chicago Council on Foreign Relations. Many of us in this town remember when he was a senior correspondent for The Chicago Tribune. And I will do an infomercial on his book. He has a new book coming out Caught in the Middle on

the Midwest in an age of globalization, and that will be published this winter by Bloomsbury.

So, Dick Longworth. Thanks.

MR. LONGWORTH: Bruce, thanks very much for the kind introduction and especially thanks to you and Brookings for supporting this work and the report on the Great Lakes and for putting on this program.

A special tip of the hat to John and Brittany for these wonderful reports and the great work you're doing. It is terrifically valuable, and I'm so glad to see you and Brookings collaborating on this.

Our first panel today is on fueling the economic engines of the Great Lakes Region, really refueling, I would say because the Great Lakes were the economic engine of the industrial age. We won the industrial age. We dominated the industrial age. Okay, you know, that age is gone. We're into the global era now. So, how are we doing?

Seen from Chicago, there's a sense of frustration really that there – as John pointed out, there's so much talent, so much intellectual power, so much research capacity in this area that seems to add up to less than the sum of its parts.

This panel will talk about new technologies and talent generation,

really creating a knowledge economy. But there still is a feeling that the region lags not only the coast but lags behind its own potential. And there's so much to do. The work that John is doing is valuable. The work that our panelists are doing is terrifically valuable on this, because they deal with this on a day by day basis. This is what they do for a living. And I'm delighted to introduce them.

Congressman Ehlers mentioned several times the work that's going on at Michigan State. Dr. Lou Anna Simon oversees this. She knows Michigan State from the bottom to the top. She got her PhD, her doctorate there in Administration in Higher Education. She has taught there. She was an assistant director of the Office of Institutional Research and then was provost and vice president and president since 2005.

Dr. Simon is committed to applying education in many areas, especially in economic development and globalization, which is what we're talking about today. She is a true servant of Michigan's, has been on a number of state boards on education and economics, and she is the director for the National Association of State Universities and Land Grant colleges.

The next speaker after that will be Baiju Shah, who is president and CEO and also a founder of BioEnterprise, which is a partnership in Cleveland of Case Western Reserve University, Cleveland Clinic, Soma Health System, and

University Hospitals. It's a business formation, recruitment, and acceleration initiative to support the growth of bioscience companies. And there's a lot of people who feel that bioscience, biotech really is the future of this Great Lakes Region.

BioEnterprise provides management advice, business development, and access to capital to privately held medical device, biopharmaceutical, and healthcare service ventures in the Cleveland area.

Before joining BioEnterprise, Baiju Shah was with McKenzie and Company where he played a leading role in growth and business building. He is a Cleveland native and got his JD from the Harvard Law School and his BA from Yale.

Following him will be John Manzetti, who is president and CEO of the Pittsburgh Life Sciences Greenhouse, which helps start up companies get their ideas and products from concept to commercialization.

Before joining Pittsburgh Life Science Greenhouse, Mr. Manzetti was president and CEO of M2 Partners, which was a management services firm providing advisory services to startups in the life sciences and high technology industries in the Pittsburgh region.

Before that, he was CEO of Nomas Corporation, which was a

leader in the field of radiation therapy treatment solutions for cancer patients. Mr. Manzetti holds a Bachelors of Science and Business Administration from Geneva College and got his MBA from the University of Akron.

And our last speaker will be Terry Thomas, who has served as Senior Advisement for Economic and Workforce Development in Ohio. He is now Ohio's Chief Workforce Development Officer and is leading the Strikland Fisher Administration's effort there to make the state a leader in talent development.

Before that, Mr. Thomas held senior level position in Ohio's Executive Legislative Budget Offices. And more recently, he helped found Ohio's Community College Association. Mr. Thomas has his bachelors from Penn State and his masters from Ohio State.

Dr. Simon, could I ask you to lead off?

DR. SIMON: Thank you very much. It is a pleasure to be here. And John, it's good to work with you. We began our work with the Cherry Commission on developing a plan for education. And that project suggests that for all of us it takes a lot of persistence in order to have a long range plan in the current economic and political climate in the Midwest.

And one of the messages today is that the role of universities, I

think is to provide some impetus for that persistence. There are numbers of reports in each state about how to do things. And I'll use the Cherry Commission in Michigan as an example. But once those commissions are done and all of the university presidents who sit on them leave, no one takes the responsibility for worrying about the outcome of the report unless it's useful in arguing for resources for your university. Then, we're pretty good at that.

And what I'm arguing for in the state of Michigan in our responsibility along with the State Board of Education that John's a part of is collectively, we need to hold ourselves accountable for those benchmarks and recognize unless we work together to organize those benchmarks around key workforce development, there's not the persistence over administrations it takes in a state to really make the changes that we need to make. That's true on the environmental areas. I agree. I would posit as well, but I know a bit more about workforce development.

The CIC, the Big Ten plus the University of Chicago represent an important resource for this region. It is celebrating its 50th year as an academic consortium. I would venture to say that hardly anyone in this room knows it exists. And it is done over a period of time, a great number of conferences, reports, purchasing agreements, the latest of which is a deal with Google to do all

of the research libraries in a digitization of that material.

What we're trying to do with the CIC, the Big Ten plus the University of Chicago, is sponsor a conference next spring on what our role is in terms of economic development for the region and what we can do as institutions to talk among ourselves regarding economic development and our role.

Now, obviously, we compete with one another, not simply on the football field but for grant and contract activity. If you look at the most recent announcements on the energy grants from the Department of Energy this week, Miss U, State, and Wisconsin were fortunate to get one on biofuels and that's really critical for the region.

But if you look at our proposal, it is one of the few that included other institutions in the region. We found that many of the institutions in the region that were competing for that grant decided to partner with places outside of the region to improve the competitiveness of their proposal. Because there's a general sense that if you could partner with someone outside the region, your chances of success are much higher, in part because government support that's not required for a grant but is useful as they're evaluated is more easily acquired in a state other than a place like Michigan.

There's also a perception that by working together, we don't take

advantage of the issues of venture capital, commercialization, all the kinds of things that happen that are most often associated with the coasts.

So, part of what the CIC has to do is shift – and what we’re trying to do is shift some of its orientation back to this economic development, economic competitiveness agenda and to do it in areas other than STEM. So, a preview of coming attractions is to see if we’re going to be successful in doing that.

The other thing we’re doing in Michigan and we’ve it in the last year is align the three research universities with medical schools, Michigan, Michigan State, and Wayne State University into what’s called the University Research Corridor. The University Research Corridor, if you look at its fundamentals actually has more federal research dollars right now than the institutions in the Research Triangle in North Carolina, a little known fact as well about the capacity for research in Michigan.

What we’ve done is align this set of institutions and try to think about what common objectives we could have across our institutions to move the state forward in terms of its economic competitiveness. And energy is the one we’ve identified as the first piece, because we’re all strong in it and also, it’s critical for the success of the automobile industry. And our capacities are

complementary.

So, we want to be able to work on that kind of strategy. You'll see that as well in the life sciences, biotech as we work on a defensive strategy to worry about what's going to happen as Pfizer pulls out jobs from Michigan, not simply that automobile jobs are leaving and what can we do together to really provide an intellectual magnet for the state of Michigan.

Representative Ehlers also indicated another strategy that I think is important for universities because every book now says that in order to be successful you need a research university in your backyard. There are not enough resources to create research universities at the level that folks want to do that under the argument of economic competitiveness because this is a global marketplace for universities not simply a local marketplace for universities to become more research intensive.

Every university is going to have to become more research intensive. That'll be the nature of the game. But it's important to think about how to utilize and leverage the research, the intellectually recognized research universities in everyone's backyard. And what that requires of us, and I'll pick Michigan State, is that we no longer work in our backyard. And what we've been thinking about at Michigan State is really a transformation of old land grant

mission into a mission that really deals with a fuller ray of economic development work and a responsibility for the state in terms of economic competitiveness and quality of life.

So, what Representative Ehlers has commented in terms of the expansion of the College of Human Medicine in Grand Rapids was in part to leverage those assets for the community to assert its economic competitiveness. We are looking at a similar set of arrangements on the bioeconomy and Holland using an asset that was been abandoned by Pfizer. Because we have to change the way we do business with respect to our community partners, not simply in our local region, our local space but around the state in order to make a difference.

And I would also posit that we need to change the way we operate and collaborate around the region in order to make a difference. And rather than simply looking at the asset that is in my particular area and saying if they don't have it, I have a gap I should fill, the question is is there an asset that can be applied in a different way.

We at Michigan State are also working on regional economic development networks. And this is my final point to you in terms of collaboration. All of the areas now have a local economic development network that they often label as regional. The regional economic development networks

don't talk to one another. They compete against one another. They send delegations to foreign countries, one from Grand Rapids, in our case, one from Detroit, descending on the same foreign country to ask for the same economic competitiveness arrangements within a week of one another.

Now, if that isn't confusing to the folks we're visiting, it surely doesn't multiply or leverage the chances that a location will be in Michigan or in the Great Lakes. So, we're working as an institution to become now a part of some relatively far flung in our state economic development arrangements.

We are now a member of Detroit Renaissance, along with Wayne State, who was there always, and the University of Michigan has also joined. But there are much more in that catchment area of Detroit.

We are a member and part of Right Place in Grand Rapids. Our partner in Holland is Lakeshore Advantage. We're working with Southwest Michigan Economic Development arena. We're working with Travers City. And eventually, I'm going to get them to talk to one another. But I have to be the glue to do that. And that's also not a typical role for a university of the size and stature on that list is to worry about being the glue.

We have to do that in economic development. We also have to partner on the environmental issues you're going to talk about a bit later. And

that's an important component for those research universities to do. And what that means is that you all and the systems of accountability have to give us credit for being an assist leader.

The current way in which universities are ranked, rated, and otherwise treated is when we score. And it's better off if you score and don't partner with anybody because you get more money. And that helps rankings and ratings, and all the analysis that Brookings does is based on being a scorer.

So, the challenge I think for the Brookings approach and for this regionalization is how we identify the assist categories necessary for this region to be successful and how universities can be both recognized and credited with being an assist leader for the economy of this region.

Thank you.

(Applause)

MR. SHAH: Thank you. Thank you, John, for organizing this forum and showcasing what's happening in the Great Lakes as well as your vision for what should be happening in the Great Lakes as we go forward together as a region.

It's an honor for me to be here at the Brookings Institution. It's a world that I don't know very much about, and I'll be honest about that. But I

realized today that while Brookings is a nonpartisan Institution, I did decide to wear my blue tie just in case.

I applaud you for taking on this issue of competitiveness and innovation and in the environment and sort of in that vein bringing up my favorite color that I think transcends our conversations today, which is the color of green. Green not referring really to the environmental panel that will follow or certainly the Spartan green from our colleagues in Michigan, but green in terms of money, which is all about economic development.

And economic development really reduces down to how do we generate more wealth, how do we generate more jobs. In our region, both defined in the Cleveland area, which is what BioEnterprise is focused on but the topic for today's morning conversation really throughout the Great Lakes region.

John, I think, invited us to talk about an initiative that we've started. A partner of mine, John Manzetti will be speaking after me in terms of a collaboration between Cleveland and Pittsburgh to really drive the development of our regional healthcare economies, our healthcare industries, our healthcare institutions, and also, our healthcare startups.

And to understand a little bit about what we're embarking on, I thought it would be useful to spend maybe two minutes telling you just a word

more about BioEnterprise and what we've been up to and then I'll switch gears to why this collaboration with Pittsburgh makes strategic sense for us and hopefully can serve as a model for what we might be able to expand on throughout the Great Lakes Region.

BioEnterprise, as Dick described, is an accelerator in Cleveland. It was started about five years ago by the State of Ohio. Groups like Nortec Original Technology Organization are institutions that Dick listed in the private sector to really accelerate healthcare innovations and healthcare entrepreneurs located around Cleveland.

Whether those innovations were coming out of our institutions and their technology development and innovation laboratories or whether it was coming out of ideas from entrepreneurs within our broad medical industry that's in the Cleveland area, our goal was to preserve more of those ideas and more of those technologies within Cleveland for development rather than watching them drift off to the coast for venture capital and eventual development into companies.

And the goal that we set out for ourselves – let me – what it takes to grow these companies in any region is really three components that have been touched on by the previous speakers. One is the technology, which clearly there

is an abundant amount of technology being developed not only within our region of Cleveland but throughout the Great Lakes.

The second is talent. And I think John had a number of interesting slides that really talked about the human capital that is resident within the region as well as drawn into the region from immigrant populations and immigrant graduate students. And then the third thing is really the capital.

It's the three things working together, technology, talent, and capital that allows for startup companies to grow within a region. BioEnterprise was set up by the players that I mentioned when I started really to bring those three elements together so they were able to find each other easily within a region like Cleveland and that therefore, have a greater chance of commercializing those innovations and creating a wealth in jobs that would result from that commercialization within our geography.

Our goal when we set off with BioEnterprise in 2002 was to accelerate Cleveland as a region in healthcare commercialization to a region that would be perceived by the venture capital community as a peer of Research Triangle, as a peer of Minneapolis within a five year time frame.

(Recess)

MR. SHAH: Our goal was to preserve more of those ideas and more of

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those technologies within Cleveland for development rather than watching them drift off to the coast for venture capital and eventual development into companies.

And the goal that we set up for ourselves, let me -- what it takes to grow these companies in any region is really three components that have been touched on by the previous speakers; one is the technology, which clearly there's an abundant amount of technology being developed, not only within our region of Cleveland, but throughout the Great Lakes; the second is talent, and I think John had a number of interesting slides that really talked about the human capital that is resident within the region, as well as drawn into the region from immigrant populations, immigrant graduate students; and then the third thing is really the capital. It's the three things working together, technology, talent, and capital that allows for start-up companies to grow within a region.

BioEnterprise was set up by the players that I mentioned when I started, really to bring those three elements together, so they were able to find each other easily within a region like Cleveland, and therefore, have a greater chance of commercializing those innovations and creating the wealth and jobs that would result from that commercialization within our geography. Our goal when we set off with BioEnterprise in 2002 was to accelerate Cleveland as a region in health care commercialization to a region that would be perceived by the venture capital community as a pier of research triangle, as a pier of Minneapolis within a five year time frame.

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In the metric that we used to mark our successes, how much money are investors putting into companies in our region, and is that level of investment the same as Minneapolis, is it the same as North Carolina.

I'm proud to say working together with a broad number of actors throughout the Cleveland area, and certainly with the state of Ohio, we've achieved that goal over two out of the last three years.

And our new challenge, and this gets me really to our discussion here this morning about Pittsburgh is, the new challenge is really to sustain it, because it's the sustainability of that type of investment over time by the private sector and the growth of the myriad of health care companies that creates that flourishing biomedical region that we would like to see in Cleveland and certainly have throughout other pockets of the Midwest.

So as our board sat and thought about, you know, how do we sustain this over time, how do we make sure that what we've achieved here in a very short period of time continues, and most importantly, continues perhaps in the absence of government or not for profit intervention as we've had over the last couple of years in our region. One of the thoughts that came to mind quickly is, how do we increase critical mass? Critical mass is important. You know, we had a physicist, congressional physicist I guess, probably the only congressional physicist, lead us off this morning.

Critical mass is important in innovation for two reasons. Critical mass--

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the bigger an object is, the more energy it has within it. And the second thing that critical mass enables is really the power of attraction, it's the power of gravity, so the more the talent, the more the capital is drawn towards it.

And as we thought about how do we sustain the progress that's been made in Cleveland, it became a question of, how do we increase the critical mass that's in Cleveland that will eventually allow this to self-sustain and continue to grow on its own.

And therein lies sort of the look across the border, you know. We looked at a map and we thought a lot about, you know, how do we form collaborations, and lo and behold, right across the state border, closer to Cleveland than certainly Columbus is, which is our state capital, was the city of Pittsburgh. And Pittsburgh, in many ways, as many of you know in the audience, is very similar to Cleveland. It's a shared economic past, it's a very tightly aligned region, lots of sort of cross-family relationships, cross-cultural, cross-social relationships in Pittsburgh. And most important from where I sit at BioEnterprise, Pittsburgh had recognized its challenges, its economic challenges, at roughly the same time Cleveland recognized its economic challenges, and had committed to health care and biosciences being one of the driving forces for Pittsburgh's future.

So much like our region invested in a number of capabilities, including BioEnterprise, the Pittsburgh region had invested in a number of capabilities, including

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the Pittsburgh Life-Sciences Greenhouse, at roughly the same period of time.

As we looked at Pittsburgh and as we thought about this notion of critical mass, I'll give you a series of sort of statistics that give you a sense of what the combination of Cleveland and Pittsburgh have together.

In terms of research, NIH research, we heard a little bit about Michigan in a breath of research across the Michigan institutions. The institutions in Pittsburgh and Cleveland combined have \$800 million a year in NIH funding. That exceeds what's there in research triangle. It's almost double what is there in Minneapolis. Combined we have 700 health care companies, we have 25,000 health care employees today, again, far exceeding what's there in research triangle, far exceeding what's there in Minneapolis. And in our space of venture capital we've been able to track in the last two years \$350 million in venture capital to finance health care companies in both regions, again, a level that far exceeds those of the regions we're aspiring to be.

Now, what's surprising about this notion of critical mass as we think about sort of the power to track is that most people around the country, and probably I would say most people even within our own region, don't recognize how close these regions really are.

It's that dividing line, whether it's the state border or the football rivalry, which exists between the cities that people don't understand that you can actually have lunch in Pittsburgh and be back for late afternoon meetings in Cleveland. It's less than

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two hours apart; that's almost like from where we're sitting to Northern Virginia.

That enables collaboration, and that enables this notion of it's not just the collection of statistics that I've thrown out to you in terms of the amount of research or the amount of people and the amount of venture capital, but real connections and real collaboration between the innovators, the executives, the capital sources in both of those regions. And when we -- John and I, you know, took this on the road before we announced this publicly, we took it out to the national venture capital community in a large conference in San Francisco last January. When we described to them that you can fly into one of our regions and do business in both by just jumping in your rental car, easily doing meetings and fly back out, that I guess opened up their thought process as to where they ought to be spending more time as they're looking for the next new deal sources, as they're looking beyond the east coast and the west coast.

Our hope is, and this is a partnership that we've just announced I think in April of this year, but we've been working on now for many months before that, our hope is that by working together, we'll be able to increase those three elements that are really required to keep this region vibrant in health care, which is creating more and better competitive companies by perhaps paring technologies from institutions or entrepreneurs in different regions, by increasing the quality of the companies by pulling management teams together, drawing upon the talent that's resonate within both regions, and then by attracting both capital and talent into Cleveland and Pittsburgh, by being

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able to market the ability to do business, the ability to have second, third, fourth jobs, by looking at the companies and the level of innovation that's occurring between our two regions.

John asked me to close with sort of some comments or some thoughts on sort of what the role of the federal government could be in promoting this type of development, not just limited in the Cleveland/Pittsburgh quarter, but perhaps throughout the Great Lakes, to create really that transformation from a Rust Belt to a Tech Belt, and, you know, short of great earmarks and hopefully more energy projects coming our way in innovation.

And I think the federal government does have a role in promoting innovation that involves institutions, entrepreneurs, companies that cut across these artificial state boundaries.

You know, too often there are mechanisms that are set up within the state, certainly in the state of Ohio, that make it easier for me to collaborate and easier for my institutions to collaborate with groups in Cincinnati than it does to institutions in certainly Michigan or Pittsburgh, and that doesn't make a lot of sense, because in many cases, the right capabilities and the right technologies might be both closer physically, as well as located in institutions that are across the state border.

So I think there is a role for the federal government in encouraging the type of thinking that's been outlined in this Brookings report by supporting programs at

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the NIH, the NSF, the DOD, the DOE, and all of the other federal research agencies that promote innovation that occurs through the network that should be developed throughout this. So while we're waiting for the light rail to come to fruition, and hopefully, you know, some day it will, we can certainly create these innovation networks, and I think the federal government has a role in playing in setting the policy that enables that. Thank you.

MR. MANZETTI: Good morning. John Manzetti from the Pittsburgh Life-Sciences Greenhouse. First I'd like to thank the Brookings Institute and John for inviting me down here today. Also I'd like to -- I'm also thankful I have a GPS system to get me here.

It's about a four hour drive from Pittsburgh to D.C., and about the last 30 minutes was circling around this area, spiraling down and trying to get the right exit to get here off Dupont Circle, it was quite entertaining.

Building on the theme of technology, talent and capital, that's what I'll talk about here today, first I'll give you just a little data about Pittsburgh. You saw a photo of Pittsburgh that was shown up here. It wasn't a current one because they didn't have the new stadiums in there; it looks quite a bit nicer now. And you can't quite see my office in the distance, but it's out there.

Pittsburgh is very strong in research, and our institutions are world class.

The medical school is ranked number 12, the University of Pittsburgh, the NAH

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research funding ranks -- Pittsburgh ranks it number nine. There are over 1,800 faculty members and 33 departments in Life-Sciences research alone in Pittsburgh. Carnegie Mellon is maybe more recognized for its information technology experience and number one in robotics, and number one basically in anything they really set their minds on doing. And these universities collaborated to help drive the foundation for research in the Pittsburgh community.

And our mission at the Pittsburgh Life-Sciences Greenhouse is pretty simple; we want to make Pittsburgh a recognized leader in life-sciences world wide. And so far we've done a pretty good job of getting started, and I'll continue on that theme that Baiju laid out here about continuation and sustainability.

First a few comments about the Greenhouse. We were formed also five years ago, similar to that of BioEnterprise, from foundation money, state money, a little bit of federal money, which was important, because that federal funding money was used to drive work force training programs and have trained over 4,000 employees in life-sciences so far, with about \$2 million, 4,000 trainees, to improve their skills in life-sciences or get them skills in life-sciences they didn't have in the first place, because that's the number one industry in our region, so it's helped out tremendously.

We also have, building on a theme that was discussed earlier by the representative, a mobile lab in our facility. It travels around to local schools to not just entertain kids, but educate them on how cool it is to get in the lab and do experiments

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and to come up with new ideas and groundbreaking stuff. We're taking that on a tour here in the next two months, around our region, of course, at a Boy Scout Jamboree, for one benefit, and some local small schools here, to just get that information out to the kids, which I think is a really important point that was mentioned earlier.

We had \$100 million dropped in our lap five years ago, and that money was used very effectively in the institutions and in the community to build a life-sciences presence in Pittsburgh and to set the foundation for our growth.

So we're done with that, that money is spent, we're going forward with additional funding, we're going forward with hopefully returns from our investments. We have invested a little over six million directly into about 36 companies, which has leveraged \$150 million of outside capital coming into our region.

So all that stuff is good and it builds a strong foundation for growth. And our vision for the future now is to go on from concept to commercialization. It's getting the idea from the entrepreneur, getting it from the university, getting it from off the shelf of a company that's sitting out there and not doing anything with it, and putting it into the pipeline, getting into one of our programs that we have, the executive -- program, it's a world class program, as well as some of our other training programs, to get products to market, because at the end of the day in a life-sciences development organization like we are, incubator, or part -- we do a little bit of the whole mix, if you don't get technologies to market to help all of us in this room, I mean it's just -- it's not --

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what are you doing, you're just having some fun, you're not making any impact. We want to get technologies to market, and we want to advance technology growth.

And that brings us to the benefits of our collaboration here with our partners in Cleveland. And we started talking five or six months ago I guess and lost similarities, enough differences that were not threatening to each other, close enough, it is an hour and a half drive from my house to downtown Cleveland, I lived out there for a while so I know that drive very well.

We go back and forth for dinners, we have joint meetings, we've had collaborative events where we try to match technologies with one of our companies to one of the technologies in maybe a different stage company, and we've identified some 16 companies so far which can benefit from cross-regional representation.

So seven of our companies and nine of Baiju's companies to go in and to say, well, let's take advantage of some of the --let's take advantage of the skill set that's at the University of Pittsburgh Medical School, that's at Case Western Reserve, that's at Cleveland Clinic, some of the world renowned educational and health care institutions that there are. So we're working very hard to establish that collaboration to sustain the growth, it's a very important point.

We went to bring technology, talent and capital into the region, that's one of our goals, and we've done a very good of that. But to get it to keep going and to continue that growth is going to be tough.

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We've helped roll out over 200, actually 209 companies as of today, in life-sciences only, from concept into the pipeline, 209 companies in five years. We're going to struggle to keep that pace going, but we're going to do that and we're going to get help from outside the region to do that, and one of our partners will be the Cleveland collaboration.

So why is it important? Well, bigger is better, bigger attracts momentum, it builds momentum, it attracts -- from outside the region. We're looking to help attract talent. I just recently hired three senior executive, former CEO's, to our pool of executives and residents, and one of the pitches I gave them, as well, you know, this is a growing region, we have 209 life-sciences start-ups here, however, in the combined region, we have over 700 life-sciences companies, so there are second and third stage career opportunities. It just isn't a one shot deal. When your company is successful, what's going to happen as a CEO? You'll probably get replaced -- coming in, so there's good news and bad news, and you need to have a follow on career path, and there's opportunities here in the combined region.

Also, this combined region will track the interest of venture capital. And as you mentioned that at the JP Morgan conference, you know, we got in a room, talked to these folks, and they're very interested, and didn't know, didn't really know that we're only 90 miles apart, just couldn't believe it, they thought we were worlds apart, and it's a very interesting fact for them to find out.

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So we're tracking interest, we'll bring more capital into the region, that's good, it'll create more companies, more jobs, all that's going to repeat and help us grow.

We need -- I wanted to talk about federal funding for a minute. And I mentioned the federal work force training program, which is -- I think the objectives of that program were to train 400 employees over a five year period, and in four and a half years, they've trained 4,000, with just about two-thirds of the money being spent, it's pretty spectacular.

We need more -- we can do more of that. So a continuation of that funding would be one benefit, continuation of the mobile lab and continue other educational programs that train young people in life-sciences and technology growth and the opportunities in the market, because let's face it, you know, health care and life-sciences is the number one growing industry, it will continue to be so. And we need to find jobs there; we need to promote education and growth at the school level, at early stage school level.

And we also need to bring technology into the region from outside the region. We're looking at -- we're not looking at combining companies from Pittsburgh and Cleveland in our partnership, but we are able to combine teams to share ideas and share technologies. It may be technologies -- because I'm mostly dealing in pre -- very early stage, and Baiju is a little later stage.

So we can actually supply -- we can be a supplier, we can actually join

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up and expand the technology growth in the life-sciences, and all of that is going to be good for the region.

We're also trying to bring capital and talent and technology in from outside the region, outside the U.S., as a matter of fact. And the bigger we are as a regional entity, as Baiju mentioned, we're comparable and maybe bigger in some areas to the triangle in North Carolina, research triangle there, and also Minneapolis, and that's creating some attention. And people are just saying, well, it's interesting to know that. So it's going to help us grow. And the collaboration is just life-sciences, and we're not the Rust Belt anymore, we're a Tech Belt, we happen to be a Biotech Belt. But there are other entities and other agencies who can benefit from this type of collaboration, and we're actually talking to some of the manufacturers in our regions, because there are hundreds of small manufacturing companies within 100 mile radius of the center of our region, and you know, we can help grow that, as well, and they can get together and they can partner.

And the state line is a very invisible line when you're driving down the turnpike, you know, you just blow by it and all of a sudden you're in the other person's territory. It's not a barrier or anything, and it shouldn't be perceived as such.

So we're trying to create that collaboration, that partnership, that sharing of ideas, trying to, you know, don't be greedy, just try to help each other out and grow.

And that's actually met with -- it's been pretty receptively met by our state

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representatives, by the economic development organizations in both Harrisburg and Columbus, and we think that's a model that can help others in the future. So thank you very much for your attention and I'll address any questions later.

MR. THOMAS: The average American will probably have between ten and 14 jobs by the time they reach age 38, labor statistics show us. If we're going to have that sort of a work force moving forward, we need to be able to have a nimble talent development system to be able to produce it. And the way to make yourself nimble is to acquire the skills, the degrees, and the credentials that you need to move from one place to another, because post-secondary education, we always talk about the amount of money that it adds to your career in the course of a lifetime as you gain, and that's so true.

But also important is the opportunities and the flexibility it provides you as shifts occur. Because so many of the jobs of 2010 and 2015 maybe didn't even exist five or ten years ago. So we need to have flexibility in the way we move.

Now, Ohio faces a lot of challenges. I think we've faced even more challenges in terms of economic and work force development than our sister states in the Great Lakes region, and some of those are, we have extremely low educational attainment, particularly in the adult population, doing much better in the traditional age population, we're at the national average, and average isn't good enough, but that's certainly encouraging, but certainly not doing very well at all in the adult population.

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We're losing more young people, more young people than any other state in the country, with the exception of our neighbors to the east in Pennsylvania. And so we have some acute problems. And recently, during the last program year, Ohio passed Michigan in one place it would rather not, and that is in being number one in the country in terms of trade activity under the dislocation Trade Assistance Act. However, the Strickland Fisher Administration, since taking office just a few months ago, has been committed to turning around that situation by creating a work force and a talent development system that is demand driven, regionally focused, and an adult friendly system.

And by a demand driven system, our Lieutenant Governor, who's also our Development Director, Lee Fisher, likes to talk about how, yes, the traditional tools of economic development, the loans and grants and bond financing packages, they're still needed to get you in the game, I guess, but it's increasingly talent development that is the game changer that separates one region from another.

And he also goes on to say that there's no place in the country more than our Great Lake states where work ethic is central to the core being. Just ask people what they do or what they're about. In California, they might tell you that they're into wind surfing or something like that; or in the east, they may tell you about, you know, this is - education is their background, and I went to this particular school or that school.

But in the Midwest, people, when you ask them what they do, what are

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they about, they'll talk about their work life on a daily basis. So you can't trade that off as an important factor, but you have to have the skills and the talent to go behind it, as well. We're trying to build an inclusive approach to talent development in the state of Ohio. A present -- Ned Serferlin from Sinclair Community College, one of the great American community colleges in Dayton, Ohio, once said that the purpose of a community college is to take individuals from a \$7 an hour job to a \$17 an hour career.

And I think that should be our -- not just for our community college system, but for our adult career technical system, our work force investment boards, all of those who are involved in the talent development system, maybe a \$7 to \$25 an hour job, I should say, but to build careers, not just minimum wage jobs.

In Ohio, we're also doing and taking advantage of the flexibility that the U.S. Department of Labor is providing us to build a more demand driven system in terms of incumbent worker training. We've been very reluctant in the past to expand the role that we have in work force development to empower our local folks through that way.

Other initiatives that we're undertaking in terms of making our system a more demand driven system are trying to brand our system a little better. If you go to a one stop or regions in Michigan, you know, you'll have Michigan works, and you'll have this identification for your work force system. It's something we lack in Ohio and it's something that we plan to build. We also plan to build a better online job matching and

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recruitment tool, because as Baiju said, we need to bring talent in, we need to have matching systems where our employers can find quality skilled work force that they need, and vice versa. And we're also going to be centered around accountability, because we need to find metrics that matter because accountability is going to be central to our talent system and to everything within the Strickland Administration.

Regional focus is our second topic, and regional focus, you know, we are very positive about the work other states are doing in the region. Pennsylvania and Michigan have model regional sector strategies, and we're trying to develop a regional sector strategy approach in Ohio, as well, called the Ohio Skills Initiative.

This will not only focus on the demand industries, such as the biotechnical industries that we're talking about here, but it will focus in terms of pulling together the network of providers in a community, the labor community, the business community, and importantly, the educational providers, our career tech centers, our community colleges, and our great research universities, and other institutions that do research such as the Cleveland Clinic and the -- Memorial Institutes and others, into a uniformed regional sector approach to economic development.

We also have an initiative which we're going to launch very shortly called the Ohio Work Force Guarantee. And this one, too, will be one where, it's kind of like the opposite of the Field of Dreams concept. Field of Dreams, if you recall, was build it, and they will come. The idea of the Work Force Guarantee is come, come to

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Ohio, or expand your company's operations in Ohio, and we will build it, it being your skilled work force, primarily if you use the community college or the career technical system, just another way of tying together the educational system of our state, the adult work force education system in our state, with our work force and talent development system a little bit more closely, to align it.

And finally, we want to have an adult friendly system. We are making great progress in this. I am so pleased that Governor Strickland proposed a tuition freeze to the state of Ohio, the legislature honored that, and during the next two years, tuition at our public institutions, both our community colleges and our public universities, will be the same as it is right now.

Now, Ohio's tuition at the two year and four year level is about 50 percent higher than the national level. And we're under no illusion that at the end of that two year period, we'll still be higher than the national average. What a powerful statement it makes by our policy makers about the value of post-secondary education and how important it is for the future economic development of our state. Another progress area that we're making is in the area of portability of our credentials. You know, adults face so many barriers to educational, transportation, having a family, working a job part-time or full-time, the last thing they need is to be able to take credits at one institution and not be able to have those credits moved forward.

Well, about four years ago we finally achieved portability between the

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community colleges and our public universities in a universal way, such if a course is equivalent at one institution to another, the students will know ahead of time that that's the case and they will be able to know that that transfer will take place automatically.

Well, that really opened up a sea change in Ohio, so that now we're also going downstream, if you will, looking at our adult career technical center. So if someone earns a license, a practical nursing degree, an LPN degree at a career tech center, and you take the same state certification test, et cetera, for that examination as a community college student would, then that course work should be deemed to be equivalent course work in the move forward for the individual, as well.

It's a real breakthrough I think for adults, because we think adults often don't have time to think whether they will, you know, get a bachelor's degree or a master's degree, but if they get the confidence that they can by getting a little piece of education and can stack that education up, then perhaps they will be able to go on and progress a lot farther than they originally think that they could. We're also focusing on other kinds of credentialing activities in Ohio, and we're going to try to reward those initiatives that feature credentialing, and one of them is certainly greater support for our Ohio State Apprenticeship Council.

The Governor put in an earmark of two and a half times the previous support for the Apprenticeship Council. And we're also going to try to expand the purposes of apprenticeship. We want to beef up what we do now well, which is in the

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manufacturing sector and in the construction sector, but we also want to have it for other industries where we can find these kinds of pathways for individuals, such as primarily in the health care and advanced technology industries.

And then finally alignment. And previously to July 1 here, we have -- all of our educational adult work force assets have been in different streams. We have -- the Department of Education has a robust system, perhaps the most of any state in the country, adult career technical centers, and then we have a community college system, as well.

Both of them were in two non-cabinet agencies, and yet governors get held accountability for education funding perhaps more than anything else in their agenda, perhaps other than taxes. So as a result of changes made in this bi-annual budget bill, and I have to thank the work of the Knowledge Works Foundation and the Ford Foundation for setting the stage for that work over the last five years through the bridges to opportunities initiative.

But through that initiative and then through the action taken by the governor and the legislature, we are going to move the adult basic literacy programs, we're going to move the adult career technical center programs, the adult portions of that, over to the Ohio Board of Regions, and in a separate change made earlier this year, the legislator and the governor made the Board of Regions a cabinet agency.

So we essentially have taken adult work force education from two non-

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cabinet agencies to a single cabinet agency, and we think that has a lot of promise for Ohio, and for, more importantly, for our talent development system.

I'd like to close with a quote from our Governor, Ted Strickland, because I think it speaks volumes about the direction that we're taking in Ohio in terms of both a focus on regions and traditional economic strength.

You know, economic development is a regional activity; Ohio has probably more large cities, not massive cities like Chicago or Detroit perhaps, but large cities than any other state, we might as well take advantage of the fact that we have that kind of infrastructure. And we also want to speak, as I said earlier, about building a more educated, skilled work force. The Governor has said that the future of job growth in Ohio, and I would say in any Great Lake state really, is in our regional strengths and in making sure that we have the most educated, highly skilled work force possible. Thank you.

SPEAKER: We have some time for some questions. And I'm always struck by, when we have panels of state and local leaders who come to D.C., I think the common theme is just one of innovation and entrepreneurialism.

And it also strikes me that what we've heard really from everyone on this panel, and Dick may want to talk to this, as well, is, there's a different theory of competitiveness that seems to be bubbling up. It's not clear to me, to be frank, some of what the congressmen said that has really permeated either the congress or the executive

branch.

A lot of talk about collaboration, collaborate to compete essentially, across state lines, obviously, in the Cleveland/Pittsburgh example. A lot of focus on clusters, critical mass, the places, the metros, the regions in which these clusters basically locate.

I mean it strikes me that we've begun to look at the federal government. There's really only a few examples of programs, you know, the wired program within the Department of Labor, for example, that really is trying to not just -- but encourage and reward efforts to work across disciplines within a metropolitan context, perhaps across states. And I'm just -- I'm trying to get a sense from the panel whether the usual interaction with the federal government continues to be more in at stovepiped, more earmarked kind of context, or whether you begin to see a glimmer that there might be another way forward. I don't know, Dick, if you've thought about this, as well. Have you thought about the Midwest sort of moving forward? It just seems like the innovation is happening locally and at the metro level, but there's almost like a broken circuit as we sort of move up at the national level. We're still dealing with sort of earlier sort of visions and philosophies about competitiveness and so forth.

MR. LONGWORTH: I do think the latter. There is some collaboration going on. Doctor Simon talked about collaboration among universities. There is some collaboration across state lines, it's between Cleveland and Pittsburgh. But this is more

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the exception than the rule.

State lines still divide the states economically, intellectually, and politically, and to the degree that we interact with the federal government, it's often through our congressional delegations or state governments. It is stovepiped from the state capitals, and you don't get an awful lot of political cooperation between say Wisconsin, Illinois, and Indiana going to Washington jointly. There is the Northeast Midwest Institute, but it does some lobbying, but not so much on a collaborative basis between states.

There's a lot of interesting things going on across state lines, metro regions, the big cities tend to be on the borders of states rather than interior, so the economies like that between Milwaukee, Chicago, and Northwest Indiana do cross state lines.

This is business going where business goes, the economy flowing across the state lines. Policy planning and governance trails behind.

SPEAKER: Any other thoughts --

SPEAKER: Maybe just to add, you know, I certainly agree with everything that Dick said in terms of the federal government's actions to date, but perhaps a more fundamental issue is really the federal government, really the federal legislature's lack of understanding of what it takes to create competitiveness and innovation throughout America, whether it's at the state level or across states.

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We heard the congressman today talk about his own frustrations about getting his colleagues really to go beyond even early understanding of what the rhetoric is, to really thinking about tangible actions. And I'm struck by how, as we gear up for the 2008 presidential election campaigns, that there is hardly a single major candidate that is talking about the issue of competitiveness and innovation.

SPEAKER: It is quite striking. Thoughts and comments or questions?
Back here.

SPEAKER: Yeah, so Mr. Thomas mentioned briefly the problem of losing young people, like young educated people. For example, I'm going to be graduating from the University of Michigan within a year, and I know a lot of people in my position, they stay in the Great Lakes region to get a good education and then they leave, they choose to leave and relocate elsewhere, east coast or west coast.

So I guess my question really for anyone on the panel is, what can we do to ensure that like young people with college degrees stay in the region and help build it up?

SPEAKER: Well, speaking for Pittsburgh, it's a problem that we have, as well. As you know, we have very strong universities there at Pitt and at the Carnegie Mellon University, and we try to retain that talent in the region. And one of the reasons - the way we do that is to create new companies and create more opportunities for them to participate in these companies. And having outside companies come into the region

like Google and start up a very large office right on CMU's campus has helped out a lot. So we're getting that kind of environment where we're bringing in technology, we're creating new companies, and we're creating more opportunities for the people who are there, because we definitely don't want them to leave, we want them to stay, and we want to bring in talent from outside.

So it's a challenge. If you don't keep growing and keep reaching out to try to help, you know, the people like yourself stay, you know, the Michigan folks ought to be seeing you afterwards to try to make you stay in Michigan, otherwise you can talk to me and we could bring you to Pittsburgh. We want to keep --

MS. SIMON: I think part of it is the answer to a better connection between universities and small and medium sized businesses and start-ups. Because if you take Michigan as a state, most of our connections historically have been to very large industries.

And the way in which you place students and educate students for those industries is very different than trying to think about how you move people into small and medium sized companies and that they can see a career path for them in small and medium sized companies. I also think that Chicago is in the region. If I were looking at the Michigan state experience, Chicago is becoming a very attractive metropolitan city within the region for our students. Minneapolis has been historically very strong, and we need simply to find a way to make Detroit a little bit more attractive in terms of the

developments of mid-town and the river for our students.

SPEAKER: I've got a question right over here.

SPEAKER: Ted Thompson from the University of Pittsburgh School of Medicine. I've got two questions, they may diverge a little bit, but one is following up on a question that you just asked.

Is there any sort of regional identity or any institutions that would start to create a regional identity that would address some of the barriers that you've suggested? I mean are we in some ways talking about the -- what's developed as a new way -- a new part of the country that is sort of becoming like Appalachia once was and needs to be recognized as a regional entity?

The second issue, which kind of relates to the Appalachia question is, I'm very concerned that there are large numbers of people in the region who are really suffering a great deal in this transition.

And the focus that I'm hearing is, and I don't mean this to be as critical as it may sound, it's a bit elitist. There are large numbers of folks who are in communities that have really been nailed, and to the degree they're still there struggling. What's the strategy that's going to pull those folks forward and I think overcome the regional depression, and I'll use that in lots of meanings, that is out there? How are we going to use the ways that you guys are talking to pull those folks up and pull the regional identity into a different direction?

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SPEAKER: Who wants to start on this?

SPEAKER: As I mentioned, since you're from Pittsburgh, one of the, you know, two things that we have going on are the mobile averaging out to the schools in our -- region going around and demonstrating to students, you know, how they can elevate their skills and have some fun doing that, opportunities exist, expanding work force training programs, just reaching out to more of the younger crowd, and to try to get them involved in what's going on at the University of Pittsburgh, the medical school, and the CMU in our region, just to try to expand and reach out and do that and provide them opportunities to get to those schools and make them want to get to those schools.

And in some cases they may feel that they don't have the opportunity, but we need to reach out and tell them they do and demonstrate that here's the path to get there, hopefully we'll get some support to help fund the student's education, hopefully we could freeze the -- I like the idea of freezing the tuition, it's a really good idea. I'm not sure that Rendell has figured that out yet, but he's having some problems right now, but I think those are things we can do from our perspective, from the life-sciences perspective, and we're trying to do the best we can.

SPEAKER: I think it is, you know, it's almost a tale of two regions that are in this transition. So the sectors that I participate in and probably many of us participate in are thriving. And our single biggest issue for companies in our region, whether it's Cleveland or Pittsburgh, ironically is the inability to find a work force.

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So we've got thousands, literally thousands of open jobs in Cleveland in high tech and health care, in financial services, I'm sure the same is true in other parts of the Midwest, yet we've also got these populations work force that's been dislocated because of the industrial transition.

And so I'm not sure that it's -- I guess I wouldn't characterize it as an elitist approach, it's just a recognition of what is growing and what is thriving and what's required to continue to fuel that growth. And somehow through the policies that Terry described, we need to bring along the work force so that they can participate in these new industries.

SPEAKER: That's why I think, you know, the work force training program I mentioned is a federally funded program and it's using the community college of Allegheny County as -- they developed the curriculum, and it's a spectacular program. Those types of programs should be widespread.

MS. SIMON: And a bit of -- the Big Ten, as an athletic conference, probably represents a visibility for the region. All the members of the Big Ten are AAU members and on the list. And one of the things we're struggling with is the academic consortium with Chicago has had a different name and nobody knows what it is.

So the question is -- and that's really one of the focus of the spring 2008 conferences, can the visibility of the Big Ten and the athletic visibility be used as a lever to create some of the visibility that you're talking about, and then have others be a part of

whatever this configuration can be.

And the second thing I would say is that, we're a decentralized medical school, don't have a hospital, and I'm -- in Saginaw, so I know some of those issues on a firsthand basis, and I'm in rural communities where the entire manufacturing structure has been disseminated.

And there's an important role for cooperative extension and tying that to research, there's economic development in health care that has to be looked at for small development, and there also has to be a way in which we, again, don't necessarily, and I can see -- I know this in Pennsylvania, as well, we don't necessarily see that because we're successful around the university, we're successful collectively. And we've got to work on those other areas, and that's part of the blending of I think the assets that we have to pull together and they're really tough to do. And I would say that if we have a tsunami, if there were a natural disaster, the first thing we'd be talking about is human capital development.

The second thing we'd be talking about is infrastructure development. But when you have the slow drip of a region undergoing the kind of transformation that we're undergoing and the huge competitiveness across regions in the United States, so it's now my turn to be successful, because you guys up north were successful for whatever, and we suffered, so now we're in charge, you know, we're growing, we don't have the problems you did, you know, tough, you know.

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And as a country, we can't afford to have one region be falling behind, because we're competing not with one another, but with the world, and we haven't gotten that through peoples' heads yet, and therefore, there's no capacity building dollars for people, unless you have a vent that is a natural disaster, and we've got to change that public policy, in my narrow view.

SPEAKER: Dick had a thought.

MR. LONGWORTH: Yes, to follow-up. I mean what you're talking about, a great deal of pain, you're absolutely right. What the Midwest did for a living, or the Great Lake states did for a living was farming and heavy industry, and globalization has simply transformed both of those utterly. We're going to be making our living in a different way, and the people who made their living in the old way, not only in the major cities, but in these small manufacturing towns, a lot of these places might come back. I don't know what you say to people in Anderson, Indiana or Newton, Iowa who are going through the destruction of their local economies.

One of the problems, of course, is, these people still do have political clout, and it's one of the problems with the state governments, that state governments have to look towards the future, but they also have to deal with the victims of what's going on now, and to get their attention, to invest in education and these other future industries in innovation and in areas like bioscience is maybe asking more of state governments than they're capable of doing.

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SPEAKER: I want to thank this panel. I just think that, again, you know, as often happens here, I think you've identified the innovation that's happening at the local and metro, to some extent the state level, and then the question is how to either scale it up or how do you, you know, learn from it in such a way, and I think that's really what I think John is going to be trying to do as we go forward with this Great Lakes initiative. I mean we do have an opportunity. And I was just thinking about the states that are represented here today, Michigan, Ohio, Pennsylvania, we'll leave Illinois aside for a second, Minnesota, Wisconsin, I mean these are battleground states in the '08 election. And I think there's been very little effort in the past to basically use that political status to try to take certain issues, and particularly innovations, and sort of lift them up onto the national stage. So I'm very encouraged by this panel. And again, I want to just thank everyone for participating today. I'll have the next one come on up.

We're going to be joined now by the next panel that's going to focus on environment and urban regeneration. Tim Penny, who is the former congressman from the First Congressional District in Minnesota, is going to introduce the panelists. He is now President of the Southern Minnesota Initiative Foundation. And there obviously are many people in this town that remember Tim's service in the House and his expertise really on a broad array of issues that we'll be discussing today. So Tim and the panel.

MR. PENNY: I thank you, and thanks to Brookings for initiating this study, and now we're trying to take it to the next stage, happy to have been involved as

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the task force that advised this project at the outset and to continue my involvement with this program today. Before I introduce the panelists, and I'm glad they sat in that order because that's the order in which they will come forward to make their remarks, I'm going to take the liberty to just offer a couple observations, because when you look at the issue of the environment, you don't always think that that has much of anything to do with economic development.

In Minnesota, we are a state where voters are increasingly becoming aware that the environment has a lot to do with the success of our state. Minnesota, back in the 1980's, passed a lottery, but a big piece of why they did that is because we promised to dedicate the revenues from that lottery to environmental purposes and education purposes, so there's that sort of connectivity.

In the late 1990's, we actually passed a Constitution amendment by an overwhelming vote, placing in our Constitution the priority of protecting the natural resource of Minnesota. And now this last legislative session, there's been continuing debate about what we call a Legacy Act, where we would create dedicated revenues to inventory every lake and every stream in our state and then develop a plan to clean those waters up over time.

So environmental issues are moving to the top of the agenda in our state and I think it's true across the nation. We talk about the big issues that drive state government--education, transportation, health care--environment now is becoming the

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fourth big issue in Minnesota. And one way that we are aware of this is because we are a tourism state; it's a huge chunk of our economy. We have 10,000 lakes, we have the Mississippi and the Minnesota Rivers and all of their tributaries. We have Lake Superior, which draws us into this Great Lakes region. And all of that creates enormous tourism potential for our state, again, one of the largest industries.

In my part of the state, we are bordering the Mississippi River, and we have created a tourism industry in this southeastern corner of Minnesota that is beginning to parallel or compete with the tourism industry that's always been evident in northern Minnesota. And how did we get about that? Within this region, we began to break down county lines and city jurisdictions and talk about the region as a tourist destination.

So I see in your report some sense of how the Great Lakes region is a tourist destination, could be a multi-state enterprise, and I think it's a workable enterprise.

In terms of development, in using water as an asset, a couple mayors ago, he's now a U.S. Senator, Norm Coleman, we had a mayor that said, what is St. Paul if it isn't the river, and almost everything he did from economic development to housing to parks and recreation, he built it around that river focus.

We now have a new boulevard along the river that used to be sort of an industrial boulevard, but it's a parkway today. We took the children's museum and put it

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there. We did some remodeling to the convention center and really gave it a view to the river. We rebuilt the bridge over the river and did it an architecturally attractive way. We have low income housing and affordable housing that's now located with river view. A lot of development has really driven the success of St. Paul in recent years, and it all is because we figured out -- we emphasize that river and we tie it to that.

So all of this is to say that there's tremendous connectivity here with the environment and the economic future of this region. It goes without saying, and it's right there in the report that the Great Lakes region emerged as a powerhouse, in large part due to its natural resources, and we believe very strongly in this report and will be advocating as time goes by that the environmental assets of this region are also a big part of its future success.

So with that, let me introduce the panel today in the order in which they will speak. First, Victoria Pebbles; Victoria is currently with the Great Lakes Commission, she's been there now since 1993, she manages their transportation and sustainable development programs at the Great Lakes Commission, she also develops and directs projects to address issues facing the Great Lakes, including coastal development, urbanization, dredging, habitat protection, the list goes on.

She will be followed in her presentation by Helen Taylor, who is with the Nature Conservancy in Michigan; she's been there since 1999. This is an organization that has sizeable membership throughout the state. She also has been

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appointed by Governor Granholm to serve on Michigan's Land Use Leadership Council. She came to Michigan after directing the Conservancy's Great Lakes Program. So for many years she's been involved with the Great Lakes issues with the Conservancy in a variety of capacities.

And then we have Mayor Tom Barrett, who I first came to know when we overlapped in Congress for a few years. He served in the State Legislature prior to running for Congress. He served in Congress for a decade, decided to return home to Milwaukee, where is he now their 40th mayor. His priorities include economic development, youth issues, and environmental sustainability, trying to make Milwaukee a green city. So in that order, if you'll come forward and make your presentations.

MS. PEBBLES: I'm with the Great Lakes Commission, and we're an interstate compact agency, just for your background, that represents the interest of the eight Great Lake states that have a border on the Great Lakes themselves, a little bit different geography than the focus of the Vital Center Report that John produced here.

And at the risk of repeating some of the stuff that Congressman Ehlers talked about this morning, I'm going to go in a little more detail about the water resource of the Great Lakes. As he mentioned, it's the largest source of fresh water on earth, about 65 trillion gallons of water, 20 percent of the world's supply, or 90 percent of the U.S. supply. The water alone of the Great Lakes Basin covers about 94,000 square miles. The land that drains into that water area is about 200 -- a little more than 200,000

square miles, so all together, about 295,000 square miles of the Great Lakes Basin.

If I had my slide, I would show you a cool little trick about, if you turn the water over on the continental U.S., as Congressman Ehlers had referenced earlier this morning, you'd cover it in nine and a half feet of water, we'd all be swimming, which might sound like a really nice thing on a really hot, humid D.C. day like today. But for those in the region, and I would argue in the nation, that wouldn't be such a good idea.

About 82 million live in the eight states that border the Great Lakes. And again, I have to point out that the Vital Center Study was a little bit more expansive than that, including Iowa and Kentucky.

If we look closer at the watershed itself, and that's a subset of each of those states, there's about 24 million who live on the U.S. side, not including Chicago, which is technically no longer in the Great Lakes Basin, that's because they diverted water that drains out of the Basin and into the Mississippi River Basin. But all said, about 40 million people collectively depend on the Great Lakes for their drinking water. The Great Lakes have more than 10,000 miles of shoreline, roughly the same as the Atlantic Coast. And if you line the Great Lakes up along the Atlantic shoreline, you'd see that -- okay, great, thank you.

So I'm just going to go over these slides that I did. This was the -- pouring the water over the continental United States, we'd all be under water. So I

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mentioned, in addition to the 35 million that live on the U.S. side, in the Basin itself, which is the dark green portion surrounding the lakes, if you look at the broader area of the jurisdictions of the eight states, we have about 40 million people that depend on the Great Lakes for their drinking water, and that includes those in the -- on the Canadian side, as well.

The coast line, as I mentioned, more than 10,000 miles of coast line if you line the Great Lakes. Congressman Ehlers put them over the continental U.S., but here we've got them lining the Atlantic and the southeastern seaboard, you see that they're quite expansive.

In addition to water for drinking, the water is currently used for a variety of other uses, and these are traditional industrial uses that have made the hallmark of the region what it is, power supply, fossil fuel, and nuclear irrigation, livestock, farming. Agriculture is a very significant industry, and with the technology innovations that are coming down the pipe for the region, agriculture will still maintain its role in the heartland. About a third of the land base is currently for agriculture production. We might see a shift in some of those commodities, but I'd argue to say that water will be very important in how that shift takes place. Right now about \$45 billion a year in the industry, in the Great Lakes states for agriculture.

Recreation and tourism, we heard a little bit about that earlier. The Great Lake states have about 4.3 million registered voters within and outside the Basin, which

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comprise a third of all registered votes in the United States.

Hunting and fishing are also important to our regional economy. These are unique opportunities. You can't hunt and fish for the same types of things in other parts of the United States as you can in the region. According to the Great Lakes Sport Fishing Council, for example, sport fishing alone contributes about \$15 billion a year to local and state economies across the region.

There hasn't been a real comprehensive study of the value of coastal tourism. We are hopeful that this important industry will increase over the years and we'll have a more accurate assessment of that. But I think John's study points to the opportunities there with the North Coast.

Mayor Tom Commerce has also played a historic role in the Great Lakes region, a very important one. The seaway serves 15 major international ports and some 50 regional ports. And there are two types of trade communities going on in the region; there's the inter lake community, where ships and vessels travel within the lakes themselves, and then there's the overseas import/export trade community that comes in and out of the St. Lawrence Seaway.

This is a pie chart of the different types of commodities that travel through the Great Lakes system. I'm not going to go into the detail of them, but I think it's important to note the difference, as I mentioned in the earlier slide, about the inter lake versus the import/export that come through the seaway.

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While they do contribute an important -- play an important role in the regional economy, it's not without its own risks. For example, Congressman Ehlers talked about the invasive species issue, that's a very important issue in our region. We're working diligently with the shipping community, the Great Lakes state, the federal government, and other stakeholder to adopt more sustainable shipping practices that won't pose a risk to the other economic features of the region, such as tourism, fishing, recreation, as well as public water supply.

What we see at the Great Lakes Commission is that modifying existing and creating new industries that are not only water based, but sustainable, are the key to the future of the Great Lakes economy. What are we doing so far? Well, as Congressman Ehlers mentioned earlier, in 2004, there was a presidential executive order, and in that order, the president recognized the Great Lakes as a national treasure. It gave the region a high profile.

He also created an interagency Task Force comprised of ten cabinet level federal agencies. Those agencies work together with a variety of stakeholder, more than 1,500 throughout the region as part of a regional collaboration.

And they worked over the course of a year, and at the end of that time, they produced a regional strategy to protect and restore the Great Lakes. The strategy had 46 recommendations around the eight issue areas listed here on this slide. I'm not going to go into the detail of those eight issue areas. The address for the report is up

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here, you can read it at your leisure.

But I will say it brought the region together, and we all came to agreement on a common set of goals and priorities, and we continue to carry those forward, not just the Great Lake states, the tribes, the non-profit community, and the local governments.

How does this restoration strategy in the Great Lakes compare to some of the other restoration strategies around the country? Well, here's a graphic that just gives you some of the geographic spread of it. Population-wise, we can see, compared to some of the other large scale federal restoration initiatives, that the Great Lakes Basin has a larger population. And I'd like to point out there, we're only including the Basin, remember, that dark green in the map earlier, that's the watershed. We would be way off the chart if we included all of the people in those eight states and the two provinces.

Looking at the geography, we have about 295,000 square miles, as I mentioned earlier, again, we're larger. And we're more complex. We've got eight states and two provinces, so we have some challenges bringing folks together to come together and help implement the plethora of programs and initiatives.

Cost-wise, we're looking at a price tag of a little over \$20 billion. If you look at it in the context of the geography, the population, and the significance to the industries in the region, it's well worth our investment.

Just as a point of humble reference, the importance of drinking water and

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the need to protect that source just for drinking alone, this gives you perspective of how many people in the world are without that resource.

When we think about it then, moving forward, what is it worth? Slightly over \$20 billion includes the state, local, and private contributions, so that's important to keep in mind. We didn't just say, here, federal government, come forward with all of this money. But this figure is needed to restore the lakes upon which so much of the current known economic activity depends, the things that I talked about earlier, but it's also needed to protect the value of the eco system services that we don't even know -- we don't even have quantified values for yet, things like the value of a wetland, for example.

When we calculate the economic value of a housing development, for example, it typically doesn't include the loss of water quality or flood control that is an outcome of when the wetland is destroyed. These services are essentially provided for free. Because we don't incorporate these services into our economic figures, we tend to make public policy decisions that destroy or at least don't protect these services.

The economic benefits of the Great Lakes restoration are enormous, and we're looking forward to some of the work coming out in the near future that will quantify that. But in the meantime, it's safe to say that we don't all need to be economists or have a price tag to make the necessary right public policy decisions to protect these natural resources that we know are critical to the Great Lakes economy, the

national economy, our general welfare, and our quality of life.

As part of the collaboration process, my organization, the Great Lakes Commission, worked with the Great Lakes and St. Lawrence cities initiative, a collection of mayors around the Great Lakes and St. Lawrence, the Council of Great Lakes Governors, tribes, and other entities to select within the collaboration recommendations the 46 I mentioned earlier, five for immediate action, and I'm going to talk about these in my final moments of my talk.

First, we want to stop invasive species, aquatic invasive species, and it's a two-prong process that we're looking at right now. Passing legislation that will stop invasive species. We'd love to have a comprehensive bill; that may not be possible. In the interim, at a minimum, to enact federal standards to regulate ballast water discharge.

Secondly, to stop the Asian Carp, the Chicago Ship Canal. There's a temporary barrier that's outlived its life span right now. The federal government has an important role to play to stop the Asian Carp permanently from coming into the Great Lakes through the permanent authorization of that barrier.

Secondly, in the larger scheme of the five tasks is cleaning up toxic sediments. Again, Congressman Ehlers talked about the Legacy Act. The Legacy Act is authorized, but we need funding to implement projects to restore these areas of concern. There are 43 of them on the Great Lakes; a couple have been taken off the list, but most of them are still there waiting to be cleaned up, and they were dedicated over

20 years ago. Protecting water quality, I talked about the value of water quality, drinking, public water supply, and other purposes. We have authorization, we have the Clean Water Act out there, we have the Safe Drinking Water Act, but we need funding to capitalize the revolving loan programs underneath both of those pieces of legislation, so that we can ensure safe drinking water when it comes into us, and as well, when we're discharging it into the Great Lakes and their tributaries.

And finally, we need to enact Great Lakes restoration legislation. This legislation -- and there are several bills pending in the House and Senate right now. This would institutionalize the collaboration process I referenced earlier, so that it would provide an ongoing framework for the collaboration to -- the delivery of nearly 200 federal and state programs that have a bearing on Great Lakes restoration.

Acting on these priorities will help ensure that the Great Lakes water can continue to serve its vital role in the economy and society well into the future. For more information about those priorities, please go to glc.org/restore, or you can email me with your specific questions. Thank you.

MS. TAYLOR: Good morning. Thanks to John for inviting me to participate in this. I was very excited when I saw the title of the talk, Great Lakes Environment as an Economic Engine. I'm from Michigan, where obviously, if you look at a few simple numbers, you can see how that is true. Three hundred and sixty thousand jobs and \$36 billion can be attributed to the natural assets and culture

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resources of the state that feed the economic engines of the state, agriculture, forestry, tourism, and mining industries, all industries that depend on those natural assets.

Tourism alone is 200,000 of those jobs and over \$15 billion.

Now, the problem is, we hear the numbers like this, and we nod and nod, and we just keep going forward. And what I am interested in talking about, there are many -- much of the discussion is about what I would call outside in strategies, of bringing jobs and people and retention of employers into the region. But equally as important is an inside out strategy, of recognizing and investing in and marketing the strengths of Michigan and the natural assets now.

Our actions need to reflect a much deeper understanding that the protection of these natural assets in conservation is not a leisure sport, is not philanthropy, if we have a few pennies at the end of the day to do it, but that it's actually a central and vital and central part of our economic development strategy.

I'd like to share with you an important statement that was made in the UN Millennium Eco System Assessment Report. This was a six year report considered -- it took over six years to develop, it was considered one of the most objective of its kind, and it sheds a slightly different way of seeing this issue. Our activities are putting such a strain on the natural functions of earth that the ability at the planet's eco systems to sustain future generations can no longer be taken for granted. And if you digest that, this is about much, much more in economic development. This is about human

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prosperity. This is, if you will, the foundation, maybe even the basement of whatever house you want to build on the use of these resources and what we're doing and what we're talking about and thriving and revolving around.

John's report emphasized important issues such as pollution prevention and clean-up, et cetera. What I'd like to actually put some emphasis on is investing in that which is already in good shape and getting there before it needs some of those activities. And there isn't enough recognition of that as a central and vital part of the economic development strategy.

If you were to look at some of those assets that are still there, but dwindling, such as shoreline, which supports a huge number of those 200,000 jobs in Michigan and \$15 billion of industry, that's part of our brand, and it's dwindling away, yet we don't have tools like California, who thinks, to the congressman we know has less shoreline than we do, they have a Coastal Commission to focus on that.

So there are many new tools that need to be established. But, in fact, what I'd like to share are some practical examples of tools and ways we can work with those that are in place now. Any business that would witness the dwindling and disappearance of the raw materials that it needs for success and actually would see them even at risk would sit up, tilt forward, and start to look at 50 to 100 years down the line and think about, how can we invest in those resources to make sure they're there.

We're working with industry leaders in the Great Lakes region that

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actually already get this. If you talk to Tony Early from DTE, he'll tell you how hard it is and share stories of sharing his company in other areas of the world and the inability to attract investors because of the perception of it being a Rust Belt, and the lack of realization of the quality of life here.

You talk to Ken Whipple from Consumers and he'll brag that once he gets those employees here, he beats records in his IT shop for retention and a lack of turnover because of the quality of life.

We can no longer again see conservation as just something that is part of the philanthropic activity. We have to get there first before it is gone. They're not making this anymore.

So the practical examples that I would like to share, I'll focus by system. Let's start with forestry. Before the -- the northern forest of this region, in the last five years, especially in Michigan, are no longer held by the -- they're no longer industrial owners. These are short term timber investment vehicles that are now in place. And in Michigan, it's happened all in a very rapid amount of time.

In fact, what that leads to is a privatization of many of the resources that support the tourism industry, fragmentation of ownership, loss of intact landscapes that that industry needs. So our response, in turn, was one of the largest -- well, was the largest conservation project in Michigan's history, protection of 271,000 acres of forest land linked to 3,000 jobs.

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Creating the enabling conditions for that industry to thrive, that 271,000 acres connects two million acres. Again, it goes back to that UN Millennium Eco System Assessment statement of functioning landscapes and health of the system, yet it also provides the enabling conditions for these industries to stay in a time where lots of that investment is going south.

And it speaks to the real locations where the gentleman earlier with the question of, what about those areas, it's in way of investing in the landscape so these people can stay and these jobs can stay.

It also is a project that has kept it in private ownership, so that it stays on the local tax roles, and in fact, is privately owned. But what we did is, purchase the public access rights so that it is ensured for public access forever, thereby, supporting the tourism industry. In addition, it enabled us to create new tools that were very important. This project actually facilitated the bringing in of forest legacy into the state of Michigan, something that a state with the largest public holdings in state forest never was enrolled in and now can actually access for future projects. So forest legacy played an important role, but didn't exist in the state prior to that.

In addition, we midwived a new investment vehicle, the Nature Conservancy midwived its own timber investment fund, which now is a separate entity, so that it could have a partner out there that's competitive, but actually is grounded in the rules of sustainable forestry practices.

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That, in fact, is the vehicle that Michigan industries can and are investing in, because they looked at their own pension portfolios and found out, well, we're already investing in forestry as part of our assets, why not invest in our regions, forest, and make sure that they're there for future generations, thereby, making an economic development strategy for our region.

In addition, because of all these forest projects across the country, we saw an opportunity with the new market tax credits to make it eligible for forest lands to be included. So working closely with that rule making, in fact, that timber investment fund can add new market tax credits in the northern part of our state in future projects, thereby, sweetening the return, incentivizing investment in our forest and northern part of the region. These are innovative, creative ways -- these tools are out there now that we could put into play.

An agriculture example, well, \$150 million comes into the state of Michigan through the Farm Bill for conservation practices. You know, if we were more self-aware of that, we could be driving those towards areas where water quality is essential.

In fact, we know that there's an audience out there for that. The Nature Conservancy, we have agreements with 12,000 acres and farmers in part of the state for conservation practices. Why are they doing it? Because we can demonstrate that it actually lowers their costs and increases yields.

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So now we have an interested audience, we have money on the table from the Farm Bill. What's amazing is, the applications are there, as well, hundreds of applications from farmers to do this, yet we can't process them fast enough, there's not enough staff, so the money sits there.

So you stand back and you think, are we seeing the whole picture, are we being self-conscience enough about this. We need a conscience tilt forward, forward thinking investment strategy for these natural assets in the state that can yield broad impacts. There are also practical and innovative economic opportunities with just protecting one of the most -- the greatest values, which is quality of life. These are very tough times in Michigan, there's no doubt. Revenues are way down. But even in the toughest of times, the state is a very, very large money manager.

That includes hundreds of millions of dollars in constitutionally dedicated endowments, billions of dollars in pension funds, where we actually could put those into play into investing for return in these natural assets of the state and the region. Why aren't we doing that? It's possible. Other states have demonstrated safe and effective ways to do this. We need to think about that.

We also, in over a dozen states, have passed tax legislation for tax credits, for incentivizing conservation action. We need to pass bonds in the Great Lakes region states. We need to catch up with states like Florida and California, where they're investing in the long term vision and understanding that it's important to invest in those

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natural assets so they're there.

It may seem crazy, honestly, I can understand that, in a state like Michigan where the challenges we're facing, but you talk to industry leaders who are in sometimes their worst at times and they'll tell you we can't afford not to invest in the future. We're working with former state treasurers from both sides of the aisle who also say we cannot not afford -- we can't afford not to. These are examples of where we are recognizing that we're a working lands region. But they're compatible with science, economic innovation, and an understanding of eco system function where we can get the balance right and achieve a win-win.

We're doing this and we're trying to assemble all these examples of the Nature Conservancy to try to produce -- we're actually forming a program, a collaborative, a center, if you will, for conservation, science, and economics, in order to catalyze more of these examples to show what's possible.

But ultimately, I would argue, we still need a comprehensive vision, we need leadership. I'll take you back to a time when JFK said we're going to put a man on the moon, what did that do. Extraordinary technologies were born, new institutions were born. The co-benefits of that for business and economic development were extraordinary.

So here we are, we're all people of a world class water resource; why aren't we positioning ourselves to be a world class center for water solutions? Why

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don't we self-consciously draw a circle around it and imagine the co-benefits that could happen for technology, for business, for ultimately getting -- be smart and help balance - - achieve more opportunities to demonstrate how you can do it in a balanced way? Who better to do that than this region? What's at stake? Well, only three percent of the water on earth is fresh. And you can apply the Congressman's statistic globally--that the lakes of the world represent 20 times what all the rivers combined are in the world. Twenty percent of that fresh water, we've heard time and again this morning, is in the Great Lakes.

I'm going to take you back to my original statement from the UN Millennium Eco System Assessment Report. Our activities are putting such a strain on natural functions of earth that the ability of the planet's eco system to sustain future generations can no longer be taken for granted.

It's about human prosperity. We must invest now while we can. It's not a nice thing to do, it's a necessary thing to do, and if we do it really well, it can be a really smart thing to do.

MR. BARRETT: Good morning. I am delighted to be here, and I also want to thank the Brookings Institute for the invitation to be here. But lest I seem like an ungrateful guest, I'm actually going to start out with a little criticism, believe it or not, and that is, I'm looking at restoring prosperity, a wonderful publication, and I hope we all read it. And there's a page in here that jumped out at me, and it states this, which I

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don't disagree with probably the basic tentative statement, which is, perhaps many Rust Belt states would have been able to retain more manufacturing firms if their work force was better prepared to adapt to and to help create more highly skilled industrial jobs. Not a particularly controversial statement, but it is a statement that maybe we've referred to a little bit here, a phrase referred to a little bit here, that I think is part of the core of what our challenge is.

Think of the person who is sitting in the advertising firm who drew up the phrases Rust Belt and Sun Belt, Rust versus Sun. Do you think that person was sitting in the northern half of the country or the southern half of the country? Which is a more appealing vision for your mind?

My first request to every person in this room, and I'm not one of these people who likes to defy the First Amendment, but it is to never use the word or the phrase Rust Belt again. Let's just take care -- let's just throw it away, let's throw it away, and that is not in any way to disparage our present manufacturing bases in many of our states or our history of manufacturing.

But I think one of the challenges we have here, quite honestly, is how we view ourselves and how we present ourselves. And I think one of the challenges is, if you look at this region, and I will take Milwaukee as an example, 50 years ago in Milwaukee, if you had a strong back and a good alarm clock, you could have a job where you could support your family. In fact, there was recently an article about a

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company that had closed after many, many years, and there was a gentleman who had worked there since 1964, and he said he had moved to Wisconsin in 1964 because his father had called him and told him there were a lot of great jobs, and he said, in those days, if you worked in one of these great breweries or manufacturing companies or foundries, and you went to work, and you didn't like your job, you could quit your job that day, that morning you could quit your job, you could go to another company that same day, fill out an application, and start working the second shift that day.

That was the industrial heartland, that's where we were just kicking butt all over the place in this country in the 1940's, the 1950's, the 1960's. That has changed, that has changed dramatically.

First it was the southern states, and when I got off the Metro last night, I was walking to the hotel here, it was 9:30, it was 89 degrees, and I thought, well, one of the things that's changed this country dramatically, and I mean this, is air conditioning and central air conditioning.

That allowed companies to move to the south. Something that is now taken for granted as part of our human experience here is something that had a dramatic effect on allowing companies to move to places where they wanted to move before. But you look at where we are now and what we need to do. We need to do a much better job in selling ourselves. For the most part, whether it was Cleveland, or Pittsburgh, or Buffalo, or Detroit, or Milwaukee, or Chicago, we didn't have to sell ourselves, we didn't

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have to sell ourselves. It has changed. The jobs went south, they went to Mexico, they went to technology, they're going to China, they're going to India.

You heard it this morning, we're in a world economy, and we have an obligation now to let people in this country and let people in this world know why this is a good place for them to raise families and to do businesses.

Now, I'm going to talk a little bit about the environmental aspects of this. But I want to start talking about an expert, and the expert, and I always sort of buy into the notion, if you're more than 100 miles away from home, you're an expert.

Well, this is someone from the British Consulate who was visiting Milwaukee, and the reason he wanted to visit Milwaukee was because, unlike London, which has its peer cities, perhaps New York, or Chicago, or Los Angeles, most of the manufacturing cities in England were more comparable in size to Milwaukee. And again, this would hold true for Cleveland and Pittsburgh and Detroit and the other cities. And so he wanted to see how we were making the transition, because there were many manufacturing cities in England that have done well in the post-industrial revolution age of England and others that won't. Well, he wanted to pick my brain, but I think, well, I'm going to pick your brain while you're here. And so I asked him, I said, well, what are the common -- what's the common denominator for those communities, those cities in England that have made a good transition, and he said, the common denominators are water and higher education, and I thought, we're on our way, we're on our way.

You've heard the statistics this morning, and the number of higher education institutions in this region that are world class institutions, and obviously, we've got the granddaddy of them all when it comes to water. And I think we have to seize the moment and take what we have, lead with our strong suit, and our strong suit is this fresh water.

So I'm a little off message because I know there's a lot of talk in here about the North Coast. I like to refer to it as the fresh coast. We live on America's fresh coast. It's a wonderful, wonderful image, it describes who we are, there's no false advertising here, and it's really what we're about.

And what we've attempted to do, and this is where I'll segue into the environmental aspects, is to take our resource, our Lake Michigan, our Great Lakes, and really make it a place that's attractive to people. And I will leave here today, I will return to Milwaukee, where we will have on the shores of Lake Michigan the largest -- the world's largest outdoor musical festival beginning this afternoon at 5:00, the Summerfest, which will run for ten days. In the last five years alone, we have had the opening of the Calatrava, inspired addition to our art museum; in the last two years, we have had Discovery World Peer Wisconsin, which is a wonderful science type museum, including a great physical demonstration of the Great Lakes region including thunderstorms and lightening that comes, and so it's a wonderful place for people to come to become educated about the Great Lakes.

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In the last two weeks, we've opened the first state park to ever be in the city of Milwaukee in our 161 year history, where we literally took the rubble, if you will, from the deep tunnel that we dug to create a better sanitation system, put it in the lake, now we've connected it to the shoreline and created a state park right here in the city.

And what are we trying to do? We're obviously trying to lead with our strong suit. We're trying to take the asset, which I think is our best asset, our Great Lake, and draw people into the city.

And what we are seeing, and I think you're seeing this in other communities, as well, is, people have almost a mystic attraction to water, they love the water. And it has been, frankly, surprising to me to see the continuing entry of people into our cities to be near the water. And I think what we're starting to see here is a little bit of a reverse of what happens. Now I'm going to talk about the interstate system, where in the '50's and '60's, people were literally told, leave the cities, leave the cities, leave the cities.

So unlike Europe, or even New York, if you want to take that as an example, the great European cities, where people with wealth came to the cities, the American experience was, people with wealth left the cities.

Now what we're starting to see is more of those people returning to the cities, and I think it's, in part, because their children have grown, it's, in part, because

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they're drawn to the cultural amenities, they're drawn to the water.

And I have said only half in gist, when I've looked at some of the construction of our larger condominiums that are geared, quite honestly, to higher income people, for years we had battles with our suburban neighbors over affordable housing and low income housing, trying to get them to accept more of their social responsibility of having more low income housing or affordable housing, and it was met with either indifference or hostility.

Rather than to continue down that battle, we decided, well, if they don't want to help us by taking some of our poor people, we'll start to take some of their rich people, and we'll bring these people back into the urban center. And this has a tremendous benefit in terms of tax base, in terms of having corporate leaders who are much more invested in the community because they live there. They want to make sure that their street is plowed, they want to make sure that their garbage is picked up. There's much more of a buy-in literally when they are part of the community.

So, for us, using the lake, using the river as places to draw people to live, draw them to have fun, is part of our strategy of making our community an attractive community. But it goes beyond that, I think, and I think that several of the questions that were asked earlier, ones that I think are important questions for many, if not most of the communities in the Midwest.

As you look through these materials, you will see that we have
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experienced the phenomenon of people who have higher education degrees leaving this region. Chicago is a notable exception, Minneapolis is a notable exception.

And it's interesting, listening to people from Michigan, for example, talking about some young people go to Chicago or Minneapolis, that's the same experience that we have in Wisconsin, as well. So how do we keep the young people as part of our communities? Well, I think that there are several things that we need to do; one is, again, I think we have to sell ourselves. We have to let people, young people know that these are communities where there are lots of things to do, that there are many amenities that make them attractive places to live. And I understand the phenomenon also of wanting to sew your wild oats and maybe go to the east coast or the west coast, but I think to also get across the message that these are wonderful places to raise families, because they are wonderful places to raise families.

Again, without even looking at your material, some of the things that I've been saying at home are similar to what you're saying, that we have many of the amenities that the "more glamorous" communities have when it comes to sports or entertainment or theater or natural beauty. What we lack are several things, we lack the hour and a half commute, and we don't have hurricanes and earthquakes

And that's true, it's true, that's what the Midwest is about, we don't have those negatives that are evidence in other parts of the country. But I think one of our fundamental problems is that we have to, as a region, is come together and talk about the

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great amenities that we have, and you have to start with the lakes, because it's a tremendous, tremendous asset, both in terms of sustainability, in terms of economics, in terms of the future of this world. And I don't want to sound selfish, but I have sort of these guilts when I think about, well, how much should we covet this wonderful resource and not share with others, and I'm thinking, I don't think they're having that conversation in Texas, we know they're not having it in the Middle East, and there's a different view of it, because it's literally a life and death product, if you will.

But we do have I think an obligation to be the stewards. I think that there is an obligation for those of us in the Great Lakes region to be the stewards of this fresh water supply.

So in terms of -- and you talked about the fresh water analysis, Milwaukee would love to be the center of the fresh water analysis of what we can do. And we've got companies there who have worked in this area for many, many years.

If you think of the breweries, for example, there's a reason the breweries are located in this area, because of the plentiful fresh water that we have. Our view is, we don't mind sending water out of Milwaukee, just as long as it's in containers that are no larger than 12 ounces and it's fermented at the time.

But there are issues, and there are products that need this fresh water, and we are a wonderful place, as are other communities in the Great Lakes region, to do this without damaging the Great Lakes themselves. And again, I'm very mindful of the

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role that we play in terms of being stewards of that. But in terms of the environment, again, we see the Great Lakes as a great, great asset, but we also see it as a great, great economic asset in terms of the industries that we want to continue to foster in our community and to have it grow there, and that's true, again, I think, in many, many parts of this region.

So my message to you today is pretty straight forward. I think that we have to do a better job as a region coming together in promoting ourselves. I also think, to touch on some of the political ramifications, when I was a member of Congress, I watched with great interest as the Everglades were able to get their Florida delegation together and get resources to it, and I watched it with some grudging respect, because I thought, boy, it sure would be great if the Great Lakes could get their act together.

But we do have more political challenges with eight states and two provinces to come together. But I think that there, again, is a window of opportunity here, particularly with the '08 election, for us to come together as a region and say, let's present this to candidates from both parties, as to what is going to be done there.

And it doesn't take a millionaire political analyst to say, well, wait, every one of these states is a battleground state, what can we do to make this more attractive and win these states. So let's not miss that window of opportunity, but let's also do what we can to promote ourselves. In closing, I have to touch on maybe the question from the gentleman from Pittsburgh medical school there, when you talked about the elitism of

this. And I would be remiss if I didn't talk about the ramifications of this globalization on particularly people of color in this region and in this country.

As I said earlier, many of those jobs that were the backbone of many of our communities were filled by people who did not need a higher education. I never thought that, as the Mayor of Milwaukee, that I would walk into classrooms, which I do, and say to little children, I'm the Mayor of Milwaukee and I'm begging you to stay in school.

But there are often times that's how I'll begin a discussion. And I'm doing it because I can see how this world has changed so dramatically and how these jobs that once were the backbone of our community have disappeared, particularly for that group of people, and how the incomes have grown, the income differentials have grown based on how much educational attainment you have, and I think that that is part of our challenge, as well.

If you look at the demographics of many of these communities, you will note that the poverty is greatest, and if we are going to have hope in those communities, it will come if we can change that educational dynamic and have all of our children stay in school and get the education they need. I traveled to China about a year and a half ago, and it was incredibly exciting, it was incredibly educating, and it was downright sobering for me as I watched at Ninbo one of their largest ports, the huge containers that were leaving that port, many of which were coming to the United States, and it was row

after row, and the containers were the size of a railcar, and asking them, well, they're leaving on these ships and there were other ships coming in at the same time, tell me what's in them both ways, and they said, when they leave, they're 100 percent full, when they come back, they're 80 percent empty.

And the emphasis that they had on an economic growth and the emphasis that they had on education, to the point when I flew home, took the 13 hour flight and got home in the middle of the night, and my four kids who are all between the ages of eight and 12 were sleeping, I went in and gave them a kiss goodnight, but what I wanted to do was then grab them by their pajamas and say, all right, wake up, go downstairs and start studying right now.

But that's the challenge. And I don't think that that message has gotten through in many parts of this country, that this is a brand new ballgame. And whether your parents went to college, whether your parents didn't go to college, we are doing a huge disservice if we can't keep our children, and I really emphasize in particular our low income kids, in school, that those problems, those social problems that are evident in many of our communities are going to get even greater. So, again, the bright spot is that we have a product that we can sell, and it's the quality of life, it's the environmental amenities, it's the universities. We also have our challenges, but I'm convinced that we can come together as a region and move forward, and I think that's our challenge today.

Thank you very much.

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SPEAKER: We are actually past our time, so I'll try to close this out. But I just wanted to build off the Mayor's remarks and some of the other remarks of this panel. Number one, we will prohibit the word Rust Belt in all metro program publications. I can't talk for all of Brookings, but at least for my division.

I think -- it really strikes me, and I think you got to it, I think Tim and others referenced it, it gets back to Margaret's question, there is a political challenge here, and even your, you know, your slides about the Great Lakes covering eight states and two provinces as opposed to many of the other natural resources that are either maybe contained in one or a few states, there really is a political challenge as we move into the '08 election of having something close to a unified voice coming out of the five or six states that ultimately will decide this election. And I think this forum, the additional forums that we will hold, John's additional work, I think is obviously meant to fill an intellectual vacuum, it'll hold up the innovations that are happening at the local, metro, and state level, try to identify the federal legislative -- but hopefully we can try to catalyze across the states and across these different disciplines a network of corporate, civic, political, and media leaders who really can talk in more of a unified voice to the national political class so that we can begin to get about the business of doing these systemic and structural efforts.

So thank everyone for coming today, thank the web cast audience for listening. This will be -- continue to be streamed, not live, but old, on the Brookings

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web site. And I really appreciate everyone participating. Thank you.

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