

RELEASE: Gottheimer Outlines Vision for Future of Technology Jobs in New Jersey

Middle Skill Education Key to Filling Skills Gap

PARAMUS, NJ -- Today, Congressman Josh Gottheimer (NJ-5) spoke with local business leaders at a tech forum, where he outlined his vision for the future of technology jobs in New Jersey.

From the Stryker Manufacturing Laboratory at Bergen Community College, Gottheimer discussed opportunities for private firms and public education institutions to work together to create a workforce prepared with the technical education necessary to fill New Jersey's middle skill jobs.

According to Manpower Group's Talent Shortage Survey, 44% of employers cite the absence of technical skills as the most significant barrier to fulfilling their needs.

"To create good-paying jobs, growth, and innovation in North Jersey, we need to rapidly transform our state. It turns out that in New Jersey, there are more high- and low-skill workers than most employers need, but not nearly enough qualified middle-skill workers. We have an employment, or skill, mismatch. Let's help fill more of those middle-skill jobs by focusing on "middle skill education," **said Congressman Josh Gottheimer**. "Jersey's got the goods. Now it's just a matter of what we make of it."

Emilio Sanchez, Senior Director for Business Development at Stryker, said, "Stryker is built on innovation. Our technology is on the far end of innovation. Here at home, we have the latest and greatest technology. It's not numbers, it's practical science. Persons like myself will engage with industry and education with institutions like NJIT and local colleges to basically integrate industry into the thought process of students and education. STEAM provides a wonderful education to many career paths."

Below: Congressman Gottheimer outlines his vision for future technology jobs in New Jersey.

I'm delighted to be here again at Bergen Community College's Stryker Manufacturing Laboratory talking about one of my favorite topics – the steps we can and should take to make New Jersey and the Fifth District, once again, the innovation and growth capital of the United States.

I'm also here to say that if we don't rapidly transform our state – especially when it comes to creating job opportunities, reinventing education, rebuilding infrastructure, and cutting our taxes and unnecessarily burdensome regulations– we are going to be confronting major problems as our economy continues to shift in the face of wave of technology.

Personally, I love technology and the THT sector. After law school, I worked at the FCC, the Federal Communications Commission, on telecom, media, and technology policy, where I led the Office of Public-Private Initiatives and then I went to Microsoft in Corporate Strategy, where

I was deeply involved with our growing cloud business. I also spent time at the Center for Information Technology Policy at Princeton University. From my perspective, there is no reason why New Jersey can't be in the mix when we talk about our nation's 21st Century centers of technology.

Now, I know what you're thinking ... New Jersey, the innovation and growth capital of the world? What about Silicon Valley? Seattle? Then there's Rt. 128 Corridor in Cambridge, Silicon Alley in Manhattan, and the Triangle in North Carolina. How do we get ourselves into the mix?

Actually, New Jersey was Silicon Valley before there was a Silicon Valley. Back in 1870, Thomas Edison took all his money and invested in an empty factory building in Newark, where he set up his first workshop. A few years later, he moved to a new laboratory in Menlo Park, New Jersey, and, in 1877, created the world's first phonograph there. By the following year, he was known as "The Wizard of Menlo Park," with visitors from across the country coming to New Jersey to see his demonstrations. Of course, within another year or two, Edison and his team invented the light bulb; and later, in his new lab in West Orange, the first motion picture camera.

When Bell Telephone needed a place to anchor its research – it located in New Jersey, at Bell Labs – and invented everything from satellite communications to lasers to the cellular telephone. Its scientists earned eight Nobel Prizes – more than any other research facility in history.

As the great inventor Alexander Graham Bell said, "When one door closes another door opens; but we so often look so long and so regretfully upon the closed door, that we do not see the ones which open for us."

In New Jersey, we've spent a lot of time careening at the closed doors. It's time we look for the ones that are opening.

Here's a truth many might be surprised to know: New Jersey – by itself – has the 8th largest economy in the United States. 10,000 manufacturers operate in our state. Diapers.com and Jet.com were both born in our state. So were Audible.com and ThorLabs. Huge manufacturers like Unilever and Pinnacle Foods have both headquarters and R&D centers in New Jersey. All these companies are all still operating and thriving here.

The back end of the entire New York Stock Exchange is out of Mahwah. Several of the top medical device companies, utilizing the latest R&D, are headquartered here in my District – including, of course, BD and Stryker, not to mention some of the top Pharma labs in America, like Johnson & Johnson's, are based here in our state. We lead the world in life sciences and had biotech before there was an official space. According to Deloitte, New Jersey is home to sixteen of the fastest growing tech companies, including Eagle Pharmaceuticals in Woodcliff Lake.

In Newark, the CEO of Audible, Don Katz, recently launched a fund to invest in and attract more early stage startups. It's called Newark Venture Partners, and it's a \$50 million pool established to attract seed-stage tech companies to come to an "accelerator" in Newark – essentially a fancy

workspace with mentors coming in to help these companies “accelerate” the growth of their businesses. It’s a newer type of venture capital fund, and it serves not only to help entrepreneurs build their businesses, but also to catalyze development in New Jersey’s technology ecosystem.

Don has also offered housing subsidies to persuade employees to move to Newark, and founded a program, Audible Scholars, which offers internships, financial assistance, and mentorship to students in Newark schools.

When Don first moved Audible’s headquarters to Newark, he was told he would lose 25% of his workforce. Instead, Audible is the fastest growing private sector employer in Newark. He believes in New Jersey, just like Wal-Mart did when they decided to put their technology center in Hoboken, led by Marc Lore, the founder of Jet.com.

And several New Jersey cities, led by some folks here today, are hosting regular “meetups,” or homegrown gatherings of tech entrepreneurs to promote growth from within, including the NJ Tech Meetup in Hoboken and the Tech Meetup in Jersey City with more than a thousand members.

We also have some of the smartest minds in the country, ranking second in the “Chance for Success” education index and third in K-12 achievement. And we have the highest concentration of scientists and engineers per square mile in the entire world. We’re seventh in number of Fortune 500 companies and second in median household income.

Yet, there is another side to this story, reflective of an unfortunate reality when it comes to our state and our innovation story.

Besides all the great numbers, we lag the rest of the country in a number of key ways. We are 49th or 50th in terms of business friendliness. Over the last 10 years, our 2.8% economic growth rate has lagged behind the 3.4% national growth rate. Slower growth means fewer jobs. It means less opportunity. It means that our children often leave the state to find work or better opportunities, even though we have some of the fastest broadband in the country and top companies and schools to raise families. In fact, for every two people who move into New Jersey, three people leave. According to Census data, from 2000 to 2013, the number of 22-to-34-year-olds living in New Jersey decreased by 2.3 percent, even while the number of people in this age bracket increased by 6.8 percent nationally during the same timeframe.

But even if this weren’t the case – even if we were growing like Oregon, or Austin, or California, or Colorado – we would still need to change.

Because the future is coming at us fast, and if we don’t change fast, we will be left behind.

So, we need policies to make us more innovative, our workers more ready for the future, and our state better prepared for growth – growth that creates good-paying jobs, in tech, life sciences, and beyond, and encourages people to join the workforce and have a chance to build a good life, here in New Jersey -- raise a family, own a home, and create something that will last.

Other states aren't standing still. So, let's talk about some critical areas where I think New Jersey can and must do better in attracting new innovators and job growth to our state.

Let me start by talking about the kind of jobs we need to fill – and the type of education that's needed. According to a recent study, while some people are having trouble finding the jobs they want, 40% of employers globally are having difficulty filling positions.

It might surprise you to know that the number one category of hard-to-fill jobs is not computer engineer or data scientist – but “skilled trades” – electricians, carpenters, welders, plumbers, and the like. The number three category is sales representatives. The number five category is technicians, and the number 6 category is drivers.

It turns out that in New Jersey, there are more high- and low-skill workers than most employers need, but, according to Mckinsey, not nearly enough qualified middle-skill workers. Middle-skill jobs are those that require more education and training than a high school diploma, but less than a four-year college degree – technicians, machinists, registered nurses, the list goes on. Take, for instance, someone who can operate robotics equipment to build a new knee replacement part at Stryker or BD.

As work on the assembly line gets increasingly high tech, from packaging products to welding, to stocking shelves and picking product, robotics have the potential to make manufacturing safer and more cost-effective – but for the foreseeable future, there will always need to be a skilled technician operating that robotic equipment.

So, there is an employment or skill mismatch at play – some people, even those with four-year degrees, have a hard time finding jobs, while many employers have middle-skill openings they can't fill. According to Manpower Group's Talent Shortage Survey, 44% of employers cite the absence of technical skills as the most significant barrier to fulfilling their needs.

What's interesting is that when it comes to the technology sector, people presume that what we need are people with degrees in science, engineering, and mathematics.

Don't get me wrong – it is critical that we continue to prioritize STEAM – Science, Technology, Engineering, Arts, and Math -- education nationwide – and we need those jobs. I remember when I was at Microsoft that we simply couldn't fill the programmer jobs. Here in the US. Just too much demand and not enough supply.

Just this past week, I had the pleasure of meeting a young constituent, Ella Feiner from Ridgewood, who was named a top 40 finalist in the nation's most prestigious science competition for high school seniors, the Regeneron Science Talent Search. Students like Ella give me hope that the U.S. can maintain its competitive edge in developing new technologies and solving the hardest scientific problems facing humankind. And, as a young woman, Ella gave me hope that our state and national efforts to get more women and girls excited about STEAM, and on the path to those jobs, is working.

While we must continue to push science, engineering, and math, my point is that STEAM education and jobs alone won't get us there. As the economy has moved from, say, basic manufacturing to services and advanced manufacturing, we have not trained enough technicians to fill those jobs.

We need to invest in our universities, but we also need to ensure that our colleges, two- and four-year, community, public and private, are turning out graduates that are employable. We need to make sure that students know what skills they will need for jobs that are expected to become available – not when they go to the employment office before graduation, but when they are first considering what college to attend.

Consider medical coders, as just one example; It is consistently ranked as one of the hardest middle-skill positions to fill, with 29% of healthcare employers listing it as one of their three hardest-to-fill jobs. There just aren't enough certified medical coding graduates.

One solution: let's help fill more of those middle-skill jobs by focusing on “middle skill education.” If we provide training for people to fill positions where clear skills gaps exist, we can put a lot of people in our community to work. Investments in our community colleges and these programs can really pay off. They provide both a pathway to higher education and the training we need to maintain the highly-skilled workforce to attract new jobs. They cost much less than traditional universities and they generally allow people to commute – saving students money and allowing them to help with responsibilities they may have at home.

Here in the Fifth District, for example, Sussex Community College has twenty-three degree programs, including programs in science and technology – and yes, there is a Medical Coding & Billing Program – preparing students for careers in everything from graphic design to programming, or to go on to four year degrees at New Jersey's universities.

In North Jersey, Felician University is offering a range of degree programs on cybersecurity to prepare the next generation for this growth sector. Meanwhile, Sussex County Community College and Thorlabs, led by a true visionary, entrepreneur Alex Cable, are working together on continued education for employees, so that his company, the largest employer in Sussex County, remains competitive worldwide.

Even our high school students are in the game. Students from Bergen County Technical Schools' Applied Tech campus -- which is housed here on BCC's campus -- get to use this Stryker lab, taking classes here. Stryker sends representatives to help structure robotics lessons to teach the skills necessary to thrive in the middle-tech workforce. In October, I was blown away with what these high schoolers had accomplished when they showed it all to me. It's a perfect example of how New Jersey private companies can partner with educational institutions at all levels to build our workforce.

We also have high schools and technical schools in nearby Passaic, Sussex, and Warren Counties with programs focused on job training for advanced manufacturing, computer science, and IT. My kid's grammar school even has a Coder Dojo on some weekends; most of our middle and high schools have makers spaces and robotics classes and competitions. It's incredible.

The bottom line: We need to do a better job of training for the existing hard-to-fill jobs, especially middle-skill jobs. And we need to continuously look to the jobs of tomorrow.

A report recently released by McKinsey found that up to one-third of all jobs worldwide could be wiped out by automation over the next 13 years. And between 75 and 375 million people may need to switch not only their jobs, but also the kind of work they do, by 2030.

This is scary stuff and it's rightly causing great unease in communities across the country. There have been countless articles written about how the driverless car could literally end the need for America's 3.5 million truck drivers. Standard desk jobs aren't safe, either – tax preparation has already become an automated process for many Americans, and according to a study by Deloitte, more than 100,000 jobs in the legal sector – primarily paralegals and legal assistants – have a high chance of being automated over the next 20 years.

But, as automation fuels productivity and economic growth, the report also says that the demand for new work and workers will continue to grow, which will help offset the initial displacement of workers. And, as we discussed, many of these new jobs will be in fields you don't ordinarily think of as technology today – fields like health care, infrastructure, and energy.

One way to think about this is that twenty-five years ago, businesses hired people just to type letters, stamp them, and mail them. A manager could generate only a few letters a day. Word processing was then introduced as a way to save money writing letters, but something else happened entirely. As it got easier to communicate, people did more of it.

Today, you might get hundreds of emails, texts, and social media communications a day – even thousands. The job of typist disappeared, but the power of the communicator exploded. This is just one small example among many of how technology can displace workers – but also empower workers to be more productive, which, in turn, increases the value of the skilled employee – while creating new industries out of whole cloth.

Which brings me back to my point. No one – and I mean no one – has any idea what many of the jobs of the future will be. No one, for instance, in 1995, predicted that “social media manager” would be a thing – it's now a high-demand position – or that a banker would need to understand Bitcoin, or that an insurance claims adjuster would need to fly a drone. But that's where we are.

This has huge implications for education and our workforce.

For one thing, people need to be prepared be educated throughout their lives, and not just coming out of high school. The average person currently changes jobs ten to fifteen times over a career, far more than in the past. We can only expect that trend to accelerate.

And while we don't know the precise parameters of what those jobs will be – we know they will be digital. I read a recent report that said 32 million workers are employed in jobs that classify as "highly digital," but more than twice that many people -- 66 million -- hold "moderately

digital" jobs. This category of jobs is where we should be investing in education to prepare our workforce for an increasingly digital future.

The McKinsey report compares the transition we currently face to the nationwide shift in the early 1900s -- from a largely agricultural to an industrial-services economy. But this transition may be even more jarring, because it will require the retraining of many middle-aged Americans for entirely new professions, not just young adults seeking opportunity. We need to be prepared, here in northern New Jersey.

Recognizing this new reality, Fairleigh Dickinson University is partnering with corporate clients to identify the training and education needs of the region and continuously updating its curriculum in response. They partner with companies like Becton Dickinson to provide training opportunities with world-class leaders in the Pharmacy and Health Services Industries. The New Jersey Department of Labor and Workforce Development has even awarded FDU with a grant to create a Talent and Development Center to increase the school's ability to provide employment and training opportunities in New Jersey.

Nearly half of all businesses are now training employees for new jobs within their system, and forward-thinking businesses are reaching out to partner with educational institutions. For example, Infor, a regional company, is working with the New Jersey Institute of Technology. Students who enroll are guaranteed internships and many of them are offered jobs.

Cognizant, a Fortune 500 professional services company headquartered in Teaneck, announced last month the formation of a new nonprofit foundation not only to fund STEM education and skills programs, but also initiatives designed for high school graduates, community college students, veterans, and others in the workforce looking to gain technical skills for middle-skill jobs.

We need the private sector to generate more innovative, public-private measures like this one to address the skills gaps. And we need all of our colleges and universities to embrace, not reject, education that helps students learn hard skills they can use in the workplace. We should be regularly assessing and predicting the technical requirements required for students to succeed in industry, and insisting that credits and financial aid be provided for actual real-world education, not only theory. There is already legislative progress being made on career and technical education programs, historically called vocational education.

Last year, I voted for the Strengthening Career and Technical Education for the 21st Century Act, which passed the House last summer. The bill would limit federal intervention and give states more flexibility in determining how to spend the roughly \$1 billion per year of federal funds for career and technical education. It would also streamline the process for states to receive those funds – and we are working to claw back those resources to help in our District and State.

My office has also started to work closely with employers on these items, and I applaud the efforts of the private sector to take the lead on technical education. These are public-private partnerships at their best and I'm working with MEP, our colleges, and businesses to make more of these joint efforts happen. They are win-wins. I will be holding a Middle Skill Tech Jobs

Summit early this summer with our local businesses and colleges to discuss how we make more of these partnerships happen.

Seton Hall has a Division of Continuing Education and Professional Studies for job seekers of all ages, offering a diverse set of credit, degree, professional certificate, and job training programs.

At Bergen Community College, employers can arrange for services like customized training specifically to help develop workers for jobs that are available right here and now. Stryker Orthopaedics has contributed \$100,000 to Bergen Community College's student scholarship initiative, and we're standing today in the Stryker Manufacturing Laboratory, a 3,200 square-foot simulated manufacturing laboratory that gives students first-hand experience with a high-tech manufacturing work flow.

In Northvale, Amy Eskilson, president and CEO of Inrad Optics, the leading photonics manufacturer, continues to grow. She works with New Jersey's manufacturers and has noted that, "public-private partnerships are essential in bridging this workforce chasm." What better place than New Jersey, Amy has argued, which is home to 52 colleges and universities?

If we want more growth, we need the trained workforce here to compete. We need to do more of what's beginning to work.

It's no accident that Silicon Valley is in the heart of the University of California system. California invested big time. We need to give tax incentives to our businesses to train and hire these college students – to give them old fashioned training and internships. I plan to propose legislation to encourage communities to do just that – more public-private partnerships.

We need an educated workforce from top to bottom. By growing middle-skill, career and technical education programs, we provide growing companies with a community they can invest in. When Don Katz moved Audible to Newark, they thrived despite the naysayers, because they embraced the urban core there. Now, he and others from Silicon Valley are investing in Newark, encouraging millennials to move and stay here by incubating entrepreneurship and hosting wifi speeds that put New York City to shame.

Amazon, as we know, plans to create 50,000 headquarters jobs in a new location with average pay over \$100,000. Amazon is looking for proposals on where to locate. A key requirement from their RFP: "A highly educated labor pool . . . and a strong university system."

Whether or not Amazon chooses New Jersey – and I believe Jersey is a no-brainer for them -- we need to invest and reform education, at all levels, and with all types of skills, now to make sure that the next Amazon – or Facebook – or Google – demands to be right here.

While I can't get to every issue in this speech, every other ingredient that is key to a thriving technological sector in our state, I plan to spend more time in the near future talking about the other necessary factors. That includes our technological infrastructure, high-speed broadband connectivity in all of our communities in Bergen, Sussex, Warren, and Passaic Counties – not only in our schools and libraries, but also in our homes. Our children can't

compete for 21st century jobs if they have 20th century tools. Many of our towns in Sussex and Warren counties just don't have the broadband infrastructure – and I'm working with the towns and providers to address the gap.

We also need to make sure that our physical infrastructure and transportation is tip-top; otherwise, we won't be able to attract companies to locate here or stay here. And, as a country, we need an open internet and a competitive marketplace.

Of course, being competitive also means ensuring that our tax structure and regulatory systems aren't barriers to entry. Right now, they often are. Our taxes are some of the highest in the country and we tend to turn off businesses with our excessive red tape and delays. We need to streamline and cut our taxes, as we show off all the things we love about our state – our beautiful and safe communities, our top-notch grammar, middle, and high schools, smart and successful people, and our incredible location.

In short, in the words of Thomas Edison, "If we did all the things we are capable of, we would literally astound ourselves." So, let's go out and astound ourselves. Jersey has the goods; now, it's what we make of it. Thank you, God bless you, and may God continue to bless the United States of America.