Transcript
Fed Talk: Where Could Reshoring Manufacturers Find Workers?
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Presentation

Speakers:

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- **Jacob Duritsky,** Vice President, Strategy and Research, TEAM NEO
- **Annette Vickers,** Senior Research Manager, ARM Institute
- **Stephan Whitaker,** Senior Policy Economist, Federal Reserve Bank of Cleveland

Moderator:

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Khaz Finley:

Good afternoon, everyone. Thank you for joining us today, and welcome to our *Fed Talk*. My name is **Khaz Finley**, assistant vice president of External Engagement and Community Development here at the Federal Reserve Bank of Cleveland.

If this is your first time joining us, you may be wondering, what is *Fed Talk*? Some of our speakers may ask. Well, *Fed Talk* is our speaker series where we discuss issues that matter to our community. We've discussed everything from inflation to job market, even to financial literacy. And if you missed any past sessions, no worries, you can catch them all on our website at clevelandfed.org.

I'm really excited today to have our conversation with these panelists right here, titled Where Could Reshoring Manufacturers Find Workers?

Before we jump in, it's just a few housekeeping notes I'd like to provide you guys. Your microphones and cameras are disabled during the event. If you have any questions, we love them. We'll be using Slido. So today, just scan the QR code on your screen, visit slido.com, and use the event code FEDTALK, or just click the link in the chat. And if Zoom decides to act up, which sometimes it does, the meeting drops, you can always call in with the link or call in with the phone call link that we provide. One last thing before we begin, the views today that are expressed are that of my own and our speakers and do not express anything from the Federal Reserve Bank of Cleveland or the Federal Reserve System.

All right, let's get started. I'd like to introduce our panelists. First, we have **Stephan Whitaker**, senior research economist, senior policy economist here at the Federal Reserve Bank of Cleveland. Dr. **Marcia Ballinger**, president of Lorain Community College. **Jacob Duritsky**, vice president of Strategy and Research at Team NEO. And **Annette Vickers**, senior research manager at the ARM Institute. Thank you. I appreciate you guys joining us today, too.

First, we'd like to start by digging into why this is even titled Where Could Reshoring Manufacturers Find Workers? And Stephan will provide his research. Stephan, I'd like to turn it over to you.

Stephan Whitaker:

All right, thank you, Khaz, for the introduction. And for covering the disclaimer that, we always have to give this, in my opinion, it's only Federal Reserve Bank of Cleveland, and Board of Governors don't necessarily agree.

So, anyway, the data brief that we're going to use as a starting point, I put out late last year. I'm in the regional group. We're responsible for monitoring economic conditions in the 4th District, which is Ohio, eastern Kentucky, western Pennsylvania, and parts of West Virginia.

Our region is a bit more heavily involved in manufacturing, as measured by employment, relative to the rest of the country. So I've been following the discussion of reshoring for at least... getting close to 10 years now. We went through the first round of tariffs and trade negotiations. We had the supply chain interruptions in COVID. We had the CHIPS and Science Act. Now another round of tariffs and trade negotiations.

And so, as I've been reading discussion about the policies that have been put in place by multiple administrations now to promote reshoring and manufacturing, they broadly fall in a couple categories. One is securing the supply chain, so that if we have another interruption like the pandemic, or if there was some kind of international conflict, can we still continue to have critical goods that we need in the country and maintain our own production? And then another major motivator is the idea that manufacturing had, for many decades, provided relatively high-paying jobs for people without college degrees. And as manufacturing and employment has declined, real wage growth for people who don't have undergraduate degrees hasn't kept up. There hasn't been as much growth in employment and labor demand. And so, there's the idea that increasing manufacturing could increase that labor demand.

And then, in terms of arguments against reshoring, I've seen things along the lines of it's really difficult, so we shouldn't even try. There are some people who say factories are all going to be staffed by robots going forward, so manufacturers won't need people anymore. That's kind of a caricature of the argument, but it's out there. And then other people just say, "Oh, well, everyone who wants a job already has a good job, because unemployment is relatively low by historical standards."

All right. So, with all those things in mind, I went out and just wanted to gather a lot of numbers and put those out there to help people think through these arguments and make some well-informed policy decisions.

So, let's start with the really basic question of how many people are we talking about? So, on these two graphs, on the left-hand side, I have the count of people who work in manufacturing. The two different colors, the blue is workers without a college degree and green is those with a college degree. And we're going all the way back here to 1940. You can see it jump up around World War II to 15 million. And then from 1960 through the 2000, there's some business cycle fluctuations, but we've got about 17 million people in the U.S. working in manufacturing.

And if you go over to the right side, that's the share of employment that's in manufacturing. So even though we had those several decades of sort of stability in the level, other sectors were growing faster. And so manufacturing's share was pretty steadily falling.

All right. So, once we get to 2000, looking again at the levels graph on the left, you can see that there's some big declines in manufacturing employment around the 2001 recession and then again at the Great Recession. And those were only partially, if at all, reversed during the recoveries and expansions.

So, that brings us to where we're at today. In these numbers, we've got about 12.8 million people working in the manufacturing sector in the U.S. And the share of employment is at 8.1%. So that's down 4.5 million people since 2000. If you go back to a recent peak around 1980, we're down 6.6 million employees in manufacturing.

And so, if you wanted to put out a really ambitious plan and say, "We're going to try to reverse that. We're going to try to bring 6 million people back into manufacturing," that would be a huge increase compared to what is currently working. So it'd be a 50% increase. But over these years, the labor force has also been growing. So the share of the overall labor force now, it'd be the equivalent of reallocating a little under 4% of workers. So it's not going to take us back up to 20% or 30% or anywhere near that. A big increase in reshoring might get us to 10%, maybe 12% of employment.

Now, to the question of whether manufacturing employment is going to be increasing at all, I think we need to look outside the United States and think about whether demand for manufacturing goods has been growing enough that even though we know manufacturers both at home and abroad are always getting more productive, if demand for the goods is growing even faster than the productivity is, then you're going to see an overall growth in employment in the sector. And it does appear... We look around the globe since 2000 through this data run through 2022. There were 71 million additional people working in manufacturing globally. And you probably won't be surprised that a majority of that increase happened in China. But also, there were millions of additional manufacturing workers added in India, Vietnam. And then where we see the declines, both in the United States, but in other relatively high-wage countries, including the UK, Japan, France, et cetera.

So, I think the takeaway from this is that while productivity is increasing, demand is also increasing. So the United States, it's not unreasonable to think that we should be able to capture some share of that increasing demand and at least maintain manufacturing employment here.

So, in the data brief, after that global look, I shift to a regional look and talk a little bit about where is manufacturing happening in the U.S. right now. And I wanted to identify industry clusters. And so, taking 5,000 as a threshold and looking at if you've got a region that has at least 5,000 people working in a particular product category, I'm going to call that an industrial cluster, sort of an arbitrary definition, but I think the main takeaway would survive even if you adjusted that a little bit.

It looks like about 20% of manufacturing in the U.S. in terms of employment is happening in areas where you'd say there's an industrial cluster there. So we have a cluster in automotive in several metro areas in the district, including Cleveland, Dayton, Toledo. Pittsburgh still has a cluster in iron and steel production. But then the rest of the manufacturing employment in the U.S. is very widely dispersed. Lots of people working where they're one of a few hundred or maybe a few thousand people in a product category in their metro area or in their rural commuting zone. So that gives us a sense of how reshoring would probably be distributed if it follows a similar pattern once it comes back.

And then we can ask a related question. Even though manufacturing was declining overall in the U.S., were there some areas that were able to sort of buck that trend and increase manufacturing employment recently? So, I compare estimates of manufacturing employment from 2019 to 2023 and go back to an equivalent time window 10 years earlier. And we do find some places that added manufacturing employment. Most of them are fast-growing metros where they were adding employment in all kinds of sectors, but also were able to add it in manufacturing. So we see this in Phoenix, Atlanta, Nashville are examples.

But another thing that is visible in that data is the recovery from the Great Recession, particularly auto industry. It seems that those existing industrial clusters were able to regain some of their lost employment. And so we see increases from that in that particular window in Detroit, Flint, Toledo, Cincinnati.

So, I think the takeaway there is that, again, if there's an increase in manufacturing employment broadly, we can expect some of it in the fast-growing regions and some of it in the traditional manufacturing hubs.

So, the last couple sections of the paper, I wanted to speak to the question of, are there workers in the U.S. that would benefit from increased opportunities in the manufacturing sector? And I'm thinking particularly about production workers, maybe people who don't have a college degree. I mean, we should remind ourselves sometimes that 60% of the workforce doesn't have a college degree, and that will probably continue to be the case going forward.

And I wanted to focus in, in particular, in people who are in lower-income households, and I use 150% of the poverty level as a cutoff. And what we can find is that nationally, there's about 10 million people who are currently working, but they're not earning enough that their household incomes are well above the poverty line. There's another 2 million people who are unemployed, looking for work in those low-income households and don't have a college degree, so they may also benefit from new opportunities. And finally, there's about 7 million people who aren't working, don't report that they're looking for work. They're not in school. And they don't say that they have any reason that they couldn't be working, such as caring for a family member, right?

So, there's additional people, 19 million altogether, and when we break it down, I provide numbers in the brief for each region. So if you want to go out and look at the estimate for your region, it's there. Most places have tens of thousands or even hundreds of thousands of people who don't appear to be currently employed in something that's highly productive and paying a high income. So these people may be interested in being brought into the manufacturing sector if it's able to offer them some favorable wages.

The last exercise is something similar looking at the likely labor market entrants versus people who are likely to be retiring soon. And I thought before I started this, maybe this number was going to be negative in a lot of places, but it appears, based on my calculations, to actually be positive. Even though population growth is kind of slowing over the next 10 years at least, a lot of regions will be having more people entering the labor force who don't have a college degree and who might be interested in an opportunity in production work and manufacturing. And that's important consideration if you're about to invest a lot in setting up a factory. You want to know you can hire people for years to come going forward.

So, I'm probably over time. I'll wrap up there, and we'll continue the conversation. Thank you.

Khaz Finley:

Thanks so much, Stephan. I think a lot of the conversation today will support what you just addressed, actually.

And with that, I'm going to open up our Slido first polling question to the audience. If you can, scan the QR code right now or click the link in the chat. And we'll ask, what do you believe is the single biggest barrier keeping manufacturers from filling open jobs today? Just from your perspective, Stephan, as you wrapped up and as you combed through a lot of this research, I know you're more direct to factual, but what do you believe that influenced this?

Stephan Whitaker:

Well, I'm going to say one that might be... We'll need to discuss it further. But there was... A few years back, an economist in our group put out a policy report along with one of our regional executives, Julianne Dunn. And they looked at what was called the manufacturing premium. And so, if you go back about 30 years, people who worked in manufacturing earned about 10% more than people who were demographically similar, similar age, similar education levels, who worked in other sectors. And that came down over the years until it got down to just about 4% in the most recent data that they had a few years back. And I think the situation there is that a lot of manufacturers are facing stiff global competition. And so they can't necessarily, even if they wanted to, continue to pay that manufacturing premium. It's difficult for them to stay competitive and still offer that to their employees.

So, I think that's something that we need to think about more. We want manufacturing jobs to be steady, high-paying work that people can support themselves and support their families. And so, getting back to a situation where that premium is a characteristic of the sector would be very helpful in making all of this, what is the ambition for these policies come to fruition.

Khaz Finley:

Thanks so much. And I see our audience says, "Applicants lack the necessary technical skills." So, something you just said about pay and our audience's response sets the stage perfectly for Dr. Ballinger. So I'll pass it over to **Marcia Ballinger** so she can present what's happening at LCCC. I'll pass it over to you.

Marcia Ballinger:

Thank you so much, Khaz. And that is a great segue to talk about the role of community colleges in preparing our manufacturing workforce and talent supply. To start, I really want to thank you and the Fed Reserve of Cleveland for including Lorain County Community College and representing community colleges in today's conversation. Because we were created over 60 years ago to address the very issue that we're talking about with regard to ensuring that our employers are competitive and have the talent that they need.

So, just to give a little bit of background about Lorain County Community College, we were created in 1963 as Ohio's first community college with a permanent campus. And the history is that it really came out of the need for technical workers, primarily coming from advanced manufacturing with our automotive plants, with steel, and the supply chain. And community colleges were founded on the basis that affordable higher education should be within reach of all Americans. And so we've been very proud in Northeast Ohio to be able to serve our community,

along with the other community colleges in Northeast Ohio. We have focused a great deal on workforce and employer engagement, as well as open access. We currently serve, on an annual basis, about 13,000 students.

I would share, and I don't have slides in today's presentation on it, but Harvard has what is called the Project on Workforce. That is a great resource as you look at manufacturing and you look at talent pipelines. Lorain County Community College was featured in their book about America's Hidden Economic Engines, a case study on the work that we are doing along with four other community colleges. I'm going to delve into how we are focused today on filling that talent pipeline that aligns to what our regional needs are.

And I'm so delighted that I'm sharing the panel with my colleague **Jacob Duritsky** from Team NEO, of which I have the honor of co-chairing the Talent Development Council, as well as serving on the board. And Team NEO is our economic development intermediary here in Northeast Ohio, covering 14 counties. Some of the great research that Team NEO puts out really provides a guiding blueprint for Lorain County Community College to look at how are we very intentional about creating our curriculum as well as our employer engagement and talent pipeline to meet the needs of what is today and what is projected in the future with regard to aligning opportunities. And I have a feeling, Jacob, you're going to be talking about aligning opportunities.

But to share a very specific example related to manufacturing. So you can see on the data that the annual openings in our region in advanced manufacturing are just a little over 2,100. Then we look at, by county, what would Lorain County's share of production for those graduates be? And that would be 191. Right now, I have 120 annual graduates in the areas of advanced manufacturing, which we describe as industrial engineering tech, mechanical engineering tech, industrial machining, welding, automation, and microelectronic manufacturing. We want to meet what Team NEO's projections are. We need to double that. But our stretch goal is to quadruple that or four times that. So, how are we going about doing that?

And this is, we're very committed to what we describe as our Earn and Learn programs because we think it's very critical to engage students into the field early as part of our Career by Design program so that individuals are earning in areas that they are also learning in. And these are just a few of the examples.

And so, our entire continuum ranges from students who start at one end earning industry-recognized credentials, going on to Fast-Track programs, which are just less than a semester, which can ladder up to a one-year technical certificate, which then goes into an associate's degree and then an applied bachelor's degree that we also offer in these areas.

What's great about this approach from the talent supply chain and from those individuals who are interested in pursuing, they can start with something that's very manageable, earning that first credential, getting a foot in that manufacturing plant, being able to be a technician, and then continuing to move up the career trajectory.

A point that I would emphasize that has really been a shift is how students now come to Lorain County Community College. And that is, 80% or 8 out of every 10 new students enters the college through a partnership or a pathway. This is a very different model than what had been the case for decades when students would enroll either after high school or coming back at some point. And so, the three areas that we believe are essential to building that talent workforce are

high school pathways and partnerships, fast-tracks for working-age adults, and our employer engagement.

The high school pathways, Ohio has wonderful public policy around a high school program called College Credit Plus, which is providing individual students with the ability to enroll in high school and college classes at the same time that count for graduation for both, and they can do that free of charge. That has been an accelerant for Ohio to build its talent workforce. At Lorain County Community College, 52% of all of the high schools that we serve, 52% of the high school graduates are earning at least 22 credit hours from us by the time that they graduate. And what's important also to note about this is most of them are first-generation college students, but also they are twice as likely to earn a degree or a credential than a student who does not enroll in at least one class.

One of the breakthroughs from a policy perspective has also been how can we work with students who are eager to pursue career-technical education for college credit while in high school. And so, if we think about manufacturing careers and technician-level opportunities, it's perfect for them to begin in high school. And the breakthrough is public policy also that allows students who may not be college-ready in math and English yet, but if it is a high-demand pathway that has industry support, we're able to do that through an innovative waiver. And I know that Cincinnati State, Dayton, Sinclair Community College, Columbus State Community College in Ohio, they are also utilizing this approach.

We also know there are many students in high school who don't have a career plan. And so we are focused on ensuring that all high school students who we work with have a career plan. A new program that began about four years ago is designed explicitly to connect students to high-demand career exploration areas for college credit while they're in high school. And that's known as the Bridges to Success program. And that has proven to also demonstrate that students who enroll in this program then immediately after high school are enrolling in high-demand career pathways at Lorain County Community College.

I would also share with you that we are very eager to create what we like to describe as career-connected high school programs. Midview High School in Grafton, Ohio, decided that it wanted to take what had been its shop factory floor and its shop classes and convert that into a clean room with advanced technologies so that we could deliver a MEMS program. And so, a wonderful example of how students are earning industry-recognized credentials while in high school, and this is supported by business and it's supported by philanthropy as well.

The second program that I would highlight is one at Amherst High School, and this is one that is focused on automation and robotics. And you're going to hear more from my colleague Annette from ARM about automation and robotics and how that is really providing a foundation for students to also move into career pathways. But as you can see, the students take all of these classes, they earn a FANUC certification, and again, it is done right at the high school where we do a train-the-trainer model with the high school teacher. And I'm going to share with you a very quick video now that brings it to life for you.

Video:

I'm John Agostinelli. I am an adjunct faculty at LCCC in the Automation Engineering Technology department, and I am the robotics and automation instructor here at Amherst Steele High School. This is our advanced manufacturing lab. We knew that industrial robotics and

programmable logic controllers were the foundational skills that we really need. Our first class started in January of 2024.

The first one we started with is robotics and then you do PLCs. This is mechatronics. Today we're going to use the advanced manufacturing system to put everything together and show how it is used with companies in the industrial world.

I got some teacher training from LCC. They had their Industry 4.0 Teacher Training. We started our equipment from the training. LCC was so generous. They donated $220,000 worth of equipment. We couldn't have done it without LCC. We offer credentials in the industrial robotics, so that is through FANUC America. Through the PLC side of it, they get the Allen-Bradley/Rockwell PLC certification. And then they will also get through SMC International Training, they get three more certifications. So, in total, students can get up to nine industry credentials just in two years, right after they graduate from high school.

In college, I would have been a mechanical engineer, and I've always enjoyed doing things hands-on, like electronics and coding. So that's why I did robotics, and then it just grew on me.

We're starting to see it grow extremely quickly. And so things like how Midview is doing their clean room and partnering, things like this with the advanced manufacturing, we wanted to take that approach to education and develop those deep critical thinking skills but meet all types of learners. We're working with companies locally, Thogus Products is one of them in Avon, and they're open to doing Earn and Learn, like where they go to school half the day, and then they go and work for them half the day. And I'm seeing so many openings coming up right now. We've got a lot of people retiring into trades. And so, we want to really be that career-tech education school that can really get that hands-on, those jobs to meet those students. That's what makes them come alive. And look at what you see here. I could not have done this without Lorain County Community College.

Marcia Ballinger:

And while those are examples of high school programs, we're also very focused on how can we accelerate on-ramps for our working-age adults. In many cases, these are adults who may be underemployed, they may be unemployed. And so we created what we call our Fast-Track programs that can be completed in 16 weeks or less. One of the things we know about adult learners, many times they are juggling family responsibilities, outside commitments. And so, being able to design curriculum in smaller chunks that ladder up and build to associate degrees and bachelor's degrees. But in this case, our Fast-Track programs are facilitated in a way that enables the student to, in less than a semester, enroll in high-demand areas. And that's a piece that I would emphasize. So, when we say high-demand areas, as it applies to today's conversation in *Fed Talk* with regard to manufacturing, many of these are in the advanced manufacturing arena.

The other piece that I am so excited about that connects to Fast-Tracks at Lorain but is applicable to everyone on the webinar today, and that is Workforce Pell, which will be going into effect July 1st. And this provides the opportunity for all programs that are less than 15 weeks for students to be able to have financial aid from Pell to be able to apply for that. And we believe that this will be a game changer, particularly for our adults in our communities who are interested in earning a short-term certificate so that they can be more competitive in the market.

And then I'll end with employer partnerships and just how critical it is to engage in employer partnerships. Historically, community colleges have had advisory committees. And while that's very important, an employer-engaged partnership is one where you are truly co-designing together to meet the outcomes of what that employer needs are. And so, I've just highlighted a few. I'd be happy to follow up with anyone after today's webinar. Ford's, Swagelok, Welser Profile, and Intel are four examples of major commitments in terms of understanding not only the data from what we see from a regional level but what is that employer's specific needs, and then how do we design or redesign curriculum with regard to that. And so, again, very happy to follow up with anyone as this webinar ends.

Khaz Finley:

Thanks so much, Marcia.

Marcia Ballinger:

Thank you, Khaz.

Khaz Finley:

And with that, we'll pass it over to Jacob so he can speak how his data aligns to that and their strategies at Team NEO.

Jacob Duritsky:

Great. Thanks so much. And this is great to follow President Ballinger, as always, because there is so much alignment. And, Khaz, thanks so much for the invitation. And thanks to the Federal Reserve Bank of Cleveland for inviting us.

This is a topic that is very important to us. This is a topic that we wrestle with every single day because we are in the business of trying to convince companies here in Northeast Ohio to grow. And even harder than that, trying to convince companies to grow or expand into Northeast Ohio from outside the region.

So, Team NEO, where I serve as vice president of Strategy, Research, and Talent, is a 14-county economic development organization. And we are here to help our companies grow and to bring new business into the region. We are one of seven JobsOhio partners. For folks not familiar, JobsOhio is the statewide economic development organization that is unique and that is funded through liquor sales, not through the general fund. And what that means is later on, if you're tired and going to relax, if you enjoy a spirit as beverage, you too are supporting economic development in the state of Ohio. So thank you in advance for your contribution.

But what it also means, for any of the companies who might be listening to our *Fed Talk* today, if you are in an export-based industry, if you're in manufacturing, like we're talking about today, or professional services or finance or any of the other sectors that drive Northeast Ohio's economy, we might be able to help if you're looking to grow. Are you adding jobs? Are you looking to make capital investment? Call Team NEO. Call JobsOhio. That is why we are here. So, that is the commercial for who we are.

But I'm going to level set and talk about sort of the macro view of what's happened over the past couple of decades and why manufacturing still continues to be such an important element of the work that we do here in Northeast Ohio.

So, first and foremost, if you look at the top, we're looking at real GDP since 2000. Northeast Ohio's in blue, just an index of percent change going back to the beginning of the century. And what you see is GDP growth has largely trended like that of the state, a little bit of a divergence heading out of the pandemic and looking out toward 2030, but we've grown about on par in part because of the growth we've seen out of manufacturing. The U.S., which in some ways is an entirely different market, has grown quicker than both.

But if you look at what's happened to jobs over the past, really, 25 years, what we've seen in Northeast Ohio in blue is now kind of three downturns. The Great Recession in '08. Before that, the kind of dot-com bubble that really was a lot of the reshoring of manufacturing that we saw, offshoring of manufacturing that we saw. And then finally the pandemic. And what they translates to is a market in which GDP is growing, jobs have slowly but steadily declined over the past two and a half decades, and we're down about 170,000 people.

But within that environment, when you hear job loss and people think of the perceptions around Rust Belt, but you see GDP gains and you see the strong productivity growth that's inherent in there, what we're left with, I think, in 2025, 2026, is a really strong value proposition for manufacturing in Northeast Ohio. Today, it still makes up more than $40 billion in GDP for Northeast Ohio. That's about 15% of everything we produce. More than 6,000 businesses, 230,000-plus jobs. We're the third-largest state for manufacturing. And we think we have assets like advanced technologies, manufacturing legacy and know-how, really good logistical access to the rest of the country, strong supply chain, and that talent that we care so much about to grow here in our region that really makes our manufacturing story one that we think is a cornerstone of Northeast Ohio's economy.

And that's not just supported by the data. I'll tell you that in our world, we're working with companies all the time. We talked about 600 businesses. About a third of those annually are advanced manufacturing. And you have a pipeline of leads and folks who are thinking about investment, and those leads convert to potentially projects. But when you're really, really getting interest from a company and making an investment, that often becomes a site visit. And that is a company who is willing to come into town from outside of Northeast Ohio, understand our assets, which largely involves sites and talent, and think about making an investment here. In 2026 alone, we have had five site visits from companies, and we're only about a week into February. All five have been advanced manufacturing. Three of those have been international companies looking to have their first presence in the United States.

So, reshoring and the opportunity for reshoring is real, but talent is going to be a critical element of how we ultimately are able to compete and close those deals. I mentioned that manufacturing continues to be huge. When you look at the sectors that matter most to us, manufacturing directly is the second-largest sector of employment. Healthcare, social assistance outpaces it a bit. But when you think about the indirect and induced impacts, so the supply chain jobs, those service sector jobs it supports, you can argue that manufacturing is responsible for 40% to 50% of Northeast Ohio's jobs and GDP and output in total. So, that is great. The value proposition is great. The supply chain is great. And the talent element is incredibly, incredibly important.

We'll get to Lorain County Community College's partnership with us in a little bit. But here you can see a sample of some of the other institutions who are really driving manufacturing and manufacturing training. And this is a critical element. When a company comes to us and says, "Do you have the assets that we need?" sites are incredibly important, right? Sometimes they're 500,000 acre developable sites in a short amount of time. But when we talked to those 500 or

600 companies over the past couple of years, 90% indicated they wouldn't be able to grow without the right talent assets. So, having the talent and having the institutions here, like President Ballinger just discussed, is incredibly important.

So, where's the challenge come in? We're selling the assets. We have good supply chain, good logistics. We have all the providers. And what we found through aligning opportunities and the research that President Ballinger discussed is that it's not a lack of people, and it's not necessarily a lack of job opportunities. What we often have is a disconnect and a misaligned opportunities in the economy, and it's particularly prevalent in healthcare, IT, and manufacturing. Each of those changes in different ways. IT, which was hugely in demand coming out of the pandemic, has gone down a little bit. Healthcare, registered nursing remains strong.

But a through line since we started doing this report about a decade ago has been that manufacturing jobs, particularly skilled production workers in Northeast Ohio's economy, are in demand. But relative to the credentials and certificates and associates and at a higher level, bachelor's plus being rewarded, we see underproduction of those folks every single year. So, for us, when we say where are the workers going to come from, the opportunity we think is really in our backyard. But how do we capitalize on that? How do we make sure people are aware of these opportunities? And as we're building and recruiting companies here into Northeast Ohio, how do we make sure that people are aligned to the labor market that we see?

And as we think about this and the challenge going forward, one of the opportunities that we have is what we see as a significant amount of growth that's going to take place within production work over the next 5 to 10 years. Because you look at the trends of what's happened in both employment and GDP over the past 25 years, part of what's built into that trend, particularly the employment trend, is that Northeast Ohio is a little older than the country as a whole. On average, we're about 5% older. That means that that 25- to 44-year population hasn't necessarily kept pace with the 55-plus population, and a lot of the folks that we see projected to leave the labor market in relatively large numbers in the coming decade.

And if you look at where those workers are projected to leave, 9 of the top 10 sectors most represented by workers 55 and over are in advanced manufacturing. So that's aerospace, that's automotive, all the sectors that we care about. So, it's not just looking at kind of the net change and where manufacturing employment is going. It's also very much thinking about replacement work and how, from what we project at least, of the next decade, those 70,000 to 100,000 manufacturing production jobs are going to get filled by folks in the labor force.

This is a projection out toward 2030. You can see two critical elements of the Northeast Ohio economy. Transportation and warehousing is projected to grow about 7%. Now, a lot of that is kind of the Amazon impact and distribution and the way we're consuming goods, but a lot of that is also competing for that manufacturing labor, whether that's CDLs or storage and distribution. And then you look at manufacturing and you see a 2% decline.

But what I would caution, and Stephan's spot on with his research and what's happened over the past couple of decades, but if you look Northeast Ohio in 2000-2001 or the Great Recession, one of the things you'll notice is that manufacturing led a lot of that decline in term of the downturn that we saw in those recessions. If you jump to the pandemic and what we're projected to see out toward 2030, we've actually been relatively flat. So, as we look at that 230,000 or so workers in the economy, we see that relatively stable. Maybe it goes up a little, maybe it goes down a little, but it's flat, which is something that we haven't necessarily experienced over the past couple of

decades. So, what that means is that production work and that replacement labor becomes all the more important.

How do we get there? What's the path forward? Well, a part of it is thinking about how skills continue to align with changes in the economy at the highest level. And AI is everywhere, and that's what we're talking about. And you can't open a newspaper or read something online without hearing about AI, and it's real. But one of the things that we found is that when you look at adoption rates from the businesses we're talking to, it's not showing up in necessarily as large of a way in some of our most critical sectors, like professional services and manufacturing, as I think it's projected to over the next three to five years. And take manufacturing for instance. This is 2024 unique job posting, so certainly things accelerated last year, but less than 1,000 jobs in manufacturing specifically called out AI as a component of the work.

Now, one of the challenges with this is the speed at which adoption takes place, and I think it's going to be different depending on the sector, but I'll share with you an anecdote that we heard from a company. This was a mid-sized manufacturer, a few hundred employees. And we were talking to them about automation, innovation, new technologies. And this company, who a lot of folks would know if I could disclose it, said to us, "Look, we're thinking about that, but that's a ways off. In 2024, we were recording tolerances using a pencil and paper. In 2025, we finally switched to Microsoft Excel." So, from an adoption perspective for small and medium-sized manufacturers, the journey to get from pencil and paper to AI may happen a lot more quickly, but it's still an adoption journey that's going to take some time.

So, you look at the market. We think we have a strong value proposition. You look at site visits for us, a proxy of companies who are looking to grow, even in the face of uncertainty. And you look at sort of the labor force dynamics behind that. And for us, it means how do we start to think about intentional collaboration that is empowering, particularly young people, but all people with this type of data and information, and partnerships that can bring this to life for young people.

So, when we talk about where are the people who can fill these jobs, if indeed we do see reshoring, they're in our backyards. And it takes institutions like Lorain County Community College and leadership like President Ballinger, but also an economic development and workforce and higher education ecosystem that can start having these conversations. So, a part of what we co-designed with Lorain County Community College was Career by Design, which takes all of this labor market data and works with faculty and advisors within our colleges, and particularly in this case, Lorain County Community College, to have a conversation about, "Where are degrees leading? How do we think differently about pathways? How do people have the confidence that when they go and they spend their time and their money getting a degree, it will lead to something on the other end?" So, it is intentionally thinking about all the tremendous assets that President Ballinger discussed, but it's also empowering the people on the front lines of those conversations with good labor market data about the opportunities for collaboration, the opportunities to participate in the economy.

We think this is where data comes to life. And for us, this is the pathway forward to connect those folks to hopefully more of those reshoring opportunities going forward. So, if you can't hear it in my comments, sure, we have challenges and headwinds that we're facing, but we also have lots of opportunities and it's partnerships like this.

So, if you have questions, feel free to reach out afterwards or ask any questions as part of this discussion. And more importantly, if you're a business looking to grow, drop me a note. Khaz, thank you.

Khaz Finley:

Truly appreciate that, Jacob, as well as Dr. Ballinger.

And I think that sets the stage for our next polling question. Relative to smaller cities, where should employers most target their recruitment efforts to find experienced potential workers when manufacturing opportunities are open?

And as the questions roll in, I want to ask Stephan, as I looked at your paper, I saw something highlighted. You see a high number of individuals in the section where it says Largest Regional Increases in Manufacturing Employment. Toledo was highlighted. So when you're talking about a smaller city, what data was reflected that really influenced that 18% influx?

Stephan Whitaker:

That was one that I felt in that particular table that you're probably referring to, recovery from the Great Recession. So I think there was a big downturn in auto, which was in the numbers from 2009 to 2013. And then by the time we got to 2019 to 2023, which is sort of the end period that I looked at, a lot of that had recovered. So, I think that what demonstrates is that recovery is possible. Sometimes we think these things are a ratchet, they only go down. Well, no, there are instances where we see increases in manufacturing employment following a cyclical decline. So, yeah. And Toledo has long-established industrial clusters, like many places in the 4th District and in our region. And they were able to recover in that instance.

Khaz Finley:

Thanks so much. And as we see the responses come in, you see overwhelmingly, primarily at local high schools and vocational colleges, as discussed on this stage, that's where people really, really feel like people can thrive. And I wholeheartedly agree with that.

And with that, we'll wrap up the presentations with Annette to discuss what's happening at the ARM Robotics Institute.

Annette Vickers:

Thank you, Khaz. Thanks so much for having us here today. So, let me just start off by talking a little bit about who the ARM Institute is. I'll give you a couple slides, a little bit background, in case you are not familiar with our organization.

Well, Advanced Robotics for Manufacturing is what ARM stands for. We're one of 18 different institutes that was established by the DoD. We were set up by Carnegie Mellon University in 2017 in Pittsburgh. We are a membership-based organization. We've got over 450 members at this point. A lot of them are the small/mediums that we were just talking about and large manufacturers along with academia. Lorain County Community College, for instance, is one of our members. We've got community colleges and universities, tech schools. So, we have the full ecosystem that's impacting manufacturing. The money that we do receive from the Department of Defense, we basically use that money to fund projects in technology and workforce development with our membership.

So, our mission, just to summarize, is really to accelerate the development and the growth of using robotics in manufacturing. And so, we do this in a two-pronged approach. We have both the technology development as well as the workforce development. Because I think initially you think robotics, AI, all these new technologies. We all know that there are technical challenges that have to be solved. But the one thing that we hear continually from our membership is that they don't have the people, they don't have the skills that they're looking for. And so workforce becomes a very important and relevant issue.

So, based on that, ARM has been doing a lot of work internally and also with Deloitte Consulting with understanding what's happening on the workforce front. I think a lot of us are familiar with the research that was done by Deloitte that said that by 2028, there would be 2.4 million jobs unfilled in manufacturing based on the trends that they've been seeing. And so, if there's going to be this gap, how are we going to fill that gap? Where is the demand? Where is the supply coming from? How are we going to try to fill this gap? Obviously, Lorain Community College is doing a great job, along with other community colleges and universities. But are there other areas? And I think we're going to hit on that a little bit later in our discussion. Where are maybe some non-traditional places that you can look to also fill that gap?

So, there's a couple different reports that I want to reference. The one is the Future of Workforce report that we published about maybe a year and a half ago. And there's a link to that report. And we also developed supplemental reports to that that talks about some of these nontraditional ways of filling the gap that we anticipate for workforce. And we also, and I'll be presenting this in the next couple slides, worked with Deloitte on understanding the supply and demand across the country. So, I'm not just focused on Ohio. I'm looking at it from a more broad-brush approach across the country.

And so, one of the reports was called Labor Market & Skills report that I'll be pulling some of the data for this presentation.

So, the purpose of this work was to focus on the advanced manufacturing technologies. As I mentioned, the ARM Institute is for robotics and artificial intelligence. So that's the two areas that we were primarily interested in. But we also looked at some of the other advanced technologies like additive manufacturing, advanced computing, anything related to semiconductors, with cybersecurity, computer science, all of these areas that are now becoming a major influence in the manufacturing world.

And so, just a quick... I just want to highlight a couple findings from that report, just kind of a bottom line up front here. First of all, where is the supply? Where are the workers? And I'll show you a chart on the next page showing you graphically that the Great Lakes region, which is where we are now, the Great Lakes region, is where a lot of the supply for this talent is currently located in the country. A lot of the demand is coming from certain high metropolitan areas, along with looking at areas that are actually in the southern part of the country.

Another statistic I want to talk about is, what are the degrees or the qualifications for these jobs? When you think of advanced manufacturing, a lot of people think, "Oh, I could never go into that field. I don't have the math skills. I don't have the technical skills." Well, 54, slightly over half of these jobs are jobs that require a bachelor's degree. But almost half of these jobs do not require a bachelor's degree. So you can get an associate degree. A lot of these jobs are being filled by individuals that really just have a high school diploma with some additional training.

So, looking at the workforce landscape supply across the country, as I mentioned, the highest percentage of the supply is in the Great Lakes area. And you can see the northwest areas, you can see some of these areas that are very low in terms of the supply of workers.

If you look at what's happening for the manufacturing landscape, I have them ranked based on region. As I mentioned, Great Lakes has the highest percentage going down to the northwest and north central with 5% each. And if you look at some of the major employers, you see Amazon, as you hear in the news all the time, using some of these new technologies. They're one of the major employers, as you can see, with Google, Microsoft, Lockheed Martin, Boeing. Many of these are members of the ARM Institute. We know that there's been recent downturn with manufacturing, but some of these jobs, if you look over the last five years, actually had an increase in some of these areas because advanced technologies are increasing.

Looking at where the demand is coming from, you can see some of the top cities. You can see where in terms of roles, software engineering, business analysts, electrical engineers, a lot of these areas like data scientists with AI technology coming forward. So, this all makes sense as far as where the demand is coming from. But across the board, I think in every community, in every geographical area, computer science always ranked up as being one of the top skills that was in high demand.

So, if you look at the trend in the talent demand, during the pandemic, you see how the demand was starting to dip, and then it kind of overcompensated over the next year to two years, and now it's kind of coming back to more of a steady state.

So, just to summarize again, the demand, a lot of the demand is actually going to be coming from the southwest and some of the southern regions. The supply, as I mentioned, is the greatest up north, frankly, in the Great Lakes region. The talent supply pipeline, we tried to highlight some of the universities and schools that are doing a great job with developing this technology. Georgia Institute of Technology is one of the ones that ranked above the top universities. Amazon also is developing a lot of talent. And if you look at the challenges, I think we've been talking about, the biggest challenge is the skills gap, trying to make sure that manufacturers are working with community colleges and universities closely so that they can define what their needs are.

So, the projected 10-year growth in employment, again, we're focused on these advanced technologies. You can see how data scientists, information security analysts, anything related to cybersecurity, those areas, like AI, cybersecurity, those areas are expected to have the highest projected percent growth.

So, just to kind of reiterate, 54% of these jobs require a bachelor's degree, while 42% only require a high school diploma and 4% require an associate's degree. So, there's room for everyone to take advantage of what's happening with these advanced technologies. Also, I thought was kind of interesting, 77% of advanced manufacturing jobs do not require previous experience in the manufacturing industry, which means that a lot of these skills, because they are becoming more technology oriented, you can really transfer them from industry to industry.

So, I just wanted to spend a few minutes talking about a service that the ARM Institute provides when we're talking about looking for individuals with the skills that you need within a manufacturing environment. It's called RoboticsCareer.org. It's a site that we've developed that gives you... from both sides. It tells you where you can get training based on the competencies that are needed for a particular job and what jobs are available. So, we've been working on this

database over the years, and we've also developed a competency framework so that we can show you for different roles, like robotics technician, robotics specialist, robotics integrator, what are some of the skills that are going to be needed for each one of those roles so that you can figure out where you fit or where you need maybe additional education.

And since we introduced it in 2021, you can see how much... it's really taken off in terms of usage from 2021 to 2025. We've got over 100,000 users at this point. And so, the people that are using it really crosses the gambit. We're talking about people that are looking for jobs because you can find jobs. And it's different from a LinkedIn or any of these other job sites in that it focuses on the competency model that we've developed for robotics. And now we have also a competency model for AI. AI is fairly new. We've worked with our membership to develop what are the skills that are needed for entry-level, a mid-level, and a higher-level role in their organization.

And as I mentioned, the value of the robotics career is not just for job seekers, but it's also for manufacturers, for employers, for education providers, anyone that's looking to understand where is the technology going, what are the skills that are going to be needed. So, it's just a tool that you can put in your back pocket.

So, any other questions, please feel free to direct them to me.

Khaz Finley:

Thanks so much, Annette. And I'm sure you'll have questions. I appreciate your time, you guys.

We're going to dig into a conversation. But first, I want to ask the final polling question. Which workforce development strategy would you, our audience, prioritize to support manufacturing reshoring efforts? Dr. Ballinger, just asking you, what's your perspective?

Marcia Ballinger:

I'm a little biased. So I'll be perfectly transparent. Community colleges are just pivotal to the type of education and training that we're talking about today. We were created, as I mentioned, back in the '60s to really work on that middle-skill level. And that has continued to evolve and transform over time. But partnership is what we're all about. Community is our middle name. And then working with the career-technical centers is critically important. And as Jacob talked earlier, it really is that ecosystem. It's not one. It's how we collaborate and work together across our higher education institutions, K-12 career-technical centers.

Khaz Finley:

Definitely. Ecosystem is critical.

Marcia Ballinger:

Yes.

Khaz Finley:

Partnerships like yours, partnerships that you've developed with organizations like the ARM Institute as well. It's critical for the progress that you're making in your region and in our region as well.

Marcia Ballinger:

It absolutely is critical. And then taking what we learn from others so that we can scale in different areas. So, as Annette was talking about the competencies, for example, that ARM developed, we've taken those competencies and have worked back here in Ohio to roadmap that and to embed those competencies into curriculum. And so, it really is, how do we continue to create the right collaborations to really accelerate the talent supply chain?

Khaz Finley:

Yeah. And I see our audience is split between-

Marcia Ballinger:

Ooh. Well, let me just say-

Khaz Finley:

There you go.

Marcia Ballinger:

... community colleges, we are at the forefront with apprenticeship programs. And so Lorain County Community College, Ford, for example, Ford Motor Company, we've had 1,000 apprentices go through that program, and we continue to create apprenticeships for our workforce, and that's a critical piece.

Khaz Finley:

Would you like to chime in, Jacob?

Jacob Duritsky:

Yeah. Well, one thing I would add, one, fully agree. I mean, I think that is the bulk of the impact we can make and they got the buckets right. But I do want to point out, even for D, developing relocation incentives to attract workers, I mean, JobsOhio has a tool called the Relocation Incentive. They can work with companies around specific needs, some of those very technical, sort of mid-skill manufacturing-related talent, to find workers who they can't find locally, to bring folks in from outside of the state as well. So, there's no silver bullet in any of this work, right? In the first two, I think you're going to get the biggest impact. But even thinking about JORI and some of the incentives that exist, we have to be creative about how we get workers.

Khaz Finley:

I mean, I also like to chime in with career navigation and exploration. We have a tool, Occupational Mobility Explorer, which allows individuals to truly navigate their career path and really see where you're going to go once you start to dig into your career and your career process. So, that tool in itself, partnered with everything you're doing in a community college level or apprenticeship program, would allow you to see where you're going and where you potentially can go, which could really influence the direction you're going to move in.

And with that, I'll dig into a few questions before we get to our audience questions. First, I'd like to ask, how should manufacturers prepare for these workers for increasingly automated and AI-enabled production environments? First, I'll ask you, Annette.

Annette Vickers:

Okay. Well, so the first thing I would do is, it's like, how do you match up someone's skills with the skills that you need? And as I mentioned, the RoboticsCareer.org site is the perfect place to start because you can take someone, someone comes on that site, they ask you, "What are your competencies? What are you trying to achieve? Where do you want to grow?" And when you're trying to match someone for a particular job that's being posted, they're telling you what competencies are needed. So they'll tell you if you're a match for that particular role. So, that would be the first place that I would start.

And as I mentioned, a lot of these skills are transferable. Because manufacturing is becoming more technical, and a lot of the younger generation is tied to their phones and technology and they're attracted to that, they have that skill set. And if you're using that skill in another industry but you can make more money in manufacturing, then that would be the most logical place to possibly transfer some of those skills.

Khaz Finley:

Dr. Ballinger?

Marcia Ballinger:

As we look at AI, the utilization of it is increasing exponentially by the day. There was a report that came out this morning. I highlighted earlier Harvard's project, Managing for the Future of Work. They publish a lot as well. And their latest research, and they have an interactive tool around AI, that adults, slightly over 50% of adults, are utilizing generative AI now on a daily basis. And we know that some of the, in fact, requirements coming for K-12 as well as higher education, students are going to have to demonstrate AI competencies as part of their general set of competencies.

So, I believe that the value added that AI brings to this will then change the complexity of what the jobs are and, I think, provide more opportunities the more that AI is really helping to drive the future direction of those manufacturing jobs and enable the workers to focus on those critical areas that AI is not yet there.

Khaz Finley:

That's great. Stephan, in your paper, you discuss where the young professionals are going based on statistics, or where they're not going, I should say, when it comes to manufacturing. Do you think that influences them as well from a statistical standpoint, the technological kind of draw in a different direction?

Stephan Whitaker:

Well, I think I'll stick to the data brief on manufacturing, because it's a great win if I get people to go and take a look and read all the way to the end of that. I apologize. It's kind of lengthy. I was trying to cover a lot of things.

So, that one doesn't get into the question of migration, but it does look at the question of aging. And that was motivated by a paper that came out briefly before I wrote my brief that showed that as manufacturing employment has declined, a lot of people who were in the field, say, around late '90s, 2000, they sort of played musical chairs and not too many of them have left the sector. But there was a big drop-off of flow of young people into the sector. So young people starting their careers would choose somewhere other than manufacturing to begin. So, if we're going to rebuild the manufacturing workforce or even just maintain it, we have to get some of those young people to either start their careers in manufacturing or we need to attract them in from some other sectors.

So, the exercise in the brief is to take the count of people who are aged 10 through 18. I make a few assumptions about how many will go to college and then how many will remain in the region that they're in. So I guess, actually, there is a migration dimension there. And then that gives me a number of how many people I think are going to be entering the labor force over the next 10 years without a college degree, so who may be interested in production jobs in manufacturing. You can subtract off of that the count of people who are still working, but age 60 to 68, so likely to be retiring pretty soon.

And I was sort of surprised to find that there's still, again, tens of thousands of people in most regions who will be additional new entrants beyond just replacing the people who don't have a degree who are going to be retiring out. Now, that's all sectors. So that doesn't say that those people are heading into manufacturing unless they're motivated to and assisted with that. There was a couple exceptions to that. Like here in our region, the Pittsburgh region, it looked pretty much balanced. We're only expecting as many new people as will be retiring out. But in Cleveland, I came up with 58,000 new entrants. Columbus, it was a little higher, 69, 121,000 in the Cincinnati area.

So, I think if you don't... You can adjust any of the assumptions that I make. You may come up with a slightly different number. But it's definitely the case that we've got a lot of people who are going to be rising into the labor market who aren't going to have a college degree, but they're looking for good-paying, interesting, challenging employment. And hopefully they can find that in the manufacturing sector with some help in developing their skill sets.

Khaz Finley:

I think that supports a lot of the CTE programs in our region, a lot of the early programming that happens throughout, I mean, the 4th District that we serve, that I've observed that people have really dug in deep on to support the young students, the student exploration. And when it comes to manufacturing now, it's an increase in the program offerings to make it more attractive. We just got to wait for the outcomes, I think, to see if they really sustain and stay in that profession. I've noticed in my experience that the attention span is a little wavery. But hopefully they do stay so we can hold those individuals in those jobs and continue to grow.

Jacob, if many reshoring workers may come from outside the current manufacturing workforce or even out of the country, as you shared, where the companies are coming in, what is the most effective way to bridge the skill gap quickly and at scale?

Jacob Duritsky:

Yeah. So, I think the most effective set of tools we have are that ecosystem that President Ballinger talked about. And I think that that ecosystem can be responsive to people in a very

different way than it has historically. And that means programs as short as six months, which can set people up for opportunities to participate in meaningful ways, and two-year technician-related tracks, which, frankly, are some of the areas of the economy we project to have the highest demand going forward.

So, it's leveraging that ecosystem. But I would say, President Ballinger mentioned it, but one of the areas that we're starting to see an evolution of the conversation really take place is that K-12 and particularly that 6th through 12th grade space. Having conversations with people at a much younger point in time where they're making those decisions and starting to think about aptitude and interest. What do you like to do? How does it line up with what you're good at? And how does that lead you into the economy? Because when you think about manufacturing, for instance, I think a big thing we're still trying to do is change perceptions. Change perceptions about career paths. Change perceptions about wages. Change perceptions about even the environment and what it's like to work in that environment. The younger you can start changing those impressions and changing parents' minds, I think the better opportunity we have for the pipeline of folks coming into the workforce that Stephan discussed to really start to align people with manufacturing.

Khaz Finley:

Yeah, oftentimes we have those conversations of changing the perception of community colleges. And that comes up so often where we need to look at them as assets as opposed to the stigma of years ago where students didn't want to go there. But now I'm seeing the trend of students do want to go there, because it is an accessible point towards the goal they want to get to.

And with that, I want to open up the opportunity to hear from our audience. I'm going to pass it over to our roving reporter in audience, **Chuck**, for some questions.

Chuck:

All right, Khaz. Thanks for the introduction. Now, we're tight on time. So everyone try to answer things... Be brief in your answers. And I'm going to dive straight into some questions related... These are from the audience. ... questions related to strategies toward solving this problem.

And Khaz alluded to this a little bit, but it's great... Here's one question. It's great to bring jobs with a new manufacturing plant, but what else can be done to destigmatize what's seen by many younger Americans as work that's beneath them? Now, I think a few of you might be able to take this question, but I'm going to start with Annette on this one.

Annette Vickers:

Sure. And I think I've kind of alluded to this, that these aren't the dirty, dull, dangerous jobs of your grandfather. These are jobs that have clean rooms and are using advanced technologies. So, I think making sure that they understand what those skills are.

And just like we were just talking about, you don't want to start necessarily when they're out of high school and floundering at that point. You want to start when they're in middle school and getting into... and understanding what it means to go into manufacturing and what are the skills,

and getting them set up, getting certifications like what the Lorain County Community College is doing.

So, you want to make sure that you're educating them early and letting them know what are the skills that are going to be needed, and that it's not maybe your perception or your parents' perception of what manufacturing was, but how it's different today.

And also, the most important thing is that you can make a livable wage. That's the key. If it's between working in retail or food service or doing something in manufacturing, you have a much greater chance of having a livable wage in manufacturing than some of these other industries.

Khaz Finley:

I think one thing to emphasize, too, to younger people, it's the beginning and it's not the end. When you walk in that door, that's the beginning of the opportunity. So it's only up from there.

Annette Vickers:

Right.

Khaz Finley:

You want to provide the next question, **Chuck**?

Chuck:

Yes. So, maybe Jacob for this one. Are there ways that we could invest in childcare and transportation support to add as benefits to working in manufacturing? Now, this person did not define who we is, so I'm going to leave that up to you.

Jacob Duritsky:

Yeah. The we is the hard part of the question. The short answer is, I think we have to think about that as a part of the value proposition for work. If you look at the United Way of Cleveland did some work on the social determinants of work, and childcare and transportation are two of those that keep people out of the labor market most often. Childcare often related to cost, transportation related to ease and access. We have a good public transit system, but when you have jobs and infrastructure that has gone to the suburbs or even further and it takes a long time to get there, that's a real physical disconnect between where people are and how you get to work.

And so, I think one of the strategies, I started with talent and sites that are important. As we think about investment, particularly in some of our urban communities along transit routes, and being creative in the way we think about how and where we're sourcing workers from, workers become a much bigger part of that equation when you're thinking about where you want to make an investment so you have access to them.

So, there's not a simple answer, I think, for something like childcare. There are certain states taking on those policy issues. But they are real issues, and I think they are keeping folks out of the labor force. And in the long term, it's something we're going to have to deal with.

Khaz Finley:

Thanks, Jacob. **Chuck**?

Chuck:

Okay. We're going to go on this next question. We're going to go back to Annette, actually. You've got alternative places where you can find labor, the recently incarcerated individuals, recovering addicts, et cetera. How can we incorporate that population into this effort?

Annette Vickers:

Oh, absolutely. In the Future of Work report that I had referenced earlier, we did nine case studies of other areas where you can find workers outside of the traditional community college, universities, tech schools, because there's so much activity going on across the country. And some of our members, one in particular, AmSkills. AmSkills is down in Florida, and they've done an excellent job with doing these quick start-type programs that are two, three months of bootcamp that are bringing individuals, changing their lives. They might have been unemployed. They might have been formerly incarcerated. There's just a whole bunch of different reasons why they may not be in the workforce. And putting them through this bootcamp and having manufacturers ready to hire after those two to three months of a bootcamp. And it's just totally just transformed lives. And you see that happening. And that's definitely one of the best practices that you would like to see used across the country.

Also, you've got other segments, like autistic individuals. That's another area where Uniquely Abled is an organization that works with individuals that are on the spectrum and that teach them a skill. And they're very good at the skill. And again, it's another subset that you have individuals that can be... their skills can be used that maybe have been forgotten, that are forgotten outside of the workplace.

So, there are just a lot of different organizations that are trying to target these different populations, and they're starting to grow across the country. And I think that's great because it just gives us an opportunity to go beyond the traditional student coming out of a community college or a university.

Khaz Finley:

Marcia, you'd like to add?

Marcia Ballinger:

Yeah, I would because I think that is such a great question. So, the Aspire program is the GED program, for example, in Ohio. We deliver the Aspire program throughout our entire county. So, when you think of those individuals who hadn't graduated, this is a great way, again, to bring them back, and we provide the education for GED and connect them to careers as a part of it.

The other piece I would add with regard to those who are incarcerated, we firmly believe in second chances. And so we've got our PEP program, which is Prison Education Program. That includes a focus on advanced manufacturing. The Grafton Correctional prison is in Lorain County. And we take our Weld-Ed trailer. It's a National Science Foundation-funded trailer that provides hands-on training in welding so that we can take that out, especially for those individuals who are in that pre-release phase, and then train them and then work back with employers to ensure that they're able to have a meaningful career as well.

Khaz Finley:

Great information. And that's a great program, actually.

Marcia Ballinger:
Yeah.

Khaz Finley:
Thank you, guys. I wanted to wrap it up with one closing question. And we can just go down the line with everybody, giving a short synopsis. What is one piece of insight you can provide we haven't heard today that you feel can move our region forward? Start with you, Stephan.

Stephan Whitaker:
Yeah. I think the next step in this discussion, maybe I'll be able to address this in a different brief going forward, is, as we think about these policies, what can set up the manufacturers to be in a position to really expand these family-supporting jobs that we feel that we saw in the past in manufacturing, we want to see more of now? So, I think it's going to be a lot of conversations about domestic market share in particular product areas. Which areas do we think that our manufacturers can expand in if, because of some of those security concerns, we need to protect a certain portion of a domestic market to make that happen? So, that's going to be another phase of this discussion in addition to the question, are there people who could benefit from this? I think the answer is yes, and we have a lot of great programs trying to help people make that move from wherever they're at to a good-paying job in the manufacturing sector.

Marcia Ballinger:
I would just reinforce policy, policy both at a federal level as well as a state level. I think there are opportunities when we look at states that we compete with, when I think about where some of the other jobs go or companies locate to. North Carolina is one that comes to mind where they have different policies that fund the talent development that is needed for the state.

Jacob Duritsky:
Yeah. One we haven't necessarily touched on is the role of companies in helping drive their own future. And I think that we talk a lot about the infrastructure and the policy and the ecosystem of talent. All that's incredibly important, but companies can help their own cause, too. I'll give you one example. There was a question earlier about the role wages play. Some of our manufacturers, small and medium size, have started having conversations with applicants not just about your entry-level wage but where you can get to in 18 or 24 months, what that journey looks like, and how you go from $18 or $19 an hour to $29 or $30 an hour. To me, it's a built-in incentive for someone to see the progression, to understand what they need to do to get there. And companies, I think, increasingly are kind of taking that on. Because, look, the pandemic challenged manufacturers to compete with Taco Bell for $19 and $20 an hour wages. Now, the economy has changed a bit since then, I think. But changing some of those perceptions and showing people that career path is incredibly powerful.

Khaz Finley:
Annette?

Annette Vickers:

I think I would say not to be afraid of technology, not to be afraid of, "Oh, robotics are going to take my job. AI is going to take my job," but to see those as tools. And they're meant to be tools. They're meant to make your job easier. They're meant to take your job from being the dull, dirty, dangerous job to a job that you can probably enjoy even more by using some of these tools, and you're going to be doing a higher-level job at that point, and to embrace the technology changes.

Khaz Finley:

Thank you. And I'd like to thank all of our guests today for being panelists and sacrificing your time this afternoon. This is a great conversation and a vital conversation in our region. So, thank you very much, very much so. We'll follow up.

But before we wrap up, I want to share a few things, just so you are aware. First, we'd love to hear your thoughts. We'll be sharing a link to a survey in the chat. So please provide us your insights, if you want to... Hopefully you enjoyed the conversation. But provide your information so that you can give us more feedback on what we should talk about or how we should adjust the conversation, but also how you felt about the conversation today.

Also, we would like to send you information about upcoming events with *Fed Talk*, one in particular which will be happening on March... I'm looking for the date.

Chuck:

20th.

Khaz Finley:

20th. Sorry, guys. It wasn't in my notes. March 20th. Follow up with us for the next *Fed Talk* so that we can provide more insight on the discussion and engage with other speakers who will also provide information on the community and provide Fed insights as well.

Once again, I'd like to thank our guests, **Stephan Whitaker**, Dr. **Marcia Ballinger**, **Jacob Duritsky**, and **Annette Vickers**, for joining us. Name is **Khaz Finley**. Signing off. Please sign into a *Fed Talk* podcast nearest you. And have a good evening.