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The Future of Workforce Development:

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P R O C E E D I N G S

MR. WEST: Good morning, I'm Gerald West, Vice President of government studies at the Brookings Institution and I'd like to welcome you to the fourth annual John Hazen White Manufacturing Forum so we are webcasting this event live so we'd like to welcome our viewers from around the country as well as around the world. We will be archiving the video for this forum, so anybody who wishes to view this after today will have an opportunity to do so through our Brookings.edu website. We also have set up a Twitter feed at #USMFG, that's #USMFG so if you wish to post comments online you are welcome to do so, raise questions, sometimes going back and reading the virtual conversation is as interesting as listening to the conversation in the room. So, we have several distinguished guests with us today. Our benefactor John Hazen White is here along with his wife Liz and sons John and Ben their support in making this forum possible so please join me in expressing our appreciation to them for -- (Applause).

So for several years we have explored different aspects of manufacturing. We've looked at the benefactoring renaissance and what it is that helped bring the sector back. We've studied the obstacle facing the industry and ways to overcome them and then last year we examined the Obama Administration's focus on regional manufacturing hubs and what they are doing innovation and to create jobs. With the comeback of manufacturing and its move into Global Exporting and advanced manufacturing we want to focus today on workforce development and the role of community colleges in training the next generation of workers. Where are we going to find the productive workers that businesses need? There's an estimated 2 million manufacturing jobs that are going to be hard to fill over the next decade due to a skills gap. So we have to think about ways to train both the new as well as existing workers in

this sector. Today we have a program that will look at several aspects of manufacturing and workforce development. Our first panel would discuss the current and future situation and then we'll have panels that look at what people in the industry are doing to train workers and then our last panel will focus explicitly on the role of community colleges and technical schools in workforce development. To help us think about this topic on our first panel we have three distinguished experts, Dr. DeRionne Pollard is President of Montgomery College and in that position she is committed to empowering students to change their lives. Montgomery is one of the largest undergraduate institutions in Maryland, it has around 60,000 students from 160 different countries across its three campuses. She has a lot of expertise on community colleges both from her personal experience as well as serving on the future of community colleges commission. The Honorable David Cicilline is a member of Congress from Rhode Island. He was elected to Congress in 2010. There he works on issues related to manufacturing as well as other issues. He has introduced the Make it in America legislation in order to help retrain American workers and other bills to create a national manufacturing strategy. And prior to his legislative service he was the Mayor of Providence for eight years. Dr. Celeste Carter is the lead program director on the advanced technological education program at the National Science Foundation. And in that position she works to encourage a highly qualified entry level technical workforce. Her program has twenty-one years of experience in supporting community and technical colleges and other institutions that partner with industry to educate the workforce. I want to start with Dr. Pollard. You are on the front lines of educating the next generation and in a recent magazine article you said that "Community College is the place where the American dream becomes real". It's a very provocative statement. First of all what did you mean by that and then what is Montgomery College doing to train students for careers in manufacturing as well as other

areas?

DR. POLLARD: Thank you for the invitation, I'm delighted to be here and I trust my colleagues to the left and right of me to hit me if I get on my band wagon. I happen to think that community colleges are a potentially the most transformative institution in contemporary America. We do the work that America needs to have done and we do it with populations that often time underserved, underrecognized and undervalued. I say that very specifically because we service the working reservist and the returning veteran, the native son and the immigrant daughter, the person who is coming to us to retrain while at the same time the one who's looking to figure out how to make their lives and themselves better. The single dad and the working mother. All of them find themselves at institutions such as community colleges where we are in fact doing the heavy lifting of higher education. Almost half of undergraduates in this country attend a community college and the reality about that as our communities and as our country becomes browner, older and less wealthy in many areas, community colleges are the driving force as an anchor institution in connecting so many needs of the community with the resources that can help propel and drive not only workforce development but economic development in a community. Montgomery College as you describe is an extremely large community college. We serve 60,000 students, three campuses, two educational centers, and dozens of local area sites that we are working. I think our distinctive competency though in this space is that we have figured out how to reclaim this work that we are doing in terms of workforce development to drive economic development for our community. We were having a previous discussion before we walked in here and I said manufacturing in a lot of ways actually needs a branding campaign. We need to figure out how to look at the language and I'm an English teaching by training so part of me thinks about this idea of how we name things. How we look at

the vernacular, the Lexicon, how do we talk about manufacturing and look at this in a way that has relevancy to an 18 year old and a 48 year old who have very different constructs about what manufacturing is. Yet and still we have industries that are clamoring for folks to come in and do this type of work. So Montgomery College has done this I think in several different ways. One is that we've actually tried to develop several frameworks to help people understand the work that we do. We've defined our workforce development work into five specific areas but we've tightly coupled that with the emerging industries in our community. So for instance we have developed, we have over 130 programs to study from short term certificates to associates degrees, but we're also looking at Montgomery County itself. We have communities that are high wealth and we also have high poverty. All 26 Montgomery County High Schools have students at Montgomery College. Every zip code has a student at Montgomery College. That's not the narrative. So how do we bring the counter narrative to the forefront. Part of that is looking at how we partner with the emerging biotechnology community in Montgomery County to look at the entry pathways into technology positions. The reality is that the person is going to find the next cure for cancer and manufacture that particular type of work is going to have to do that with a very different skill set, but they also need a whole series of people who help them do that work.

Also there's a very thoughtful process about entryway pathways, helping to build capacity. We are also spending a lot of time with industries who come to us and say I have a very talented workforce at my place, but they are retiring, we need to upscale. Our industry is changing dramatically, how do you provide training and education for them in ways that can be very thoughtful and relevant. So we're doing that work and the thing that we are doing is actually inserting ourselves into county and state conversations about economic development and workforce development. It's very

comfortable for lots of folks to think about how can we do this work without changing anything? The reality about that, if we want to speak to this national conversation, this global dialogue a part of what we have to do as institutions is redesign ourselves. I give a plug to Tom's phenomenal book. I have a book club going on at the college right now about how we are doing this type of work at our institution. But challenging the narrative about how we do this work and the tightly a couple of business to say you have this need.

The last one I'll speak to and how we're doing very specifically is also looking at the pathway and this is something that troubles me a lot, when we have conversations about what's happening in our community, what's happening in our world, we are speaking a lot to the haves, we are not speaking to the have nots. We have to have very thoughtful conversations about who is not a part of the conversation, who is not exceling in the spaces we need them to excel at. We don't have the luxury right now of waiting for everybody to get to that point. We have to figure out how to recreate these pathways from the K-12 space into the college space. Those folks who are coming out of the prison system. How are we working with them because as our former Governor here in Maryland said, we need everybody to work. And we need everybody to come out and contribute to the bottom line. How do make sure that we are looking at the access points, the pathways into this work, but also as institutions how we redesign ourselves to do that work and then finally how we more tightly couple ourselves with industry to make sure we're meeting the goals that they need.

MR. WEST: This is a sector that is changing dramatically so it does create new challenges for a range of different institutions. Congressman Cicilline, you've spent a lot of time working on manufacturing and workforce development in Congress so what is the federal government doing to support the training of manufacturing workers and what should it be doing? Or the things that it's not doing that you would recommend

we do.

CONGRESSMAN CICILLINI: Absolutely, thank you again and thank you to the White family for their wonderful sponsorship of this event. I think first of all, most importantly continue the policies that are helping to create this manufacturing renaissance. That's a whole range of policies having to do with changes in our tax code, having to do with research and development tax credit and all the things ending -- the offshoring tax credits so that we're not incentivizing companies to move jobs overseas, so I think making sure we continue to maintain a strong demand for American made good, modernizing the buy America programs, a whole range of things that we'll continue to make sure that there's a great worldwide demand for American made good because otherwise you are training workers for jobs that don't exist. But, you are right that there is a huge need for trained workers, qualified workers for this new or more advanced manufacturing that is a real shift to more highly skilled manufacturing. It used to be if your mom or dad worked at a manufacturing facility you could graduate from high school and basically go back to the same big factory where they worked and get a job and make a good living and support your family well, that's not the case today in most places. The requirements are for greater skills, in part because of automation and those big factory, big assembly don't exist as much. And so one of the things that we've done -- there are a number of initiatives investing in the manufacturing community partnerships, the RAMI those things which Brookings really focused on last year are helping communities develop coordinated strategies around manufacturing to be sure that we can grow the manufacturing sectors in places all around this country.

I really want to just reaffirm that to continue that, but I think community colleges are really the answer for how do we train this next generation of young people and retrain existing manufacturing workers to meet the demands in the work force today.

I agree with the president, part of this is also changing the narrative about manufacturing. People used to think manufacturing is dirty, it's a dead end, factories are closing, it didn't seem like a bright future. There's been a real change in the attitude about making things in this country, particularly with the maker movement and young people thinking about what manufacturing means and so I really do think we've got - when some kid comes home and says I really want to go into manufacturing mom and dad most parents say, really? And I think we really need to change that both in high schools and technical academies having manufacturing tracts so that people are starting to develop the skills that they need and young people are exposed to that. We need to continue to fund in a very robust way programs like -- the Department of Labor and Training has a program in Rhode Island with the Community College of Rhode Island to -- the actual name of it is Accelerated Pathways in Advanced Manufacturing. It's using the community college to train young people for careers in advanced manufacturing. As two components -- one is a boot camp so that young people can really get exposed to a variety of different things and see what they are good at and what they like and it's this match of earn and learn model where they are actually earning money which is a reality for lots of young people at that stage of their lives, while they are learning and exploring a career path.

Investing in our community colleges and creating this pathway and being certain that in this development of the curriculum and the program that you are working closely with the workforce development boards, the governors workforce advisory groups, the institutions of higher education, we did pass last year a workforce reform bill, and I think making sure that we are also funding programs like Jobcorp and Youth Build and all those early programs that provide people with an early opportunity to try some of the skills that are available in manufacturing. The reason this is all really important is because every manufacturing facility I've ever visited says I have jobs available. I can't

find people to fill the position with the skills necessary and that's even in places like Rhode Island has a very high unemployment rate. So the jobs are out there. We've got to make sure that the workforce has the skills necessary and making sure we're listening to and carefully integrating the employers in all these conversations. Because I think for many years job training programs were created and produced people for what we imagined existed in terms of demand in the market place and it was sort of stunning to me the lack of conversation between the employers and the workforce development board saying what do you actually need. So I think our community colleges are absolutely in the place and the institution that can help transform not only our economy, not only for manufacturing but in a much larger way for our economy.

MR. WEST: I think that last point is really crucial. Even in 2009 when we had a 10 percent national unemployment rate there were certain sectors that could not fill available jobs. Certainly high tech sectors, advanced manufacturing and so on. Dr. Carter you work on the advanced technological program at the National Science Foundation. What is this program doing to contribute to manufacturing and technical education?

DR. CARTER: I'd like to start by saying thank you to Congress because the reason ATE exists at the National Science Foundation is because in 1992 the passage of the SADA Act mandated NSF to develop this program that puts community and technical colleges in leadership roles for educating highly qualified, entry level technical people for all of the advanced technology fields. The program has about 66 million dollars a year. We make anywhere from 50 to 75 awards a year. Going to not just community and technical colleges although they have leadership roles on all projects, also through grades seventh through twelfth. So the idea of pathways was very important and four year institutions. Every single award that's made has to have

significant industry collaborators or partners and an additional point is to work with your regional workforce investment board or WIB and your economic development agency. This is truly a program that's now been around for 21 years supporting a highly qualified tactical workforce and about I would say close to somewhere between 30 and 40 percent of the rewards we make each year are related to advanced manufacturing. If not very specifically we are developing at community college X a new mechatronics program in collaboration with our industry partner. There are a lot of the supporting roles that are played. Nanotechnology is one of the ones that are certainly active and participating in advanced manufacturing. We have bio-manufacturing, biotechnology, optics and photonics isn't maybe one you would naturally think of, but there is laser enabled manufacturing and we have centers and projects funded in that. Rapid prototyping or 3D printing. This is a program that really pushes the community to think about how to partner with your industry and the economic development people to build a program or it could be a certificate, it could be an associate's degree. Some sort of a pathway and then also provide faculty professional development and teacher development so the people who are in those classrooms actually understand what they are doing and why they are doing it.

How relevant it is to the jobs that are available to students that are going to be graduating from these programs. This is one of those programs that truly is responsive to the exact topic that we are talking about today and really we've covered every state in the United States -- the territories as well. Pretty much we're working on one new area. It's been around now since 2009, trying to bring more of the community and technical colleges into the program. There are approximately almost 1,200 community colleges and we've reached I would say a third, pushing towards a half. We have an area in this program called small grants for institutions new to the ATE program.

It has to be a community college that has either never come in to this program before or hasn't come in in 10 years and that group rose the diversity of the program greatly. I'd also like to mention that community colleges are the entryways for a huge number of students whoever walks through the door of your classroom is who you are going to serve and so you have a -- it's a tremendous opportunity to reach a lot of the underrepresented populations in the science and technology and engineering math occupations. Approximately I think more than 50 percent of the Latino or Hispanic students are at community colleges. It's very close to that for African Americans. It's a great way to broaden participation and to reach some of the populations that we need to reach. That's the ATE program and another program that I talk about a lot with community and technical colleges is another congressionally mandated program. It's called the S stem scholarship program and it's one that Congress looked at H1B visa money and said here's all these industries and corporations that say they can't find a qualified person in the United States, why don't we take some of those funds that they are paying for visa's and use it to develop a program to support growing the population of people in the United States who would be highly qualified. It's academically talented, financially needy students and when I talked to a large population of community college either faculty or presidents, I say how many of you have that type of student on your campus and every hand goes up in the room. Right? So that's another program that's really supporting this work. A lot of people that come into ETE will say how can I support some of these students. They will say leverage this, use what you are developing with the ATE money but go look for one of these scholarship awards as well that you can support these students and bring them in. I think that give you a basis of what ATE is about and some of the things that the National Science Foundation is doing.

MR. WEST: Sounds like you have lots of new initiatives going on. I'd

like to throw out a question to each of you on the panel and I know you are coming from different perspectives and then after this we'll open up the floor to any questions and comments from you. The question is what are the biggest barriers that you see in terms of workforce development and how can we overcome them. And this can be in terms of government policy, college curricula, how to deal with underserved populations, Congressman Cicillini you mentioned the maker movement are there specific organizations that should be new or different things? Dr. Pollard start with you. Barriers and ways to overcome them.

DR. POLLARD: I think there are probably in my mind three or four broad barriers and I won't speak to all of them because I think the other panelists are probably more qualified to speak particularly in terms of some of the policies issues and legislation that can help provide this. I think as I said earlier I'm an English teacher so I spend a lot of time thinking about words and one of the things that strikes me is that we have to have a substantive conversation about what it means to go to college, right? I am always struck -- I have an eight year old son and he knows -- he will no longer be -- he'll be second generation college student from my family and what I find very provocative about that is that he says to me, "Momma what is college?" So we have to talk about what college is and what that means, but this idea that you can go to college to earn and esoteric degree that has no relevancy or currency in the workforce I think is an old trope that we have to think about a different way of thinking about it.

The reality is that you come to college to learn a skill set that will help you get a job and often times you have to get a job to pay for the tufo. I had a friend that told me that not too long ago. The reality about it is is that you have to also have a job that is going to help you be sustainable and those jobs are going to require you to go to a place that has relevancy, that has currency and that has connections to the workforce in

the community that you live in. We have to really start talking about the fact that you don't have to go to college. What you have to do is go and get an education that will allow you to be successful and the way that you can do that is through college. That doesn't mean you have to go away to some of the best prestigious institutions in our country. You can do that. You can also come to your prestigious community college locally and get a curriculum that's going to allow you to get a job that will allow you to go debt free and allow you to be able to make a relevant change for you and your family.

I think we have to a substantive conversation about what education means, what going to college means, what workforce development means. It's quite *du jour* right now. It's in vogue to talk about workforce development and it's -- oh, wow, community college? We've been doing this for 100 years. It kind of baffles me that over 100 years community colleges have been doing workforce development. For over 100 years we've been helping drive economic development and all of a sudden somebody said, "Wow, community college." We've been doing apprenticeships. We've been doing this work and operating in this space, but the problem is that the cultural narrative, the cultural conversation hasn't kept in track with what we've been doing. I'll also say that community colleges have not done a very good job of talking about what we do. And we also have to bring more to the table in terms of describing the evidence to say that we're doing that particular type of work. That's one broad area. The other area is that we have to have a substantive conversation in this country about an equity that exists in terms of the socioeconomic gaps in our country and how do we begin to build pipelines to insure that every child, every adult has the understanding that there is a space and place, there is a need, I heard Secretary Perez say there are no surplus Americans. I would offer to you there should not be any surplus American who can't find work and a relevant way to support them and their family, but also there should not be surplus industries, right? So

we need to recognize that every industry if they are part of the economic driver of this country needs to have people that go onto there and be qualified and talented to help drive that work. I think there's a combination of issues there, but I think we have to have some authenticity in our conversation. I mentioned this earlier, I'm from the south side of Chicago. We believe in a couple of things. One is that you work hard but you've got to play hard. And part of that is speaking truth. And part of that is making people literally comfortable and part of that is also recognizing you've got to do some things a little bit differently if you want different results. You can't keep doing the same thing over and over again and expecting a different result. Those are just some of my thoughts.

MR. WEST: Great point. Congressman Cicillini what are the greatest barriers you see and how can we overcome it?

CONGRESSMAN CICILLINI: I think Dr. Pollard is absolutely right particularly about this idea of rethinking and reengaging in a conversation of what kind of college is. I think for a long time in this country -- I mean I remember when I was Mayor we'd go into the classrooms of second and third grade and the principal would say who's going to college, is everyone going to college, raise your hand and I'd say stop doing that. Everyone is not going to college and stop suggesting to these kids that if they don't go to college somehow they are not successful or they can't have a productive or meaningful life and I do think that we have got to begin to have a conversation in this country about what post-secondary education in this country is. For a long time you didn't even talk about a job. You went to be educated. And it's like -- no actually you want to be able to support and sustain yourself and eat and house yourself, so this idea of connecting it to some real world requirements and preparation for the work force we've got to really have that conversation.

And what I think as the biggest barrier, biggest obstacle is access to

education whether it's the community college, whether it's the workforce training program, whether it's a spot at the job corp. We just don't have enough access. Which is why I think the President's proposal for a free community college is so exciting. It will really change -- it will move what we now expect as K through 12 education as a public function that everyone has access to for free and make it K through 14 which I think is consistent with the demands of the world in which we live. And so insuring that everyone has the opportunity to access free community college who then can make decisions about whether it's manufacturing or another career path I think will do more than anything else we can do. I think it's access to the education and training that is necessary for the jobs that we are speaking about that is the single biggest obstacle.

MR. WEST: Dr. Carter your views on the barriers and the remedies and then we'll get questions from the audience.

DR. CARTER: All right, so I'd like to step back to the public perception because I think that is really a tremendous barrier still in a lot of these program. The ATE program has been supporting the development of these types of programs now for 21 years. They exist at multiple community colleges across the United States and I will say that one of the things that happens and this is typical of every community college, when there's an economic downturn the enrollment of the community college goes up. As the economy returns the enrollment starts going down. That's pretty typical.

You can see that cycling across the country, but one of the things that we've seen happen with a lot of these program is without an understanding of what the career pathway are about, the students even if they know about the program don't enroll. We have one center in Albuquerque that's called the MEMS Center. Microelectrical Mechanical Systems. So people say well what is that? What do they do? Well you could say things like putting DNA on a chip to understand and diagnose diseases.

There's a huge role for that. This program's been around for quite some time. For years they were lucky if they had six students enrolling in the program. They had industry waiting at the door to take the people and hire them and get them into these positions.

A lot of that is perception. I still think that idea that it would be great to have some big PR firm step up and say let's re-envision and let's make a change. I know the state of North Carolina did that with biotechnology. One of the community colleges - Alamance Community College had a program that had been limping along with not very many students every year. North Carolina started putting up billboards saying biotechnology is our next economic driver and since that time that program is overenrolled. People got the idea.

They started looking up and figuring out what does it mean to have a career in biotechnology. I think it's something we really need to think about broadly across all of these advanced technologies from manufacturing to high tech welding to all of these various things that are going on in the United States.

MR. WEST: Okay, so our panels have put in a number of ideas on the table. We'd like to open the floor to any questions and comments from here. Right here we have two questions. We'll take each of you. We'll have a microphone that's coming over to you. If you can give us your name and your organization.

MS. REISER: My name is Mindy Reiser, I'm a sociologist and I'm on the board of governors of an organization called LERA. The Labor and Employment Relations Association which has had many discussions on these topics. I'd like you to think about and address two points. One how the role of moocs is transforming what education means, where it's delivered and how industry itself can laise with community colleges in delivering that. And also senior citizens in this country who are often not in economically great shape and who need work and need new training. How are you

beginning to address that population? Often you are focusing on young people at the beginning of their work lives, but we need to think about the other end of the work trajectory and how to reach those people. So your thoughts would be welcome.

DR. POLLARD: If you don't mind I will start with the last question first because I think one of the things that's very distinctive about community colleges is that I'd like to think that we are engaged with a human's potential from cradle to grave. The reality is the average age of my student is 28 at Montgomery College. This year we had graduates who graduated that were 72 years old at Montgomery College and it was a beautiful thing to watch them walk across the stage but also see them pointing to their child who was also earning a degree and their grandchild who is also a student at Montgomery College as well and to talk about what that meant for their family. Changing the trajectory of a family at that particular point.

In fact, one of our speakers was a coal miner from West Virginia who heard about our HPAC program at Montgomery College, moved to Montgomery College, had an apprenticeship with one of our local companies, and is working through and he was one of our distinguished speakers at our commencement program. He had a lot of national press, because he talked about this idea that people thought that I was down and out and here I am doing something different and changing the narrative for his entire family. I think your comment is very powerful.

I'd like to think we already do that work in community colleges. In fact, the American Association of Community Colleges has a whole initiative on 50 plus. They have provided grants to a number of colleges across the country to help target very specifically this population of seniors who are transitioning out of formal work or those who are having to extend their work life because of the circumstances of their lives and other things. I think we do that very well, if that's a distinctive competency of community

colleges. I think that would be one that would be recognized. The other thing about moocs, I think it's an interesting conversation. I think that it certainly is providing this access question that we talked about. What I'm seeing though at our institution and we're actually seeing this at higher education.

There is a great piece in the chronicle a couple weeks ago that actually talked about this idea that how do -- moocs are a way of providing an entrée point for many people, but the reality about that is that for a lot of our students that come to our community colleges what they need is support services as well and how do we put that particular mooc and couple it with support services, but also other classroom experiences that helps a student really connect all of those things together and how do employers start to look at this type of work? This whole question of credentialing and more badges and other types of things. I think there is a broader conversation that's out there about that. I have not seen the moocs have that type of impact yet in the workforce. I haven't heard that from my local employers who I spend a lot of time with. I'll certainly pose that question to them.

MR. WEST: And the other thing on moocs is that they attract a lot of students but the completion rate is 5 to 10%.

DR. CARTER: Right. And I would say rather than looking at a mooc. One of the things that has come about in the ATE program is people developing hybrid courses.

DR. POLLARD: Yeah.

DR. CARTER: So for greater access for everyone whether you want to consider it a lecture part, whether you are doing a flip classroom, whatever your pedagogical strategy is you engage students broadly, but then there is some central sight where once or twice a month everyone shows up on a weekend and they actually get the

hands on skills and competencies. And part of that especially around advanced manufacturing, it's the skills and competencies that really make a difference between a person who's finished a four year degree where they have not had a lot of those experiences and a student whose had both the academic rigor of the course work along with gaining those skills and competencies that makes them a better candidate for the job.

DR. WEST: We have a gentleman right here who has a question.

MR. DOYLE: I'm Randall Doyle, Georgetown University. I taught at the university level for many years and then I taught at the community college level and I was stunned to find out that 80 - 90 percent of the faculty is adjunct, underpaid and I hear what you are saying and program sound great, okay, but what I discovered from working at a community college level was tremendous resentment that when 80 - 90 percent of the faculty are working for crappy wages, no healthcare and then they are expected to carry out these wonderful agendas and so forth. To me it doesn't make any sense. I think one of the weaknesses - I agree with President Obama's think free community college -- it's all great stuff but what about the other half of hiring faculty and paying them a living wage, giving them healthcare and so forth and making the place more professional for the faculty to be there? Because I can tell you having been there myself and everything that there is tremendous resentment and anger and so forth when basically a handful of people are making a living wage and everybody else is working for crap wages.

So, you know, I think to implement these program have a higher success rate of some of these program and so forth I think that if you flip that and had 80 to 90 percent of the faculty actually making a wage, showing up to work and so forth instead of looking over their shoulder figuring out how to pay their bills, I think you'd have a greater

commitment by these people toward these programs -- toward these schools. Now I don't know how the President is going to get around that so you can offer free education, but for God's sake, I mean if you want quality people to implement these programs you got to pay them. You got to pay them a living wage.

DR. CICILLINE: Remember the President's role is not that the students show up and it's free, it's that it's being paid for by the federal government and the state. Presumably we'll have no net effect on the cost to the community colleges because they will receive the same tuition and fees, it just won't come from the individual, it will come from the government. I think your point is a broader one that we have to put community college -- leadership and community college teaching in the same category that we do with four year colleges, universities and to the extent that we can insure people have good paid and permanent positions I think again that requires an additional investment in community colleges which I'm a strong supporter of and I think good community colleges do that already. Not every community college does it, but --

DR. POLLARD: And let's be real, we can't afford it and I'll put it out here, this is a very -- and I had this conversation. I'm the only community college in the state of Maryland where I have my adjunct faculty who bargain collectively and we sit across a table and have some real hard conversations and here's the real hard conversation about it. We're not funded to do that. And the design of how community colleges started hundreds of years ago and probably most recently 60's and 70's it was designed -- adjunct faculty had a very distinctive purpose. It was to provide flexibility to the schedule to allow us to make sure that we can offer courses throughout the door at times and places to meet the communities needs and secondly to provide relevancy for the curriculum. So, I'm now able to bring in a master HVAC person to come in and work who can work along side a full time faculty to provide a compilation of skills and experiences

for a student if that's what it was designed to do. But what happened -- now if you want to get real. I'm putting my pad down here.

MR. WEST: Now we're getting serious.

MS. POLLARD: Yeah. And the serious fact is that we have continued to see an underinvestment in some cases a disinvestment across the nation in higher education. As a result of that we had to do -- folks keep saying community college is open your doors, send me your tired, we are sending our tired, our folks who need more resources to you who demand and need more from you. We're going to send them to you, but guess what in the state of Maryland I'm going to give you for every dollar I give to you, I'm giving you 18 cents from the state of Maryland. Let's keep it real, right?

At the end of the day what you have created is in some cases a perceived cast system where you have full time faculty and part time faculty, but the design was never intended for that. So now as a result colleges say how do I get wise about this. I've got these thousands of students that are coming to us because the economy is getting bad, so I'm going to hire more adjunct faculty because it allows us to be flexible, allows us to do these types of things. The reality is we want to have a substantive conversation about labor policy and community colleges. It's a much bigger one for simply saying to us how do you begin to just put more. Because we don't have the money. We simply don't have the resources. Fundamental.

DR. WEST: Okay, there's a woman right here in the audience who has a question. Yes, and give us your name and organization.

MS. HURK: I'm Monica Hurk from the committee for economic development and my question doesn't quite reach the same level of passion, but --

MS. POLLARD: I'll take some more of that.

MR. WEST: But some of the answers may you never know.

MS. HURK: We'll see. So, Dr. Carter was talking about the MEM degree and how employers were lining up for it and putting up billboards about that. I'm wondering if there is a role for more counseling when students come in to community colleges, to say to them given your aptitudes and interests, there's employers in this community who are hiring for this job. You could finish this degree and this is what you are likely to make when you walk out the door.

MS. CARTER: I would love to see that happen and typically what happens -- I used to go down -- I had a biotechnology program in the San Francisco Bay Area. I was a faculty member at Foothill College. And I had the same problem. Getting students through the door each year. I would go into my Dean. Every spring we'd say well, you know, your program is redlined. You ought to have people coming out the door and there is over 1,200 biotech companies in the area why aren't you overenrolled? But there was no public relations or advertising about the program. Everything falls on the faculty member to do. And I would go to the counselors every year with a binder. I would say here's the companies that have hired, this is there entry level pay.

I would find out later that what they would tell students is this is science. It's really hard. You should go into the liberal arts. You don't really have the aptitude to do this. And that wasn't true at all. It really wasn't true. One of the things I finally wised up to, I had a student push me to do this. She said I'm taking a marketing and PR class here. Why don't you go talk to the faculty member who's teaching it. Every single student in the class has to develop a marketing/PR plan for some entity. I ended up with two students who got me free radio spots on the Stanford radio station. Free spots on the San Jose public television station.

Targeted mailings to high schools and other entities around the area and posters even for on the campus because students there didn't even know there was a

biotech program even though they'd been around for 13 years. And I tell that story on my cell phone. I say I was the one who didn't think of doing that. I was a student who pushed me to do that. Counselors are just one aspect of it. There's a whole realm of other things that need to happen to keep getting students aware of and coming into these programs.

DR. CICILLINE: Can I just add one thing? And that counseling, uh, demand actually, exists at the high school level too. I mean the conversation should actually be happening as people are concluding their high school educations so they can have conversations about community college or about career pathways. There has been obviously unfortunately a real reduction in the availability of counselors at the high school level too and I think that's exacerbating.

DR. WEST: There is a question on the aisle, right back there.

MS. HODEL: Hi, Hannah Hodel, U.S. Department of Education. Thank you for coming to speak here today. You talked about the importance of changing the narrative of manufacturing so that it's multigenerational and targeting underserved and undervalued populations. At present women make up less than a third of the manufacturing population. How do we get more women interested in staying in manufacturing jobs?

DR. CARTER: I can speak to that a little bit. We actually have a couple of very, very active projects that are deliberately going out and coming up with recruitment materials specifically to attract women into these jobs. One of them is based in California. The principle investigator is Donna Milgrem. And she literally works on bringing women into all of these career spaces, very, very, successfully. She's now partnering across the entire community college ATE community bringing in the techniques and the -- how do you model things appropriately? That's one thing that

happens. I do also remember talking to a dean in engineering and he said we did a summer boot camp for women. And man every single one who went through that boot camp showed up in the first semester class for engineering. And by the end of the first semester not a single one was left. He went into the classroom and watched them and he said look, you know, I'm from the military -- I've got a military background. He said one of the things we do in the military is we videotape people as they teach, so that we can go back and say now you may have not perceived that you were giving this message to some of the people in your audience, but you were. He said I'm going to try that. I'm going to see if that turns things around. Because it was the instructors that were providing the wrong message once the women got into the classroom. Unfortunately, he's never -- he hasn't come back. I don't know how successful it was. I'd love to know.

DR. POLLARD: I would offer a couple things to add to that. One is that we have to start earlier having these conversations. I love the conversations earlier that the representative talked about. Saying let's take this to the high school level. I last week was talking to a group of fifth graders and the reality is we have to start talking earlier and earlier about what it means to be educated. What's the public good versus the private good, but also to talk about this idea that everyone needs to see themselves represented in the workforce in that way. And I think for us who do the hiring within our institutions we have a strong commitment and I look at our engineering program, we have the largest community college transfer engineering program in the country.

We send students from -- directly into industry but also we have students graduating go from Montgomery College to MIT last year. The reality about that is we have higher faculty who look like the students that we serve and who are able to talk about how you navigate and experience that may not be something where people are giving you the messages that you can be successful. I think the other thing that we are

doing is how do we also then with our students create support services, learning communities, other things to help them be able to say let's be very thoughtful and intentional about your experience. You are going to have a panel later that's probably going to talk about this. These pathways and intentionality and how we systematically redesign our organizations to get these outputs. We don't have the opportunity just to wait for it to happen. I call it intrusive, deliberate, and making sure that we systematically look at all of the inputs to get the outputs that we need to have.

MR. WEST: There is a question over here. Did you have a question? Yeah, over here on the aisle.

MS. HINKOVICH: Thank you, Ariana Hinkovich. I also had the women's question and you kind of answered. My other question is manufacturing and our space -- it's very much targeted as good middle skill jobs where you do not need a full degree. But then from your discussion a lot of the emphasis is on advanced manufacturing, it's not your father's manufacturing job, you can't just walk in with a high school degree. How much is it still an occupation which allows people who do not get a four year college. Maybe don't even get a two year college to get in and get a decent job. And how does that -- also this overall emphasis on getting more scheduled. How does it align with the workforce innovation opportunities and the emphasis on really low skilled disadvantaged workers?

MS. POLLARD: If you don't mind and then I'd be happy to be quiet on this issue. I give you an example of what we've done with this right now - cyber security. We were very lucky to receive from the state of Maryland -- we're hosting a grant. One of the tech grants and we were looking at this whole issue of cybersecurity. And what I think is very interesting about this is that for a lot of folks when we talk about this. Your question struck me.

You need college. I think we have to get out of our head this idea that college is a four year baccalaureate degree. That is no longer a definition that's viable. College - post-secondary higher education has many outlets. You can get short term certificates, long term certificates, associate degrees, baccalaureate degrees and to be quite frank in our biotechnology program 60 percent of the students that are coming to get a certificate in biotechnology from Montgomery College already have a baccalaureate degree. Forty percent of them already have a master's degree with unqualified skills to allow them to step into a workforce. I think we have to again -- it's not only the narrative, it's the Lexicon. It's the vernacular that we use around what it means to go to college. What we've done with this TAC grant in cybersecurity is to create on ramps so that people can come in, get short term certificates and degrees, short term certificates, go into the work come out, come back in and then begin to create stackable credentials to allow them to move into the workforce. That to me has to be the way we think about this.

A high school diploma is very powerful, that should be the minimal expectation that we have for education. The reality is that anyone who is going to be able to have a sustainable living wage, Montgomery County, for a family of four to live without any financial support, is \$80,000 a year. You will not find a job with a high school diploma doing that in Montgomery County. So we have to have a substantive conversation about how we create credential to get you to that level.

MR. WEST: I like that concept of stackable credentials.

MS. POLLARD: And it's not new.

MR. WEST: In the very back there's a woman with her hand up. There's a microphone coming over to you.

MS. ROBBINS: Good morning, my name is Cynthia Robbins and I'm an independent consultant working on various issues of access to justice and opportunity.

Two questions that I had and they've been somewhat addressed. One is the issue of online universities and education and how you blend that in to what you are doing. I want to back up. I used to run a program here in D.C. called Maya Angelou Public Charter School and See Forever. And one of the things -- it was an alternative school and we sent our young people off to college many years at a rate exceeding 80 or 90 percent. These were children who had been pushed out of public schools. It's clear that when you set high expectations you can have extraordinary outcomes.

The question I have is around stigma. I think that a lot of people think of community college and they think you didn't really do it. You didn't get where you needed to be and there is all this focus on trying to get into four year colleges. I just ask something about -- and I love the stories that you shared about your public relations efforts and I think that on the issue of stigma that would be a real place that across the nation there could be some real new thinking about community colleges. I love the name of them right, so there should be an appeal. But right now I think for too many it's seen as the fall back failure spot and not the catapulting, catalyst for you going on to broad extraordinary educational experiences. A little bit about how you might change stigma into stepping stone and wonderful staircase to glory kind of thing.

MS. CARTER: I could start on that because that is something that comes up a lot. But to go back to it's Collins who has the biotech program. And I had a biotech program and I would say over 15 years I probably had less than students that were entering with a high school degree only. I had people with PhDs, with masters, with bachelor's degrees. Another biomanufacturing program at Solano Community College in California. Eighty to 90 percent of their entering class each year has a recent degree from the University of California baccalaureate degree. They can't get a job. Industry tells them you don't have the competencies and skills that you need.

One of the things we started doing was referring to ourselves as the reverse articulation pathway. So, and I'd have students come in and they'd say every single thing in your program doesn't transfer for credit. I'm not going to take everything in your biotech program. I'm not gonna finish your certificate. I'd say that's fine, you transfer, I'll see you when you finish your four year degree because you'll be back. And one of the things that people have been doing is building these -- truly a pathway with multiple on ramps and off ramps. And that's one of the things that's truly being successful. And I think that as far as the high school piece of it, it's looking at dual credit. There's more and more people thinking about how to be creative about that.

How do you actually get a pathway -- one of the things that happens in a lot of these disciplines is well the students are bored with a lot of the entry classes. In biology it's like come on you expect me to memorize all 1,200 pages of Campbell's textbook? How boring can that be? One of the things that people are doing is sort of shaking up the system thinking about how to create pathways that allow students to see you can do a certificate. A matter of fact I used to get people hired out of my program which my administrators didn't like very much because they said we can't get that completion number. But industry would say as soon as you get this base level of competencies I'm taking you. And I hired as adjuncts a lot of people from industry to come and teach technical courses at night.

And they would literally cherry pick out of my program. And I always figured that since the students came to get a job that was a good thing to do. It's letting students know all of those options and building those options into it. One very successful program is a learning community that was initially developed at the City College of San Francisco and is now been adapted and adopted in a lot of other communities -- community colleges across the United States that partners three courses. It just links

three courses up in one semester of understanding and biotechnology, the math you need to be successful and the writing and English skills you need to be successful. And that learning community alone has transformed entry into a lot of these programs. Other people are adapting and adopting that model as well. And so I think that whether you -- however you refer to it I visited Australia and looked at their technical institutes. They have a one page flyer that says in every single occupation if you finish this certificate this is the jobs you can look for and here is your salary.

If you later come back and you get the next certificate or certification these are the jobs you can apply for and this is your salary. And it builds all the way up into mid-level administration in a lot of the industries. I think that would be a great thing to develop here.

MR. WEST: Okay, I think we have time for just one more question and then we are going to move to our next panel and right here on the aisle. There's a microphone coming over to you. Last question, so it has to be a really good question.

MS. SPRINGER: Hello, I'm Hayden Springer. I'm with the Center for Regional Economic Competitiveness and this is a bit of a different question. You mentioned a number of important things to you -- delivering programs that give people the skills that are in demand, identifying career pathways, helping teachers understand why what they are doing is important and giving schools the funding that they need. We work a lot with workforce and economic development professionals as well as TAC grant folks to know how to access and interpret data. And we find that skills data is majorly lacking, that it's very difficult to identify career pathways without that data and that BLS funding is declining and it's trickling down to the states as well as the community colleges. What I'd like you to address is how are you dealing with these issues of lack of data in developing your programs.

MR. WEST: That's a great closing question. Panelist?

DR. CARTER: I would say -- well you worked with the TAC grantees so one of the things that every single awardee under that program from the department had to do was figure out a way to try and get those metrics. And sometimes you can look at unemployment data, sometimes as you said BLS data helps. One of the things that the ATE program is helping to support is the study at the National Academies that's ongoing right now on middle skills jobs. We just had convocation on that a week so ago and there was a lot of discussion about what data sets can be accessed and what they show. It's a tough problem. It is a tough problem.

I think the ATE program in a way gets around that problem by developing those really close ties with industry, so that the community and technical college working in partnership with industry be it one company or multiple countries in a region really understands what's going on there and can build the kind of program that provides the needed skills and education background that people need. Is that an answer nationally? I don't know. One of the things that I'm trying to do is get regional centers to work together on a national level by developing -- called coordination networks within this program and we'll see if maybe that helps the issue. Another one is to look at things like what the manufacturing institute is doing in pulling together all of the industry validated certifications and I'm looking at how they can be interwoven into academic programs. This is one thing that Jennifer McNelly the president of the manufacturing institute has worked with the Florida Manufacturing Center that is supported by ATE and every manufacturing, engineering and technology program in the state of Florida has interwoven into every program industry validated certifications. This student knows when they come in they will be prepared to take an exam. If they have that certification they know the jobs that are available. Things like that I think help but it doesn't necessarily

give you the kinds of database statistics and metrics that you asked about. I think that's the best I can do.

MS. POLLARD: Pragmatically I think related to that one is that we're trying to build our own capacity in this space, so that means community colleges, we're having to redirect our own internal resources so instead of hiring exposition I need to build research capacity. I'm going to redirect the positions in that area. Secondly we're outsourcing it. Plain and simple we are going to find people who can collaborate with us who have competency outcomes they can demonstrate and say we can bring the skill set to you and allow you to be able to help purchase that from you and contract as a service. We are doing that.

A third, we are trying to figure out how we can get regional partners who can come together and help us say here's where this space is. Fourth -- we're pushing the government. You are asking us to say you want this type of data from us, the reality is that I don't -- there was a great piece today about the facts. There are certain parts of the fact that we just shouldn't have to fill out because the IRS already has his data. It's kind of the same thing. You are asking us to present this type of data. The reality is at the end of the day you should be able to provide it to us and help us do the analysis around it.

I think those are some of the spaces we are doing the networking in and the last one is that I have a business roundtable where I bring business leaders together and one of them actually said DeRionne I'll do that for you. And that to me was a very powerful conversation to build that capacity that there is a deep investment in our success because they already have the business metrics and know how to do that work, to be able to help us bring that model into what we do.

MR. WEST: Okay, we are out of time on this panel, we are going to

move right into our next panel, but great job. I'm going to thank Dr. Carter, Dr. Pollard and Congressman Cicilline. (Applause)

MS. COHEN: Okay, let's get started I'm Patricia Cohen and I'm a reporter with the New York Times. I cover the national economy. I am very pleased to be here with this panel. Um, I won't go into the introductions because you too long because you have them all here, but let me start with both our host and sponsor, John White who is the President of Taco. Taco, okay

MR. WHITE: If you buy it you can call it anything you want.

MS. COHEN: Okay, great. It's a 200 million dollar manufacturing company. Then we have Amy Cell over there who is running Community Ventures in Michigan which is focused on getting some of the most disenfranchised into jobs. And then at the end Walter Siegenthaler, Daetwyler, right, Executive Vice President. Did I pronounce that correctly? Of the Max Daetwyler Corporation and I'm very interested to see that you actually worked as an apprentice in Switzerland and that's one of the topics that I hope we can cover today about apprenticeship.

But let me start and I'm going to start with you, John, because we were talking about some of the skills gap before it's an issue we hear about, we certainly write about it a lot in the media but let me ask you first is part of the problem a skills gap or are what we really talking about is a pay gap. Is one point of view -- is that employers really - - part of the problem is just not offering high enough wages and so that a lot of the talk about a skills gap and increasing the labor force is perhaps tactical in a way of keeping wages down. Is that fair?

MR. WHITE: I think it's a combination of both. I think there's a problem in both areas. First of all on the wage issue it's disappointing to me to see how companies manage their wage structures because on the public side we're looking for

the lowest possible wages, right? On the private side we invest in the people. I think there is a significant difference. I've always believed and take the approach that the last thing that I want to talk about is wages. So, our wage structure is pretty good.

On the skills gap -- and I don't think everybody shares my attitude on that -- on the skills side this has been an ongoing debate and I think it's become much more of an awareness point recently, look -- of course there is a skills gap when companies like mine invest in the process, productivity, technology, robotics, automation for growth and stability. So the choice then is to place people or train them and perhaps in my opinion the most underappreciated fact is that our greatest changeable and improvable asset are our people. I've always had the opinion that we just need to train them. And forget all about it. There is a skills gap, we need to close it and the way to do that is through workplace education and training.

MS. COHEN: I want to get back to you in terms of some of the best ways you think of doing that, but first Amy let me ask you because you are actually running one of these programs now in Michigan and in the last panel it was interesting to me because two of the issues that came up were about flexibility and about PR in a way - - publicity -- and it's interesting to me, I've written about the for profit industry, college industry and we're all aware of some of the really terrible predatory practices that it's engaged in. But one of the things it's done quite well. One is marketing and also -- one of the raps is that they have at least positioned themselves to be more flexible perhaps than community colleges and I'm wondering if in your experience in dealing with community colleges in Michigan that those two things have been a problem.

MS CELL: Great question there. I mean the community colleges are a great system for access points. The credentialing is key. The access points are great. But one of the biggest issues that we've had in Michigan too is just getting people that

are prepared enough to go into community colleges that don't need remediation which kind of bums a lot of people out. Some of the challenges that we've had on the marketing side has been key. Trying to drive people into the right occupations that will provide that return on investment that will get them the right kind of skills that they need and to deal with all the other issues around getting the right kind of training and matching. And it is a marketing issue, those are huge. I think anything we can do to get people in the door is important, but also making sure that it's aligned and it meets the employer's needs.

MS. COHEN: Just to follow up on that. So is one of the issues you are saying is remediation? That really it's so many failures in the public school system previous to community college that these people by the time they get there aren't even prepared for that level.

MS CELL: Yeah, in my experiences too running program for Michigan ad being part of our course in economic development for 10 years in Michigan -- 10 years ago we had so many issues on the recession, we had huge population declines, but then our manufacturing industry came back so quickly that we truly did have a skills gap in addition to the wage gap and we were looking at 100 different specific talent problems and how to address them. I'm on a committee now looking at how we increase credentialing for adults to get it to around 60 percent. There's a lot of initiatives going around in states in Tennessee with a free college, how do you really get everyone up to a credential point? The view is that to have a middle class lifestyle you have to not only have a high school degree but something afterwards whether a PhD, masters, two year degree, apprentice, some type of industry recognized credentials is really viewed as the way to a middle class lifestyle.

To get there there are so many different issues. The marketing issues,

we don't have enough counselors in high school directing them so we came up with a career jump start program to provide better information about high demand jobs that don't require a four year degree to get into high schools, to drive them to go into the programs. We addressed the equipment issues by doing a 50 million dollar bond to get more equipment in to the colleges to address some of the issues that were brought around funding for colleges. A lot of it too is investment by the employers, how do we get the employers at the tables. We did a German model apprenticeship program to try to address that issue, but then also the program with Community Ventures is finding people that have so many barriers around education or employment, or a felony record, or a disability. How do you even get them into the career pathway. For them it's basically a job first addressing their barriers. Then to really move up from taking somebody who is in an area of economic despair and how do you get them to stability? By that \$11 an hour, \$12 an hour job? But again to get to the point of middle class lifestyle a living wage which we learned in Montgomery County is \$80,000 -- to get to those living wage jobs you have to have some additional training is my belief. Sometimes it needs to come after that person has already found an employer, like a wonderful employer like John where they are going to take that initial step and get them the work experience, change their trajectory, surround them by people that can give them hope and potential and a pathway and then you address the additional literacy or GED or high school in that industry to recognize programs that really --

MS. COHEN: Let me just stop you there to go to Walter to pick up on one of the points you made about apprenticeship which is something the President has talked about. I think even as we're here there is a Press Conference going on over at the commerce department announcing an apprenticeship agreement with Switzerland. There was one signed last month in Germany. You've actually been through one, so

what -- when there has been this apprenticeship initiative that has been going on for years and yet it doesn't really seem to have caught on here and what is that? What are some of the cultural barriers if that what it is or is it other economic barriers that seem to be standing in the way of that?

MR. SIEGENTHALER: Honestly, there are a number of barriers there and we heard some in the first panel already that there are barriers out there and it starts out yes in school counselors. There are still counselors around that say everybody has to go to a four year college so that is definitely one thing. Parents and we are located in North Carolina. In the past was a lot of textile and also textile is gone. A lot of the parents lost their jobs because manufacturing disappeared so that they don't believe in manufacturing. It's a whole gamut which really we have to keep working on it and we have an apprenticeship program called apprenticeship 2000.

We started that 20 years ago and we are still putting in a lot of effort and really promoting it, marketing it, we are working very, very close with the schools, high schools to find apprentices. And it took me quite some time. Of course, we were in it already but then I went to a presentation at this session in Charlotte and somebody presented the German model and I said well if students finish school they look for a company to make an apprenticeship. I said wow that's where the difference is. Here we as a company have to go and look for apprentices and we put a lot of effort into that just to overcome all those barriers about the 3D's of manufacturing being dirty, dark and dead. We do a lot of effort -- put a lot of effort into that and bringing it out to the people. Yes, I have to say over the last few years we get a lot more support, there's a lot more being talked about and obviously also through the administration really pushing apprenticeships. I hope it's going to make it easier. We have been able to actually create two other programs in North Carolina model according to apprenticeship 2000.

And there is another one starting this fall so yes there is something happening, but apprenticeships is not a household word yet.

MS. COHEN: John let me go back to you when you were talking about training, from your point of view as an employer is the best training coming in terms of a partnership let's say with a community college or is it running your own kind of program on site where you are actually training the people yourselves which is how many apprenticeships do work in Europe where it's actually the employers who are the one kind of running the program:

MR. WHITE: Yeah, from my perspective and again it's my perspective not necessarily agreed with by everybody, but I view a company such as mine as having significant social responsibility to the livelihoods of the individuals who are either working with us or around us -- suppliers and customers, so we've chosen to take our workforce over the last 20 years and as opposed to replacing them to train them. And we do it in house on site. By the way what started out as simply a work/job skill related program -- blueprint reading, gauge reading, basic manufacturing things -- has become a program that now extends itself up through an MBA program in house for our employees.

And summer camps for the children and et cetera, et cetera but the point is to make this a real community in which people can take part. Now do we do it ourselves? No. All of our education is provided by either high school, community college or college, so we are not distracting ourselves with trying to teach people what professionally we are trained to do. But we do it -- we have chosen to do it in house, although I see and have seen and I have -- I was very interested in that first panel discussion. I have been really interested in watching the sort of redefinition of the community college system and the tech school system. Because these institutions have really found and I think your point was probably underappreciated because you've always

been doing this.

But it's become so apparent that the redefinition of community colleges and tech schools had been to provide an opportunity for these transitional people as well as people who don't know what they are doing when they come out of high school. But to be able to retrain themselves or reacquaint themselves with what they don't know or want to reknow I guess, you know, so that they can be gainfully employed.

MS. COHEN: How responsive did you find at least when you first started the community colleges where I did a story a few months ago about welding programs in Texas and the community colleges. And it took a few years for the employers who talked about getting the community colleges to actually change their training and offer the skills that they needed and the kind of training that they needed. Did you have that issue? Was there this kind of lag between what was being taught or making the program respond to exactly the kind of training that you needed for your company.

MR. WHITE: I'm going to take that over to the textbook side for a second. Look, again this is a little bit odd. It's a strange little place and it is little. But one thing we do have is an outstanding -- probably as good as any state in the country an education system in terms of community college network. They tend to like to grab onto things quickly. If there is a way for them to contribute to conserving jobs in the state of Rhode Island within the manufacturing area I think, I have found them to be very well into and to quickly take part.

MS. COHEN: Amy, some of the population that you are dealing with in your program is much more difficult and there is a lot of other issues that -- a lot of support services that they need. Should community colleges -- they are serving so many different populations, are we essentially asking too much of them to serve as this kind of bridge perhaps to four year colleges, to do vocational training, to do remediation of 12

years of public school that are bringing them up to do all these certificates and some of the things that we heard on the first panel? We also know the completion rates of community colleges are quite low.

MS CELL: Yes. I do think we are asking too much of them. And a lot of the points that have been made are coming up in these conversations especially about the adjunct faculty. We have this committee that I discussed. We have a representative from the union and that is definitely the issue that they are focusing on is the cost structure. But there is the funding issues and that's a whole another ball of wax about how do you fund programs? There is what they get from the K through 12 system.

Leading the population that I'm working with in Community Ventures outside of this piece we are just asking too much of them and there is especially in Michigan there is funding issues of do we put the money through the K through 12 and really enforce rigorous graduation standards so people come in and how do you address that or do you provide more remediation services. There is how the funding flows that's a mess. I love the model where in Michigan we've done a lot with middle colleges and early colleges where it's basically you graduate after 13th grade with an associate's degree and from 9th or 10th grade you are dual enrolled between community college and your high school and these really are taking off and there are some where industry is very much involved, there is apprenticeship pieces rolled into it and for I don't know exactly how to make it work but it's free for those students. And so -- they make it work with some incentives and policy changes between the community college system and the K through 12. I think those are beautiful because they address accessibility, they are industry recognized, usually like graduate with that credential and the associate's degree. I think those programs where you can really make sure that the incentives are lined up between K through 12 and community colleges offer a great opportunity for success.

MS. COHEN: Mm-hm, Walter let me go back to you in terms of asking you about what are let's say the two or three main or primary improvements or things that we need to do to really widen acceptability of apprenticeship programs?

MR. SIEGENTHALER: I think we go back to what was discussed in the first panel already -- marketing. It's bringing the word out and it's not just about apprenticeship programs but we as a manufacturer -- advanced manufacturing what is it? It's exciting. It's a lot more and a lot of people just have no idea. I have discussions with the department of labor and all the way to the top -- the Secretary of Labor and unfortunately there is no real plan and I think there is no funding available. I think that is one of the problems and we are the small manufacturer company with 100 people here in the U.S. We can't do that. We can only do it very local and we do as much as is possible to do -- to plan, to show people that an apprenticeship is not a second grade education. I think that's -- a lot of people still look at it -- whether it's apprenticeship -- that's for the ones who don't make it. As we discussed before. But we feel or we see that once we get the parents involved and show them what our program is, because we pay for the tuition of the community college.

Of course, they are paid while they are working and we got indeed a job at the end. They graduate with an associate's degree in mechatronics what else do you want? I mean it can't get much better than this. And it just takes a lot of time to get the point across and I said it's very difficult to find the students who really want to do that. They are out there. There is no doubt about it and I always say every one of our apprentices could go through four year college, no question in my mind. They are smart enough. That's the people we are looking for, but we are looking for the ones who like to work with their hands and most of what we pick, they say well I didn't really want to do go to four year college. I am so glad I found this, because -- but I

wasn't aware. I think that awareness is the biggest problem we have.

MS. COHEN: We've been talking a lot about young people and obviously the millennials right. It's a generation finally that's actually exceeded the boomers in terms of size, but one of the mysteries that has been going on in the declining labor force participation particularly among men of prime age working years 25 to 54 so one of my questions to you is are you only looking for young people? Would your apprenticeship program or ones that you are familiar with be willing to try to draw back perhaps older workers who were in the workforce perhaps in a different kind of manufacturing job. Or is that -- really at that point is retraining become very difficult?

MR. SIEGENTHALER: It's a little bit difficult because the way we -- 20 years ago we decided to structure our apprenticeship program basically according to the European model and I want the same German with German/Swiss/Austrian because we are a group of companies working together and so that's why we decided it's a youth program. That's the whole system over in Europe for hundreds of years or whatever. Let's do it the same way. There is nothing wrong with retraining older employees. There's no question about.

The problem is if you take an older employee and put him into an apprenticeship program the salary structure doesn't really fit very well. But that doesn't mean we can't train. And we had -- a typical case, we hired last year I think 10 machinists. We needed to have a second shift and we had to hire people. We could not find the people with the right skill. We hire them and they turned out -- it was resume, interview and everything went well, but then once you put them on a machine, they were not performing. And our manufacturing manager said well I can't use them. I said hold on. Pick at least the ones you think have the potential. And we have to train them because if you sent them again we are not going to find anybody else. There is nobody

else out there, I'm sorry. We have to do the training. So it's less formal, but we still have to bring them up to the standard to our expectation.

MS. COHEN: And how did that work.

MR. SIEGENTHALER: It works because he was ready to quit second shift because he didn't have some people and now certainly it all works. But we have to push there because it's -- and that's a tendency here in the U.S. compared to Europe. It's a lot of short term thinking. They are just okay now I need it. You have to do something and the apprenticeship program -- our program is a four year program. Well do I know what requirements we have in four years? Not exactly, but I plan on growing and I know we have a whole bunch of people that are going to retire so I have to bring new people in. There is no other way. Otherwise I have nothing and there is quite often the question about apprenticeship program. People ask me what's the RY. Half the time I said I don't know. I don't care. Because if I don't do this I may not be in business in 10 years from now.

MS. COHEN: John, you are shaking your head.

MR. WHITE: No, this is really -- it's music to my ears because I think one thing you are saying Walter without saying it is kind of what I said earlier. Our people are our greatest asset. And they are the one thing that we can look -- the computer is obsolete the minute it goes off the shelf, the car is obsolete when it goes off the lot, but people are never obsolete. I'm going to tell you people want to do good. They need the opportunity. And that's why I talk about a community. And that's what my company is all about. Everybody is different, I've just taken that road and I want to tell a story just quickly about what this is the subject for today.

About six or eight months ago I don't know if anybody else in this room saw this but there was a headline front page article in USA Today about -- there is a

company in Wisconsin, employed 1,000 or 2,000 people and they supplied the auto industry with something. And it was not a huge town, and so the retirement rate from this company was greater than the -- what do you want to say -- the placement, right? They were actually thinking of closing this place which would have devastated the town, so the company got together with the town and went to the high school. My parents' generation, we are pretty emphatic that we should not go into manufacturing because it was dark, dirty and dead, right? Or whatever you said. We all went to college. We incurred student loans and we all know the whole story. But this company went to the town and got together with the high school and began bringing in junior and seniors and their parents to the company.

And here's what happened. The parents said, wow that's not what we remember manufacturing as looking like and the kid's said holy mackerel this is like a video game. And I want to do this instead of going to college. The company convinced them that they could come to work there, make \$80 or \$100,000 dollars a year, whatever it was. And still they would educate them. What a great move. That's a community.

MS. COHEN: Amy I'm assuming that you work with various employers in Michigan -- John here is sponsoring this panel. We know you have a social conscious and you talk a lot about community. Is that your experience with the employers that we seem to have two visionary business leaders here. Is that what you are hearing from all the employers?

MS CELL: It's definitely a mix and it's great when we have visionary employers and there are a number of them in Michigan. Fred Keller with Cascade Engineering brought together a group of employers to help train the population that's what we call structurally unemployed. People that have education and workforce barrier and created a consortium of employers where they would enter in one employer and

maybe work at \$8 an hour making Butterballs. And then they might work up into his company where there were more machinist jobs and then eventually engineering jobs. It was a nice kind of group approach that does provide that return in investment. You do it by investing in people I'm either going to retain them all or they are going to have skills and grow. But also in Michigan there has been a dynamic over the years of during the recession you could get highly trained, amazing people for free. And then when the manufacturing swung over everyone that was still in Michigan was very gainfully employed. They had the skills.

And so then the bright employers, we had a number of companies that came together and formed a consortium to train and invest like this. And so we had a small group of employers that were really willing to do the investment but a lot of them were so used to either government providing the training or not needing to do anything to get good people. And when the transition switched we would hear a lot of whining government should solve this problem for us. The smart employers were the ones that could really see the return and would invest. And the line would be like well what if I invest in all my people and then they leave. And then the other conversation what if you don't invest and they stay? When the pain for businesses gets great enough even if they don't have a social conscious, they will usually make some changes to stay in business. But there is a huge gamut that we've seen in Michigan.

MS. COHEN: I'm wondering now to return to this issue of wages which is something that you brought up is that did we get into a situation -- we've seen wages stagnate now over more than a couple of decades. Certainly coming out of the recession where wages have been pretty depressed, you said you could kind of practically get any talent -- and is there just this -- are we seeing this reluctance of employers to offer higher wages after a period when they didn't have to?

MS CELL: It's been changing again because of the pain points and we are starting to see increase in wages. It is really a supply and demand issue. Although in some industries for instance truck driving which gets a lot of press and I've had a group discussion with about 30 truck driving employers at the state there is still so many systemic issues in that industry that really raising the issue -- raising the wages is just one component. But in general I think we are starting to see that because of supply and demand.

MR. WHITE: One thing that also happened after the recession in 2008 was people realized with the downsizing that -- particularly the financial institutions and the insurance companies and like that -- I sat in this room one time and made this comment that in 2009 that we were going to see a jobless recovery. And in fact we were there before that because as we invested in productivity we didn't need to hire more people. We've grown the business from \$30 million dollars with 500 people to \$250 million with 500 people. The important thing is that they are the same 500 people.

And so I think investing in them as you go, the pay back -- you want to talk about ROI -- I don't allow that to be talked about in terms of our education program because I think it would cheapen it, but I'll give you the statistic. Our turnover rate at Taco on five or 600 people is less than half a percent. In an industry with an average of 30 percent. That's the ROI. Doing that.

MS. COHEN: Walter your thoughts on that.

MR. SIEGENTHALER: I think it's -- salaries -- it is an issue because obviously every manufacturer tries to keep their cost down. But on the other hand if I have a properly trained or skilled person I much rather pay them five dollars more an hour because they are more productive than if I have somebody who doesn't measure up to par. It comes back to the training and you started out talking about the skills gap. The

question is do we have a skills gap or is it a training gap? I think it's more of a training gap. If you do the right training we can get the people there.

And if we have the right trained people that means we have the skilled people -- we can afford to pay more. But we can't afford to pay high salaries to people who don't perform well.

MS. COHEN: Right, and in your experience -- doing your own training versus a kind of partnership with a community college -- from your point of view what works better?

MR. SIEGENTHALER: We do the hands on training as a company and that's all -- first year most of the apprentices we take in are actually seniors in high school. The first year they still have to go to high school half a day, the other day they have to work at the company. And then the second through the fourth year they go one day a week to school. We work together with Piedmont Community College and I have to say we have an excellent relationship with them. They really responded. Twenty years ago when we put this thing together they didn't really know much about it either. But they really coped with us and they do what we need. CPCC runs special classes for us. They adapt their schedule for us.

And it's starts with scheduling. Just little things. Then they offer -- a lot of the classes we need for our apprentices already but one class may be a Monday, two on Wednesday, another one on Friday that doesn't work for us. They have to schedule that our apprentices can take all the classes they need in one day. And they have to make sure that all are apprentices, not just from that one partner, but from the other partner companies within apprenticeship 2000 get into those classes. And maybe a quick word about why a partnership? We only take two apprentices per year. Well if I got to CPCC or even to high school and say I'm looking for two people, I have two

people, they laugh at me. It's not enough momentum here. But as a whole and with apprenticeship 2000 we can fill a whole class at CPCC so they can do something special for us and that's the key to it. We alone could not have done this. There is no question.

MS. COHEN: Do you think that these kind of agreements that the government is engaging in whether it's with Switzerland or Germany that the government can provide the kind of momentum and organization that's needed to create these kind of partnership or is it something that really business needs to do itself.

MR. SIEGENTHALER: Everybody has a piece in there, but to me an apprenticeship program has to be industry driven. Because you have to have the industry, the employer who is willing to get going. The rest of it to me is easy to get going. There are still stumbling blocks as I said parents and educators and so on, but if you don't have industries who seem to have a need to do that, it's not going to work. Government is not going to be able to put it all together and provide it. That's not going to happen. The agreements with Germany and Switzerland I think they are going to help. And what I see is -- especially the last six months or 12 months is a lot being talked about apprenticeships and maybe because I am so deep into it. I hear it every day. But I think it's really -- there's a lot happening and as I said before I have really good contacts with the department of labor. There is an enormous amount going into it right now to promote apprenticeships, to get it going and that's going to make it easier for us because then we don't have to do as much selling because people already know about it and I hope I will see the day when students are coming and knocking on our door and say Hey I want to make an apprenticeship. Do you have an opening? I'm probably not going to make that.

MS CELL: I could chime in on that piece too because in Michigan we do have a consortium approach with government, industry and colleges. And it was very challenging but we had great leadership for our employers which is absolutely key. We

also because so many employers were at the table -- the colleges were willing to make the changes because a lot of them were like, yeah, we've heard this before, we design a program nobody gets hired and it's a loss for the colleges, so with enough employers you can get the colleges to change and government was good I think because we were able to show some credibility. We could tap into some of the other programs in high schools and colleges and do the marketing. But the industry was very clear and this was an approach that our governor went to Germany and came back and said we need a German model program. Okay, we're on it. And we brought those employers in, but they were very clear government is changing, we've got to get this thing out of government's hands as quickly as possible, make sure it's industry driven. So, I think those three components are key, but without the industry really leading it and putting the skin in the game it's not going to be as effective.

MR. SIEGENTHALER: I think government can help to get more industry involved. Because what I have seen in North Carolina, in just three programs we have running right now based on apprenticeship 2000 the majority of the companies are European based. It's a lot easier to sell to them because they know what it is. They don't ask about an ROI because they just do it. We just have to get more American companies involved and really get them to the point where they realize they have to do something. The government is not going to solve the problem.

MS. COHEN: I'm going to throw it open to questions but I just want to add John to get to your -- you speak to other business owners, obviously this is something that you yourself have invested in. When you talk to other entrepreneurs or business owners is this something that they are open to or does it sound so alien to them that there is a lot of resistance?

MR. WHITE: Apprentice programs?

MS. COHEN: Yes, or other variations on these kinds of training programs that isn't immediately looking at the return on investment in the short term.

MR. WHITE: Right back to the public versus private company thing. The public guys are generally looking for next number rather than the ROI. Guys are investing in our people. I mean I don't want to keep repeating this. It's a community of wonderful, wonderful people who I love with all my heart and soul that I'm going to invest in so that we can stay there together. The people around me I see by and large want to do this kind of thing. This whole discussion has evolved over the last few years I think a long way from where it was in terms of the reemergence of manufacturing and therefore the investment in the people side. I think companies all over are seeing the value of it. So I think much more -- the apprentice thing is something that is beginning to gain momentum but I don't think we as American fully understand it. It's a cultural difference that we have, right and unfortunately because it's a great program.

MS. COHEN: Right, because what I was thinking culturally is that probably one of the knots is very narrowing or limiting to people young in their career who may not know exactly what they want to do yet. If they go down this kind of tunnel can they not get out?

MR. SIEGENTHALER: I think that is also a misunderstanding. A lot of people think an apprenticeship is just a dead end street. You make apprenticeship and you are stuck in there. It's a beginning. I made an apprenticeship in Switzerland many, many moons ago and I'm not out in the shop on a milling machine anymore. I have the basic understanding. I know what it's all about. And there are plenty of opportunities. To me always an apprenticeship program that's a foundation. And if you have a solid foundation you can build on top that that whatever you want. You can go in any direction. Typical example, we have also -- have apprentices as weld fabricators, we had one that

graduated about four years ago, but first about two years ago we'd been looking for a service technician. Of course, a service technician has to have mechanical, electrical, hydraulics and everything and he said I would like to travel a little bit and since we are running all our apprentices through the mechatronics program at CPCC he already had some electronics. He was in our electronics department. That's just part of the apprenticeship program. We don't just teach welding fabricating. We give them a much broader thing. He qualified, we gave him some additional training in electronics and off he went as a serviceman and now he's actually transitioning into sales. All the doors are open.

MS. COHEN: Let's open it to the audience. If there is any questions raise your hand, we've got microphones on the end there.

BURKOFF: My name is Annette Burkoff and I would just have a brief question concerning exactly these career paths that then open up in industry. You said that for the more European based companies it's not a problem if you have an apprenticeship and you go on to a higher levels, what is it like for the U.S. companies? Would you say that apprentices at some point will hit some kind of glass ceiling where people will say if you want to progress further you will need a college degree or would you say that U.S. based companies are as open and will allow these career paths?

MR. SIEGENTHALER: I think that depends on where you want to go. I don't say that a four year degree is wrong. But if you have a two year degree you can go on and let's face it if I look for an engineer and that engineer has made an apprenticeship before he got his degree I'm probably going to hire that one. That person has experience. That engineer also thinks about who am I going to manufacture the same thing. That's another path which is open and we have apprentices when they graduate, some of them immediately go on and get there four year degree. Other ones may work

for a while and then go, so all those possibilities are there. It's not a dead end.

MS. CELL: My experience in general with 100's of employers is in general yes but there are going to be some jobs that require specific degrees and skills. But in general if someone comes in and they are working really well on the line those are transferable skills. They can usually move up into a supervisor position. They can get some additional skills and training or an apprenticeship to move into a skilled trades position. If they really want to go into engineering or designing work -- if they are already doing well at a company, many times those employers want to keep them. They want to invest in good employees, so they will put them through a night program to get an additional training and a degree to move around. I see a lot of fluidity in American companies.

MR. WHITE: To that point there are jobs that require a degree. An engineer generally to put a stamp on something for approval need to have the ability to do that. It's like having a lawyer. In house lawyer versus a paralegal, right? I mean there's a difference there. It doesn't mean that paralegal isn't more qualified than most lawyers, but I think there is a place. In my company, and I talk about it like it's a little incubator, but there's a whole lot of people in the management end of the business now who were working with me in the plant year and years ago. They are now product managers, sales folks, so if you invest in them I'm telling you people want to do good. They want to grow and prosper. They just need to be provided the opportunity.

MR. SIEGENTHALER: And I think on top of it there are higher jobs out there which all companies think they need a special degree, but it's not necessarily sometimes experience replaces that.

MS. COHEN: This woman over here.

QUESTIONER: My name is Rosemary Seguero, a president of an

organization. I stay in Washington, D.C. and I am also an entrepreneur. Looking at your discussion from the first day of discussion and the second how do you look at working with international colleges doing what we are doing. We study a program from daycare teaching them to become entrepreneurs as they grow up to high school, to elementary, to high school and to college. How do you look at international part -- looking at what you are doing or what your new advice like what I'm doing in Kenya and other African countries like what you are doing training and the community colleges.

MR. WHITE: I look at not only the education, international education environment but also the business environment as being critically important. The whole premise issue is a good example of that because we need to transcend these cultural barriers somehow and one way to do it is I think to be involved with the international community in general. As we're part of it not as we're teaching it. I don't know if that answers the question at all, but that's how I sort of view that.

MR. SIEGENTHALER: Obviously we can take imported of store. It's a system from Europe let's say, Switzerland in our case, but we also do an exchange. We started that last year. We actually took three of our Swiss apprentices that came over here to the states for three months and it was a wonderful experience. Not just for those three apprentices but also for the whole company. For our company, the employees. They just embraced them and that cultural exchange that happened. It's just -- I felt like we had a morale boost.

It was really great and we have two more coming over next week. It's going to start all over again. We are looking forward to that because I think it's a great thing. We are also talking about getting some U.S. apprentices over to our company in Switzerland. We still work with the school because obviously while their apprentices they have to go to school, so we have to find a way. In Switzerland we have more of a break

in school, but the apprentices who are over here last summer, they had to do homework. They had homework assigned and we're working with CPCC to see how we can do it. Maybe even videoconferencing into the classroom. Because I don't have a problem if we have apprentices over in Switzerland and they spend one day a week in an office and they -- otherwise if they would be here in the states they would also go to school for one day. So we are working on that, but I think it's important because that cultural exchange it's -- cultures are a little bit closed in Switzerland and so you ask them it is through Kenya, but just that has made a big difference and I know they still have contact and emailing and facetimeing while they are with each other. That builds a relationship which is going to last.

MS. COHEN: Other questions in the audience? Let me ask you one here which is I want to go back this issue of for profit school which even though the industry is certainly contracted a lot -- a lot of these schools are promising these technical certificates and training and connections. Are there any out there that are living up to the promise?

MS. CELL: There is an example -- Marion Ironworks is a company in Michigan that does very large scale welding. And they did go to their community college but the curriculum and there was one employer and so trying to align the curriculum was different and they weren't -- they didn't offer enough really in depth experiences on welding. They created their own industrial arts academy up in this little remote area in Michigan. The students have to pay \$12,000, they do offer up some of the fundraising. Many of the folks that come out of that are hired by Marion Ironworks but other ones -- the program is so good and the technical skills are so great that they learn and they are learning from a master welder who does these amazing feats. And so it's actually paying off but it's a high demand area. It's done by direction from industry and you do get what

you pay for. I mean the students are getting amazing jobs coming out of that at \$70 to \$90,000 a year in high demand areas and they have a wait list of people trying to go into the training program. So if those all those components are in place of a proprietary school I think you can find good success.

MS. COHEN: Question over there.

MS. MCCULLOM: Hi, I'm Katherine McCullom with the Manufacturing Institute. I know that ROI has come up a few times. I just wanted to give a pick plug for an ROI calculator that our organization is actually in the process of the production stages of developing. Please keep us in mind as you are looking for that in the future. My question for the panel is a lot of issues with the community college and we heard this in the last panel too is that they offered these programs and then employer's come and cherry pick them before they've actually completed their credential. That hurts the community colleges. It helps the employers and so I understand you need the people right when you need them but is this a policy change that we can make or do we need to think about how to change the definition of completion and what that looks like. I just wanted to get your opinions. Or do we need to have a conversation with the employers to really press them to stay.

MS. CELL: I do think that changing the definition needs to match up so you can align colleges with what they are supposed to do. Obviously encouraging the employers and the students to try to finish that credential is good for both in the long term, but it's hard to really align all these different motivations sometimes.

MS. COHEN: It's interesting going back to the last panel, which is we have this kind of drive which we see all across education to kind of quantify success and I think one of the things that comes up is whether completions is really the only measure of success and whether -- isn't it equally successful to get somebody a job and so the

question is how can we change or thing about changing the statistical measurements in order to capture what most people would see as a successful outcome and I know this was an issue with the welding programs that I wrote about in Texas where they were saying the same thing. The employers were saying -- essentially hiring them before they finish. And from everybody's point of view that was a success story but not from their statistics.

MR. SIEGENTHALER: From our side there is always when I talk to other companies and say what should I do, educate those people and then they go to the competition. We don't see that. I think that four year apprenticeship program builds so much loyalty. Our apprentices when they graduate they don't want to leave. They want to stay with the company and that goes back to the community. They feel like they are part of it and they want to stay. We don't have any contracts, we've go a DR apprentice, they got a job upon graduation, but they have no obligation to stay. If they want to leave the next day they can. Our experience clearly is they are not leaving.

MR. WHITE: Can I just make one point real quick. You all are going to think I live in la la land. One thing that I view as an obligation in my company, our company, everybody said it's called Taco, Taco is not for everybody and everybody is not for Taco. But at some point in time people part ways, either by their own or not. My hope as a community is that if somebody leaves Taco they are better for it and are capable of jumping to the head someplace else. And it's come back to be the case.

MS. COHEN: I think you had a question before.

MR. BAILEY: I'm Tom Bailey from (inaudible) Center. I know there are cases when students are recruited out of classes and don't finish. I've heard that ever since I've been studying community colleges which is -- but it's not a large enough amount to show up in data. There's still a strong benefit to completing either a certificate

or an associate's degree compared to just taking some courses. Hidden in there may be some substantial number of people who are recruited out of there welding class before they finish. I guess I know there examples but I would be a little bit skeptical about this as a major movement or a major factor in what we are talking about today.

MS. CELL: I think the study that I've been focused on around credentialing is that there are people that have an identified -- I don't remember the exact percentage of people that have some college experience whether it's community college or they went to a four year degree and dropped out. There is a large population around there and devising some strategies for them to somehow get that completion I do think would help them be credentialed. And it shows a stronger workforce especially in a local community that's trying to attract more businesses. I do think there is something there but how you get at it -- especially someone who is employed and making a lot of money and they don't feel the need is a challenge I think.

MS. CARTER: Celeste Carter could I add just because I was the one who said cherry picking. I thought I should add that it was a very small percentage of the people that were in the program and typically a year or two years or maybe even three they are back knocking on my door saying I want to finish. They saw the value and usually the company they were working for paid for them to come back, gave them flexible work hours, allowed them to come back and pay their tuition so that they did finish. They saw that as being a more valuable employee.

MS. COHEN: And is that not necessarily a bad model if people come back? I think there is time probably for one more question over here. Go ahead.

MS. REISER: Hi, my name is Mindy Reiser. I had the opportunity to evaluate vocational training programs funded by USA ID in some developing countries but my question is to John. You said something I think which is quite pregnant with

meaning about public companies and privately held companies and I'm wondering if this is really significant. In Germany it's well known for these middle range companies that are owned by families for generations and there is a real investment in the people in the community. I'm wondering when we were talking about mega-corporations which respond to Wall Street and investment companies and hedge fund managers. If this is the same story. If we are really talking about a very different definition of what it is to own a business and what it is to care of the human well being of your employees?

MS. COHEN: I'd like to hear some thoughts.

MR. WHITE: Very briefly, yes there's a huge difference. And I think it because I see it. And I see it up close and personal by evaluating the way we operate versus some of my competitors. I am blessed with having competitors that operate that way. The loyalty is different than it is in the -- not all of them, I don't mean all of them, but some and the ones that care operate that way. I think there is a big difference because the whole driver behind public companies is the stock price and that is only achievable in markets where pricing doesn't move that rapidly. It's only achievable by cost and in very short term. I don't care about the short term and I have the luxury of not caring about the short term. I have to save business but I can invest in where I see fit. And somebody called me a visionary I never thought of myself as that, I just love people. But public companies, big ones, don't have that luxury.

MR. SIEGENTHALER: I have seen both. Siemens, the (inaudible) company actually was part of apprenticeship 2000 for a while and I think the reason was they wanted to get an apprenticeship program going and they have a big plant in Charlotte, so obviously jumping on our bandwagon was the quickest way of getting it going. They in the meantime decided to do it on their own but they still keep going with apprenticeship program so it's a positive separation we have there. On the other hand,

we have one partner company -- it's a local company that is into partnerships and really wanted to keep going and suddenly from the head office there comes the directive we have to cut cost, no more apprentices. There is nothing we can do from our little level here because that came from corporate. Yes, that is and typically as John said a public company has to make sure the next quarter is okay. That the numbers are right for the quarter. We are privately owned. If we lose money one quarter okay, that's not that bad as long as we know we are going to make progress. Nobody gets fired because we lose money the first quarter.

MS. COHEN: All right, well that's a good note to end on. Thank you all so much for participating in the panel. (Applause)

(Recess)

MS. BLUMENSTYK: Welcome back, everybody. I'm Goldie Blumenstyk. I'm a senior writer at the *Chronicle of Higher Education*. And since I know some people have been Tweeting today, Twitter handle is @goldiestandard.

We're going to conclude the sessions today focusing a little bit more on community colleges. I've actually been noticing, I think that there's a little bit of a Washington, D.C., lens on this discussion today, which I'm finding a little bit interesting. Everyone keeps talking about how we have this highfalutin notion of college. Let's remember that only 30 percent of this country has a bachelor's degree right now, and so I think we need to broaden our horizons a little bit about what we're talking about today.

Also, I was pleased to hear Congressman Cicilline talk a little bit about the narrative changing around manufacturing. I would argue that the narrative is changing already about community colleges. The questions that this panel is going to talk up today is are they really living up to that new reputation not just in areas of marketing and getting the word out, but in actually delivering these kinds of good

programs that we need to be talking about today?

So I'm going to start with you all have introductions of our panel, so I don't need to do that for you. I'm going to start with Tom Bailey at my far right here, obviously a scholar of community colleges.

Tom, do you have a Twitter handle?

MR. BAILEY: It's either baileyccrc or ccrbailey. (Laughter)

MS. BLUMENSTYK: That's CCRC for Community College Research Center, so dig around for that.

So we've heard a little bit about some of the kinds of things community colleges are doing. Can you just step back and briefly kind of give us an overview about the kind of training that community colleges are doing? You know, just to give people -- make sure they have a full spectrum of things rather than just sort of a haphazard view.

MR. BAILEY: Well, okay, I think that one of thing about community colleges is it's difficult to generalize. There are fabulous programs at some. Some community colleges have wonderful relationships with employers; we've heard some of those. Some of them don't. I think that's a -- and it's very much a local issue. The state's involved somewhat, but I think it's -- where it works well is when the local presidents and leadership of the college is working with the local employers' community, and that's great.

But I want to say that the fact that we've heard some good stories and there's so much variation, I think, is a fundamental issue. Actually Celeste and I were at a conference that she mentioned at the National Academy of Sciences on middle skills jobs and I heard so many great things, I sort of left the conference saying what's the problem? I mean, there's this program and that program, and we've heard that, too. And that's true, I guess, you know, you could fill up a two- or three-day conference with

fabulous programs and we do that, but these aren't randomly selected people from the country who are coming to talk about that.

And, I mean, a community college can absorb many of these individuals programs without fundamentally changing. And still a majority of community college students, they don't finish. They leave without degrees. Many of them are stuck in remediation. So all of these problems continue to exist despite the fact that any of those institutions will have some great programs that we can talk about.

And I think that's what the -- I mean, we -- I'm trying to summarize a book we just wrote in two minutes, Redesigning America's Community Colleges, and I think that, you know, the point is that the fundamental design of the colleges is what we call the cafeteria model. There's a ton of stuff there, almost everything, some great things. Whatever you want, you can get there, except you really have to find it yourself as a student.

So the kinds of things that we wanted to argue is that first you have to have, our programs have to be more structured, better designed, easier to understand, and, in this case I think this is relevant specifically, they need to be connected to wherever you're going, either subsequent education or to the labor market. And in that case, if there really are jobs of this type in your local labor market, those need to be tied to those programs.

Now, I say "if" because I think, in some cases, there aren't and I think we need to question. I think there's been some skepticism about the nature of the shortage of skills. So I think that's one thing.

Now, the second point, somebody mentioned counseling and in the typical counseling situation in the community college is a few minutes with a counselor when you come to register. Now, there are some other examples or there are some

exceptions to that, but that's not going to be able to work with a student to tell them about these wonderful opportunities or to allow them to really understand what it is that they want to do and whether that will connect the opportunities that they have, so I think it's much more than thinking about specific counseling, whether we need some more counseling.

Yes, we do, but we need a whole different way of thinking about the intake process of a community college. It's not 10 minutes with a counselor, off to the testing center where you're told you're not ready for college and you need to go to remediation. Maybe that's a little bit stark, but that's fundamentally the intake process that we have at community colleges, at most community colleges. Now, there are definitely exceptions. We've heard exceptions this morning, I think.

So if we want to be able to connect these programs to employers, whether they're apprenticeships, whether they're good work-based training, whether there's a good program at the college that will prepare people, so we need to develop better programs, better pathways in those programs. And we have to take much more seriously working with students to figure out what it is they want to do and how they can connect to those programs.

So I think if we could do that, that will both, I think, in general, address the overall problems that we have with completion in community colleges, but it will also allow us, if there are issues with employment in manufacturing and there are opportunities there, a much more effective way to connect to those opportunities.

MS. BLUMENSTYK: So, John Colborn, from Skills for the Future at Aspen, do you have a Twitter handle?

MR. COLBORN: Johncolborn, yes.

MS. BLUMENSTYK: Great. Very creative one. So Tom's gotten us

started on this topic a little bit here. You've mentioned to me when we were getting ready for this talk that to really be successful with this, the employers and the companies have to be really engaged with the colleges in a much more -- not just at the presidential level, not just even at the dean level, but really down to the faculty level. I think you mentioned faculty development, career advice and guest instruction, job shadowing, capstone projects, job fairs, interview days, all that stuff. Are the colleges even equipped to begin to do some of that stuff?

MR. COLBORN: So, you know, just to build on Tom's comments, in my last job, it was at the Ford Foundation, I worked a lot with community colleges and I had a joke. I would say that community colleges are expert at best practice. They can adopt it and then wall it away from the rest of the institution so it doesn't infect the rest of the college. (Laughter)

MS. BLUMENSTYK: So they can do it in isolation.

MR. COLBORN: Exactly. And so I think our challenge is exactly what Tom said, it is the whole school. How do you get these practices throughout the whole school? And I think there are probably three things that really drive that.

One is we have the outcomes that we have in community colleges because public policy has been perfectly aligned to get those outcomes. So you want to have a community college where people start a lot of classes, but then don't finish those classes, or start a lot of programs, but don't finish those programs? Well, then let's be sure we pay people on enrollment or pay the community college on enrollment rather on results. Right?

And so I think one thing that certainly we need to be looking at is what does public -- who do you structure public policy in ways that gets to the kinds of results we want to see? Some of that is payment on performance, but some of that is also on

the very governance of community colleges. If you have a community college governance system that is very inward-looking, that doesn't really take in perspectives from the community and from employers, then you're likely to get a certain result.

MS. BLUMENSTYK: Is there a way to structure a governance policy around that, changing the culture of that, which way -- whether it's inward-looking or outward-looking?

MR. COLBORN: So we're actually engaged in developing a reconnaissance across the states. Because the beautiful thing about community colleges is because they come in so many different shapes and sizes and are subject to 50 different state policies around governance, we actually want to look at what kinds of policies states can adopt that seem to sort of promote better engagement with communities, whether that's around how trustees are appointed or elected, whether that's around how outcomes are rewarded, whether that's around how funding is structured. So I think policy is certainly number one.

The second thing my colleague Josh Wyner, at the College Excellence Program at the Aspen Institute, would certainly say is leadership. And so when you have a president and senior management team that really values outcomes for students and student success, that really focuses on community and employer engagement, you get certain results in the institution. Now, that's uneven to get the right leadership in every single community college, but we know that that has a significant impact.

And I think the third thing then is that we need to start treating the processes around employer and community engagement as critical functions, every bit as critical as the bursar function, as the enrollment function, as facilities management. We need to really start having practices and professional development approaches that value that and that provide sort of management structure feedback loops within the

institution to value that activity.

And just another project we're engaged in right now is actually creating a benchmarking tool that can help community colleges and community college programs assess the level of employer engagement that they have. We actually think that measuring something is sort of the first step towards actually valuing it and making it a more systematic function.

MS. BLUMENSTYK: Great. Adela Soliz, Twitter handle, first of all?

MS. SOLIZ: Like John, it's uncreative. It's @adelasoliz.

MS. BLUMENSTYK: There you go. You've been studying these programs a little bit and I know you have some concerns about kind of the nature of the credentials or maybe the nature of the education that comes out of it. You've heard a little of the discussion earlier about whether it's a little bit too narrow, some of these technical certificates, some of the AAS degree. I mean, how do colleges guard against keeping these degrees from becoming -- or certificates or whatever it is that they're offering as part of these programs, how do they guard against keeping them too narrow?

MS. SOLIZ: Right. I mean, I'm not sure there's a clear solution to guard against it yet. I think it's sort of -- I'm sure that we could all as a group argue about whether this is even true. My concerns are sort of almost more research questions than concerns.

I think one solution that I've seen, though, to potentially sort of giving people these narrow certificates that don't provide a foundation for future education or to deal with changing labor markets, is the stackable credit idea.

MS. BLUMENSTYK: So we all heard about this idea, stackable credits, a certificate that doesn't lead to nowhere, but it leads to something else. And, I guess, I think it's a very important part of the process, but I'd like to also hear from our panel

about whether they think it's actually -- are most credentials stackable now? Do they do that?

MR. COLBORN: I would say most are not. I think there's an aspiration to certainly build higher levels of stackability.

You know, once upon a time, I think there was this view that college education was sort of a single-dose experience. Right? So at 18, you got your dose of education, 4 years, and then you were sort of done. That was never exactly truly true, but I think that was sort of the perception. And I think we're now in -- you know, the fastest-growing area of higher education is the certificate, right? It's this shorter-term credential. And I think that reflects a much more rapidly evolving set of skill needs and skill expectations.

I think Americans have gotten the message that they need to be continually upgrading their own skills, sometimes with the help of their employer, which is great when that happens. And so I think that then demands that education providers have a mechanism of helping people map to that, so it's not just an ad hoc sort of episodic, go to the cafeteria, pick up the right -- hopefully you're getting the right program. But I think practice certainly lags on that.

MR. BAILEY: Yeah. The jury is somewhat still out on that. I mean, we already heard some examples about certificates where actually people are coming back with bachelor's degrees or master's degrees.

MS. BLUMENSTYK: But that's not a stackable credential. That's a credential that you're coming back to get.

MR. BAILEY: No, no, but I'm looking -- what I'm saying is if you're looking at, let's say, a certificate and you want to think of a certificate as a -- I mean, we think of an associate's degree kind of as something that leads to a bachelor's degree.

The certificates lead to substantive degrees? In most cases they don't, just empirically in terms of how many people get certificates and move on.

And all I wanted to say about that was that, in many cases, the people getting certificates already have bachelor's degrees, so there's a lot of people getting these "lower level" degrees when they actually have the degree.

So I do think that the notion of stackable credential, which, by the way, one of the problems of, you know, getting older is that you hear the same discussion for a long time. (Laughter) I've been hearing this discussion for a long time and I do think it's, at this point, much more aspirational than it is kind of a fundamental part of the educational system.

MS. BLUMENSTYK: Which may be depressing if you've been hearing this discussion for a long time and it's still kind of aspirational.

MR. BAILEY: You can take that up with my therapist. (Laughter)

MS. BLUMENSTYK: Adela, you want to go back to some of your concerns about these credentials. I know you've also had some concerns about the associate of applied sciences credential?

MS. SOLIZ: Right. Actually sort of related to the stackable credits and talking about the certificates idea, I would like my fellow panelists' opinions on how well these credentials are understood across labor markets. We know that people are mobile, so is this effectively training a person who is attending their local community college, but then moving to the next city to try to get this job at welding or what have you?

MS. BLUMENSTYK: Right, especially when these things are so employer-tied.

MR. COLBORN: I think we all have to acknowledge the credentialing system is completely broken and there is --

MS. BLUMENSTYK: Twitter that. Tweet that, folks.

MR. COLBORN: -- huge confusion among employers, among educators, and among students around just how all these things fit together. We're at a stage right now where basically any yahoo can put out a shingle and say I have a credential, and maybe it's got labor market value, maybe it doesn't; maybe it's stackable, maybe it's not. And so there are many efforts now underway to try to impose some level of order of rationality onto that system and I think some of us know about the work at ANSI, the work cred system. Certainly the Lumina Foundation has put significant markers down to try to figure out how you rationalize this system. But it is a huge, huge problem.

And one way, I think, you get around that is certainly something that we at Skills for America's Future are very big on, which is a deep engagement of employers in the design, development, and rollout of those credentials. And I think one thing that you like about -- that I like about apprenticeships is that they have been validated, at least by one employer, and with some recognition either from the federal government or from a state government that, in fact, there's value to this apprenticeship, this program.

MS. BLUMENSTYK: Does that deep engagement also have to be sort of across an industry standard, not just a local company standard? I'm sort of thinking that might be a way to make some of these credentials a little more useful, but it's not just what this local company wants, but this is a standard that would also be something that will be, you know, more transferable?

MR. BAILEY: Yeah, I think the issue of how employer organizations can work together is a major problem really. And I think if we want to think about making apprenticeship much more broadly available and kind of a more fundamental part of our education system, then we'll need to get employers working together more than they are

now. So, I mean, I think the issue about portability, I mean, one of the great strengths of the community college is its local relationships. There's no question about that. Those are great. They can be great.

How then you connect that, I mean, I think as you go up the ladder of a bachelor's degree is more mobile, associate's degree are certificates since we don't really know what they are, and there's a huge amount of noncredit training which is pretty much completely not portable. The growth of certifications, the whole competency-based education, I mean, there's a -- we don't even know the effects of certifications because we don't have somebody -- we talked about data before, we don't have good data on that. So, yes, there's a lot of things going on there and, you know, we're going to need to be able to understand that more because there's a lot of discussion about that.

I think we're still in an institution-based education world and I think that we can do a lot to improve those institutions and to make them function better. I think the thing about community colleges is we have to remember community colleges were set up to open education to wide groups of people at a low cost. They've been spectacularly successful at doing that. But the problem with designing a college that does that is it's not the same thing as designing one that is going to get students to the end and get students to the goals that they have.

And if you have an open system where everybody can get what they want and easily enroll on any kind of a schedule at anything that they want to do, that's going to be difficult and we simply don't have the advising capabilities to be able to manage people in this kind of chaotic situation.

MS. BLUMENSTYK: It's so easy to get off track in that environment.

MR. BAILEY: Yes.

MS. BLUMENSTYK: You talked a lot about how they really need a deep

employer engagement and employer engagement with the faculty. And to return to the point of the gentleman who raised it earlier, how can you really have that kind of deep employer engagement with faculty when we have such a high adjunctification level at colleges right now? I mean, if the faculty aren't there to -- because they only pay per course.

MR. BAILEY: I mean, somebody said this before, we have -- before I answer that question -- have to emphasize, you know, we pay these institutions the least and they have the students with the most problems. So, you know, as the President said, that's the constraint that community colleges have. We see states, I mean, the states completely getting out of the community college funding business in some cases. And the fact is, I mean, it is --

MS. BLUMENSTYK: But in other states, paying for it for free.

MR. BAILEY: That's true, but, you know, we can argue that if you actually invest in more full-time faculty or more advisors, you can get your completion rates up and so the cost completion might come down. That's an important thing to remember. But, of course, the colleges aren't paying for themselves on the cost per completion. They're paying on the cost per enrollment. And the things that we have to get those costs down tend to be the things which make it more difficult for us to have students to get to the ends that they want and, frankly, will make it more difficult to connect to manufacturers so that we can provide that kind of skill. So, I mean, let's just take that as a given. We pay the least to the colleges that have the students with the most barriers.

Now, I do think there are things that can be done adjuncts. I do think there are things we can do under the current funding structure that we have. Certainly efforts need to be made to incorporate those adjuncts in. And as somebody said before,

many of those adjuncts are actually, you know, practitioners of whatever it is they're teaching, so let's remember that it's -- you know, it's not just a bleak plain of part-time teachers. There are certainly -- you want some adjuncts there because they're actually current practitioners. But I do think that it's a fundamental thing, if we really want to improve the performance of institutions, we're going to have to incorporate as much as we can the part-time faculty that we have.

MS. SOLIZ: I actually worked as an adjunct in one of these workforce development programs, so a way that we sort of overcame this high turnover rate -- I mean, first of all, I should say I was a very lucky adjunct. We were unionized, so we were paid a good wage and we have benefits. So, I mean, maybe the first part of the solution is to sort of at least partly get rid of the whole adjunct system, gear adjuncts better.

MS. BLUMENSTYK: The exploitation of that. That's right.

MS. SOLIZ: Right. But we as a faculty developing this program at the very beginning, I mean, in a way that sort of the for-profits do actually, as well, creating curricula that we hoped would build a pass-down, you know. So even if I left that year, I had this core curriculum that I could give to somebody that was just starting this job and, hopefully, they would be able to teach the course the same way that I taught it. I mean, there are lots of things about that that are not ideal, but it is a partial solution.

MS. BLUMENSTYK: Yeah, I would think just even having the continuity with your corporate partners or, you know, those having -- those are harder relationships to maintain.

MS. SOLIZ: Right. I mean, those were higher up. You know, I wasn't the one that was getting to talk to the industries that we were creating courses for.

MS. BLUMENSTYK: I want to talk a little bit about measuring quality of outcomes, outcomes of the programs and I think also making sure that colleges are

investing their programs in fields where there's a good payoff with the wages. I know Kentucky has done some work in this area, in the technical college system, where they're eliminated some programs that weren't in high-paying fields. But is there a state-of-the-art best practices about this right now, for what colleges are doing to make sure that they're evaluating their programs well and particularly looking for the programs with the right outcomes?

MR. BAILEY: Well, I think once again, at least for community colleges, it gets back to the local context. And, you know, in some areas it's high population-density areas, then there are lots of different employers, so colleges can have a variety of programs that speak to that. You know, there has to be -- I mean, if they do have relationships to employers and are interacting with them, then they'll have a better idea of what the programs are that are necessary, whether their graduates actually have the skills that are necessary. So I think that's a crucial element of that.

Now, you know, so community colleges have redesigned their programs in some cases. You talk about Chicago, that's an example of Chicago. They have a set of community colleges, the City Colleges of Chicago, and they have made -- they've specialized their programs in different areas in the city because there are different employers and concentrations of employers in those areas. So they've done that. They have -- or reorganized their programs into broad areas, about 10 of them let's say, health or business, and those are designed in relationship to employers. So I think that's a crucial part of what they're doing.

MS. BLUMENSTYK: Is there kind of a right way, wrong way to do that or are you saying it's really locally -- I mean, is there a sort of template for just even these are three good approaches to take? I'm just wondering, you know, if they say, okay, well, we want to do a better job of measuring, how do they start?

MR. BAILEY: Well, of course, measuring is different from doing, right? I mean, I think it depends on the nature of the business organizations that are in your local areas. In some cases there are -- you know, if there's a German Chamber of Commerce or a Swiss Chamber of Commerce there, then you can work with them. If the employers are organized that's a better situation. If not, then in the college you're going to have to be doing some of those yourselves to bring that together.

MR. COLBORN: You know, I mean, I think at our College Excellence Program, the Aspen prize for community colleges, really values two key elements. One is, you know, the success of the student. Are they actually completing a program? And then what are the labor market outcomes for that student upon graduation or completion?

And you don't want to be completely reductive about that and there certainly are other purposes that people go to community college. I don't mean to say that that's the end-all and be-all of every measurement for every program at a community college, but I think you start there. And certainly, you know, we know that there are pending regulation and regulatory proposals at the Department of Education that would start to roll that out. I think you start there and you can sort of start working around that, but, to me, those are good places to start.

MR. BAILEY: I think there's something else which we haven't talked very much about, which is the associate's degree certificate, associates or bachelor's degree. Now, there are many programs, occupationally specific programs, in community colleges that were associate's degrees working with manufacturers, and now many of those jobs want bachelor's degrees. So I think it's important, maybe this gets back to stackable issue, but it's important that we think about the future, that we hold open the options that students have so that they can go on and get their bachelor's degree in many of these areas.

And I think that -- I mean, when you really think about what would work or what needs to work, and it's very difficult, is that you get the two-year or the four-year college and the employers together so that they can work on it. There you have an opportunity perhaps to make a stackable credential. I mean, nursing is kind of an unusual situation. I mean, many associate degree nurses go out and work and then they go back and get a bachelor's degree. So it's an unusual area and it's highly regulated because of the certification required of the state, but if you want an example of how it is you want to build that, I think more things are going to be looking like nursing, perhaps not with the state regulation, but I think that's one model that we want to be able to do so that people can get their associate's degree, recognizing that many of those jobs really need more education.

MR. COLBORN: Can I say one more thing, which is just I think just our research understanding of the sub-associate's degree certifications is really limited. And I know the Department of Education's actually building up some new capacities now to be able to understand that better as a country sort of where we are. But we have very little understanding of which of these certifications really seem to propel opportunity and which ones don't. If you look at the aggregate data, it kind of looks a little murky, bleak even.

MS. BLUMENSTYK: Aggregate data, I think, shows that there are advantages, but then you have to go dig and say this certificate is good.

MR. COLBORN: It has real advantages --

MS. BLUMENSTYK: Right.

MR. COLBORN: -- and this one maybe is negative or has very little advantage.

MS. BLUMENSTYK: Right. And some can be very costly and get you nowhere.

MR. BAILEY: I mean, well, we have actually a Department of Education-funded center, CAPSEE, Center for Analysis of Postsecondary Education and Employment, and we are doing quite a bit on certifications. Short-term certifications, not surprisingly, aren't as valuable. In some cases we can't see statistically significant effects.

If you want to generalize, certainly health, if you look at the certificates, you know, maybe much of the positive effect of certificates comes from health.

MS. BLUMENSTYK: And since we're here about manufacturing, do we have any sense of what they are in manufacturing?

MR. BAILEY: I think in manufacturing, it's kind of difficult to do this, but generally what we find is that certificates will give you a bump in your earnings, but it won't change the rate at which the earnings grow whereas associate's degrees tend to not only give you sort of a bump, but also change the rate at which they grow. So I think that's -- but they're so varied, they're so different. You know, you're really generalizing about certificates with a bit of anxiety, let's put it that way.

MS. BLUMENSTYK: So we talked a little bit about apprenticeships earlier today. I know there's been this new \$100 million initiative from the Department of Labor. I'm not that familiar with it myself, but I'm wondering if anyone on the panel can say were there aspects to that grant program that made it more attractive or less attractive to community colleges to be part of it? Is it something that's going to really give a boon to it?

I kind of was surprised when I was doing my book, for all the noise about apprenticeships, how few apprenticeships we actually have in this country. That was a little bit of a shock on that.

MR. COLBORN: Absolutely. I mean, I think if you look at the level of

investment that the country has made in apprenticeships, we have about the number of apprenticeships you'd expect given that level of investment.

MS. BLUMENSTYK: But this thing in particular, will it really jump start anything at community colleges?

MR. BAILEY: I mean, I think that the -- I've emphasized the institutionalization concept here and I think if we want to think about this as broad thing, we want to think about what is the institutional structure that supports apprenticeship? We can have a number of apprentices from dedicated employers, especially employers who have experience of this.

I mean, I don't think it's surprising that German and Swiss employers are the ones who are doing this. But, I mean, if you think about the institutional structure that supports apprenticeship in Europe, you have very strong employer organizations that actually have authority and people that work together, you have the unions, you have the social partners, and you have government involvement, as well. So it's a triple partnership. And it seems to me, in all of those cases, we're moving institutionally in the opposite direction.

So we're going to have apprenticeships, but that's going to be based on dedicated employers who get together on their own, without a strong institutional support. Colleges are perfectly happy to provide the classroom-based instruction for those and I'm sure that many of them actually do that. So they're there available to do that. But I think that, you know, what are the wages that apprentices are getting? How is that regulated? What is the quality of the instruction that takes place? Are we going to have some kind of quality assurance procedure that does that? I mean, we've heard from employers today, and I'm absolutely sure that the quality of their apprentices is great, but if we want this to be a mass organization or a mass movement, then I think we need to think about that.

So I'm sure we're going to get a growth of it. We have a lot of discussion about it. There's some resources that are put behind it. But I think we have a lot of other type of work to do if we want this to be something more than an interesting thing of which there are some excellent examples, but it isn't really going to grow. So that's my view of it.

MS. SOLIZ: I'll leave it with what Tom said.

MS. BLUMENSTYK: One of the things that we haven't talked that much about is sort of the preparation level for community college students when they come in. And, you know, even when you're going into an apprenticeship program or maybe not a formal apprenticeship program, an industry-sponsored program, I think, John, you mentioned to me earlier that math skills, English skills can still be quite a barrier.

MR. COLBORN: Huge barriers, yeah.

MS. BLUMENSTYK: Can you talk a little bit about the nature of the kind of remediation that colleges need to be thinking about? And again, are they in a position to provide that kind of remediation?

MR. COLBORN: Yeah. So, of course, Tom has studied this, so I'm going to defer to him on the stats, but I think certainly what we are seeing, those programs that seem to be most effective in both working with employers and then working with the student population base as it arrives at a community college are those that seems to be able to embed remedial education in math and English into the instructional program, that do that rapidly and quickly, and that do that in a context that makes sure the remedial instruction actually relates to the field of study that the student is performing and is interested in. And if you do those things, we seem to see much higher levels of success. If somebody goes into a traditional, isolated remedial program, particularly if they're two or three levels back, the odds of them actually ending up in

college-level instruction are virtually zero.

MR. BAILEY: No, I agree with that. I think that the -- yes, the prerequisite isolated remediation that you're supposed to take before you start college, I think that's what's not working and that there's a variety of ways in which you can incorporate that instruction into college-level, either if it's a regular math or English, you can use a corequisite kind of model where students are in the college-level program, but have some additional instruction or support besides that.

I think that the occupational area, as John said, is one where there's tremendous opportunity for that where you can really embed that instruction contextually into the types of things that you're doing, so you're not off doing a math course over there, the same math course you took in high school that you didn't do well in. You're actually engaged in doing activities on the job and then getting instruction in mathematics where that's relevant to what you're doing. So I think the manufacturing and other occupational instruction, I mean, you know, many technical colleges here in the United States actually do that, where they have kind of just-in-time instruction for students who have weak academic skills. And I'm much more optimistic about that. So I think in this particular topic of this meeting I think is an area where there's a lot of potential for that.

MS. BLUMENSTYK: So in this case it actually could be the just-in-time kind of training could actually jump start and improve traditional remedial education as well at colleges?

MS. SOLIZ: Well, I think also having these basic skills courses embedded in these workforce training programs and certificates, I mean, that helps them move more towards being this foundation for future education.

MR. COLBORN: Totally.

MS. SOLIZ: So I think it's really a win-win situation.

MS. BLUMENSTYK: Okay, I have a lot more questions, but I know we want to get some time to get some folks in the audience. So I don't know if the microphone people are out there yet. There's microphone people and there's some questions. (Laughter) We've got both, microphone people and questions.

We have a couple right up here in the front. A woman in the red, I think. We're take a few.

MS. HEGEWISCH: Hello. It's Ariane Hegewisch from the Institute for Women's Policy Research. I have a question about measurement and about training.

The big issue on manufacturing and middle-skill jobs is that there are such enormous gender segregation. You know, it's like in most of those jobs, it's less than 5 percent women, the growing jobs. And we know from Perkins, where colleges and K-12 have to measure how many women and men enroll in nontraditional occupations, that there is a huge variation between states of how much they get young women and men to do manufacturing CTE in school and then there's a big drop off and then how much they do in college. So we were talking about marketing earlier. Firstly, can we integrate this issue of access for woman more strongly into marketing?

But the second thing is then we also heard they come, training hasn't changed, teaching hasn't changed, the workplace hasn't changed, and they think why should we be here? We're not welcome.

So I just kind of on measurement, on training, on teaching, how can we open manufacturing, good manufacturing jobs to women?

MR. BAILEY: We're all looking at each other. Yeah, I guess my -- I know we've been talking about this a long time and I'm not sure there's a good answer to that. But I do think that, at least from the point of view of community colleges, if we have a more thought-out and coherent process for helping students think about what they want

to do -- now, I mean, I suppose it's perfectly possible that bias can go into that and perhaps that might reinforce gender segregation, but I think that that -- you know, if men think that nursing is something they don't want to do and women think that being a machinist isn't for them, I think that we can certainly try to incorporate in the kind of entry work that we do with students to try to fight against those types of biases or stereotypes.

I think that would probably require a considered strategy to address that, to talk with people who are engaged in that, about trying to make sure that they're not pushing that particular bias. But --

MS. BLUMENSTYK: Do you see that as the colleges' role actually?

MR. COLBORN: Well, I was just going to say I think employer leadership is key on this. And we know, you know, a few well-placed articles in the *New York Times* and suddenly Silicon Valley is very interested in diversity. (Laughter) And I think that's a poll strategy that helps, you know, that suddenly there's now resources and messaging from those employers saying, you know, we care about having a racially and gender-diverse workforce, and we're going to work with our education partners to be sure we get that delivered to us. So I think there is something about employer leadership on some of this.

I would be remiss if I didn't say that, in fact, in aggregate, leaving aside the nontraditional occupations, in aggregate our problem in higher education is actually getting men into colleges --

MS. BLUMENSTYK: Right, it's like 60-40 now?

MR. COLBORN: -- and getting success for men in colleges and community colleges.

MR. BAILEY: Just if you have a system, an unorganized system, where people kind of come into college without much sort of social support behind them and

stumble around into a bunch of courses that we want to expose them to, you know, there's no lever that we have to deal with that. If we have a more strategic approach to helping students figure out what they want to do and helping them do a more coherent exploration of their opportunities, then at least there's a lever that we can pull to try to deal with that. Other than that, we don't have any -- you know, other than a billboard or something like that, which, I mean, I think is a great idea, but I don't think we can count on that to really do that.

MS. BLUMENSTYK: I think there's one.

MS. HERK: Monica Herk, Committee for Economic Development. So this is another measurement data question.

The states got money for longitudinal P-20 data systems, which were supposed to be the "P" being pre-K up through 20s. So at least theoretically, if a student was in community college and then stayed in the same state to work, then states should be able to track that through like the UI data and so on. So do we not have that, not even in one or two or three states so we can start learning about the connections between certificates training and employment outcomes, at least initially?

MS. BLUMENSTYK: Well, Virginia's doing quite a lot of that, isn't it?

MR. COLBORN: Or to Texas.

MS. BLUMENSTYK: Texas has been doing quite a bit.

MS. SOLIZ: A lot of (inaudible).

MR. BAILEY: I guess my -- well, you probably have some experience with that.

MS. SOLIZ: So I'm actually a part of Tom's CAPSEE group, so I've been working with Ohio data for a long time. And so it is linked, some of it, between the institutional P-20 data or we actually just have higher ed is linked to UI.

MS. BLUMENSTYK: "Unemployment insurance," just in case.

MS. SOLIZ: Right. So we really need that to be linked back to K-12. But also there are sort of constant issues related to just kind of the politics of who has access to data. I thought the first panel was really interesting in that it sort of made it sound like we're collecting all of this data and really the problem is that there aren't enough researchers. We don't have the research capacity to analyze it. But if that's true, there's clearly some sort of relationship breakdown in the pipeline, you know, because there are lots of people that want to an answer to these questions, including myself, with state datasets, with national datasets. And definitely with data, there has to be a link to the UI data. The state data has to be linked to the UI data.

MR. COLBORN: I think there's also -- I'm not an expert on this, but I think at the sub-associate's degree level, some of the certificates, there is not a common coding process for that. It's very, very messy to really try and figure out. And you might have an institution that has its own sort of named and designed certificate that, you know, it would be different at another institution. So I think actually being able to drill down on that is still a challenge, right?

MS. SOLIZ: Definitely. I mean, you can see something. You know, for example, in the Ohio data I can observe that somebody earned a certificate, I can observe what kind of certificate they earned, and I can observe what they declared as their major.

MR. COLBORN: Yeah.

MS. SOLIZ: So you're absolutely right, that's not all the detail that we would really want to evaluate these workforce certificate programs, but, you know, I can get partway there.

MR. BAILEY: So, I mean, I guess I'm not sure I've seen the effect of the

K-20 state longitudinal data systems. I mean, we have worked in five or six or seven states to try to take K-12 to community college, to four-year college, and link that to UI data. It's extremely difficult. I mean, we have kind of an infrastructure to do it and it's still very difficult to do that. State policies, the interpretations of FERPA change, so we may have a relationship with one state now and next year we won't have access to those data.

So I think that it's a very difficult process. And certainly, if we want to be able to easily and have a much broader -- I mean, Adela's working with a professor, Bridget Terry Long, who worked with those Ohio data for 10 years. So that's the kind of relationship that you need to have to get access to those data. If you as a researcher go into some state capital, it's going to be years before you get a nice dataset that you can work with. So, I mean, I think that's as far as really being able to understand what that is.

I mean, we do have the national clearinghouse data, which allows us to track individual students throughout the whole education system. It doesn't have a lot of detail in it, but nevertheless --

MS. SOLIZ: It doesn't go back to K-12.

MR. BAILEY: That's right. Well, starting to, but that's the -- so we're in kind of a wild West of data. And I think there's some political currents that are actually making it more difficult for us to get those data now.

MS. BLUMENSTYK: More questions?

SPEAKER: Hi. I'm also someone with a second question. My question is about funding and accreditation for a lot of these manufacturing training programs that are at the community colleges. They are oftentimes noncredit-bearing or, if they are, they're moving up towards an AAS degree, which doesn't transfer easily to a four-year degree. The funding side, if the programs are non-accredited, then you can't access

federal financial aid or Pell Grants for these. So can you talk about maybe how the Higher Education Act, which is coming up, could affect this or just policies that you've seen that can help ease this burden?

MS. BLUMENSTYK: I also want to build on that question because I've been sort of interested in what changes about the programs depending on who's paying for it. Is the student paying out of their pocket? Is it coming out of a federal grant if it's accredited? If the employer pays for it, you know, we saw some stuff in the *Washington Post* recently about the roles of unions in doing this kind of training, when unions are paying for it. Can you answer her question, but also sort of extend that a little bit and talk a little bit about the nature of how these programs might change depending on who's financing them?

MR. BAILEY: I guess it's difficult to answer that question because, in many cases, it depends on the state. All the states are different with respect to how they regulate or certify different programs. I mean, you'll have -- you know, some states fund noncredit, for example, and other states don't. So you'll find that in the states that fund noncredit there's a lot more noncredit. And in the states that don't, lots of that noncredit is now incorporated into a degree program because you can have access to financial aid.

I do think that there's a trend towards trying to be more concrete about the requirement that students be in programs for them to be able to access financial aid. I think that's a good thing. We can make a program -- I mean, you can be in a program which is not very well organized, called General Studies, and that's, yes, you're in a program, but that doesn't really lead anywhere, isn't well organized, and, you know, it's not very effective. So I think that's one area.

I mean, employers -- or colleges will do noncredit programs because they're easy to mount. They can do those quickly. They don't have to go to the state

capital to get them accredited or anything. And an employer comes in and says, you know, they want some training or else there's layoffs and there's training. Those are the kinds -- you know, the colleges can do those quickly and, in many cases, they do those very effectively. And if they're going to go through a process that will make them part of a program, then those students will be eligible for financial aid, you know, then that slows that down.

MR. COLBORN: I would just say two things on this. One is a sort of broad comments, which is, you know, if you just look at federal resources and how they're allocated around adult education and training, our Higher Education Act is our de facto workforce development program. We have the Workforce Innovation and Opportunity funding, but if you look at the amounts of money relative to, you know, Title IV higher education, it's miniscule, small amounts of money.

And so I think you're asking exactly the right question, which is given that that is, in fact, the case -- we may not acknowledge it, but it is, in fact, the case -- then how do you open that up or how do you make sure that it's able to get to that objective?

The second thing I would say is that I think there are -- you know, been baby steps taken to try and put a little bit more flexibility in terms of how Pell and other Higher Education Act resources can be accessed. So the ability to benefit, you know, some of the waiver authority around program length that individual institutions have. I think there are things that start to open that up. And I think doing that carefully, and considered with good research, is a good move for this next iteration of the Higher Education Act.

MS. BLUMENSTYK: And then there was just this announcement last week that the department is going to have a discussion about opening up Title IV to more nontraditional providers. And that was always put in the context of like coding academies

and all this groovy stuff out of Silicon Valley. But I wonder whether it could also be some of these other kinds of training programs that are a little bit more manufacturing-based. I don't know that those people are invited to the meeting yet.

MR. BAILEY: Well, and then there's the discussion of certifications, at worst competency-based, education-based types of certifications, and whether those will be accredited and to what extent students can access those -- financial aid when they're enrolled in those programs. So that's a huge issue, there's a lot of discussion about that. I think we have a long way to go before that all gets sorted out, but I think those are -- I assume that as we discuss the reauthorization that those types of things will be extensively discussed.

MS. BLUMENSTYK: I think there's some more questions about there, but can one of you hit on my union question at least a little bit? I mean, we've talked a lot about employer training, employer-college training. I mean, is there a renewed role for union in college training programs?

MR. COLBORN: I mean, certainly I think there's huge promise there, particularly as you get --

MS. BLUMENSTYK: Even with shrinking unions?

MR. COLBORN: Even among shrinking unions. One thing that unions do that an individual employer doesn't is they tend to work across firms. And so you end up with consortia which I think gives programs of study much more impact and meaning because they're working across multiple firms.

So with the limitations of where unions are these days, I think there are some definite possibilities there. And I know particularly in health care there's quite a bit of work, really innovative work going on. In fact, I think today there's a meeting just across one of the rivers in town here around how to design apprenticeship and other

kinds of incoming worker training in health care.

MS. BLUMENSTYK: Back there. Thank you.

MS. PEACOCK: Hi. I'm Gretchen Peacock from Lockheed Martin. And there was a lot of discussion in the last panel about publicly held versus privately held companies and their flexibility in short-term versus long-term decision-making and what their goals are. And there's been a lot of discussion in this panel about the onus being on employers to take the lead in a lot of these activities. And so I was wondering if you had either any suggestions, recommendations, or success stories in publicly held companies working with community colleges and how that's played out.

MR. COLBORN: So, I mean, we certainly have plenty of examples of publicly held companies that -- or publicly traded companies that are doing great partnership work with community colleges.

MS. BLUMENSTYK: Is there something that the community college side can do to make that work better?

MR. COLBORN: Well, so, I think number one is to be able to tell a story about outcomes and results. And though, you know, I think from the privately held companies you don't hear a lot of talk about return on investment, my sense is that being able to have that backing in larger companies where you have to go to the CFO's office and say why this is an important investment of company resources. So I think it behooves us to have a little bit more. And who's from the manufacturing institute that has the ROI calculator? So that's a great development, that's really good, and we should have more of that, I think, in order to get the publicly traded companies.

MR. BAILEY: I think maybe you're from Michigan, so you might know more about this. I mean, historically, the community colleges have had a great relationship with the auto manufacturers. Now, I think that is complicated a little bit now

because I know in many of the programs that they had before which were associate degree programs, they're now bachelor's degree programs, so that some of the relationships that the colleges have had, they have either revolved or have gone away. So I'm not sure what -- if Chrysler has some kind of training program with the community colleges I'm not sure how they're calculating that ROI, but they're certainly extensive. So I guess I would say that -- I mean, there are certainly many examples, as John said, of cases where colleges work together.

MR. COLBORN: If I can one other thing, which is I think there is increasing conversation about treating talent pipelines more like supply chains and that's a conversation the U.S. Chamber of Commerce has been leading, but I've been hearing it independently from company recruiters and talent specialists, which means that they tend to be concentrating on institutions that seem to be able to deliver folks with the right skills in the right quantities; that they are really trying to set expectations, do better expectation setting through their so-called supply chain with educators. And I think all that then speaks to this need to be very focused on the outcomes and being able to sort of deliver to specification, if you will.

MS. BLUMENSTYK: And if the colleges can get themselves pass gagging on that phrase, "supply chain," and thinking about their students.

MR. COLBORN: Yeah, right, fair enough.

MS. BLUMENSTYK: That's a cultural problem actually.

MR. BAILEY: I thought it was great in the previous panel talking about the role of employers in providing training because I think that we've gotten to the point where there's less employer training. I think, historically, we've seen that employer training as a direct relationship between the amount of education that the person has and the amount of employer training that they get. So if you have a master's degree, you

know, you'll get tons of employer training, but if you have an associate degree you get much less.

So I do think it's in -- I was reading something in *The Guardian* the other day and they said there's a skills gap and employers couldn't find anyone, so they did something unusual. They got somebody from McDonald's and they trained them and that person now is doing a great job. And I said, so we've gotten to the point where like it's an unusual strategy that employers are going to provide training to workers?

(Laughter) So I do think that's -- I need to think about that when we hear about the skills gap stuff, and so I really applaud the previous panel for emphasizing the importance of that because I think that's something we've lacked here or we haven't put enough emphasis on that and another reason why I think it's difficult to really get a broad apprenticeship program.

MS. BLUMENSTYK: Okay.

MR. WEST: And I'd like to applaud --

MS. BLUMENSTYK: Yeah, with that, what's old is new again and we'll have to wrap this.

MR. WEST: I'd like to applaud this panel.

Thank you very much. We really appreciate your participation.

(Applause)

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