



WPI

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100 Institute Road
Worcester, MA 01609-2280 USA

Worcester Regional Chamber of Commerce
Keynote speech – WPI President Laurie Leshin
Date: Dec. 12, 2014
Location: DCU Center, Worcester

Good afternoon, everyone-

Thank you, President Johnson, for the warm introduction.

Before I start my remarks, I wanted to offer my condolences to Susan Mailman, the Chamber's board chairperson. As many of you know, Susan's father, Ted Coghlin, passed away Wednesday night. So, it's with a heavy heart that I stand before you today. Ted was an incredibly loving family man, skilled businessman, generous philanthropist, and devoted youth leader. More than anything, Ted was a man so deeply committed to vocational education and the thousands of students in this great city.

Ted was one of the driving forces behind Worcester Technical High School, where several years ago he championed the construction of the new \$100 million school. As chairman of the Worcester Vocational Schools Advisory Board and president of the Skyline Technical Fund, he secured more than \$4 million in donations, which helped leverage more than \$20 million in matching funds.

In fact, when President Obama delivered the Commencement address at Worcester Tech last June, he called out Ted by name.

President Obama said, "Ted is known as the 'godfather' of Worcester Tech, because about 10 years ago he set out to make this school what he knew it could be—a place where businesses train new workers, and young people get the keys to a brighter future."

The success of Worcester Tech is a reflection of Ted Coghlin and the city is all the better for Ted's good works. **He really embodies the spirit of Worcester and this region. The Coghlin name has been synonymous with excellence and innovation for more than a century.**

In a commemorative book printed by Coghlin Electric Company highlighting the company from 1885 to 1985, Ted recalled that his grandfather, John P. Coghlin, "always wanted to be first with the newest, with the most modern, the most innovative.

"As I understand J.P.," Ted continued, "he saw an opportunity and he seized it."

We can all say the same about Ted Coghlin. In many ways, Ted Coghlin represents why we're all in this room today, striving to remain committed to this city and to this region to drive commerce....

-- So that companies can grow and prosper...

-- So innovation and ideas can flourish...



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-- And so young people can seize opportunities and learn valuable skills that last a lifetime.

Ted Coghlin was a 1956 WPI graduate. And we're so proud of that. Just as we were proud to honor him in 2008 with WPI's Humanitarian Leadership Award. But Ted doesn't belong to WPI. He belongs to all of Worcester – all of this state – which can take pride in knowing that Edwin B. "Ted" Coghlin Jr. made an incredible difference in so many lives. May he rest in peace, and may we all carry on his legacy of making a deep and lasting positive impact in our communities. We will miss you, Ted, and we are so sorry for your loss, Sue.

It's my great pleasure to be with you all today, and I thank you for extending the invitation allowing me to deliver the keynote address at the 139th Annual Business Meeting of the Worcester Regional Chamber of Commerce. Wow...I love that. I grew up in Arizona, where the buildings are like 20 years old. This is amazing...I love the history of this place.

Special thanks to **Tim Murray**, your president and CEO, and to his excellent staff for their hospitality. And it's good to see a number of other leaders with us today.

Just five weeks ago tomorrow, I was inaugurated as WPI's 16th president. What an incredible honor. And with that comes the realization that there's a lot of hard work ahead both for WPI and the Worcester community at large. But let me first say that my experience in Worcester has been outstanding. From the Chamber to the businesses to the great people of this city, I feel truly welcomed here. I've met a good many of you here today, and you've made me feel at home....so, thank you.

Now, by a show of hands, how many of you have a connection to WPI? Sons or daughters attend or some other link to the university? Make sure you clap the loudest, OK?

As I stand before you today – a room full of service providers, manufacturers, and other small businesses – I recognize the challenges you face in your day-to-day dealings. You're looking to stay fresh and to innovate. You have customers, vendors, and business commitments to consider. And you want to make an impact. In a way, we're a lot alike.

And challenges have a way of allowing us to reach our true potential. **It's that challenge that drove Winfield Wyman (WPI Class of 1882) and Lyman Gordon (WPI Class of 1881)** – to create forge maker Wyman Gordon more than 100 years ago in Worcester. And challenges are what drive our current faculty and students to make an impact in this great city.

Today I'd like to focus on a few key areas. I'd like to share with you my vision for WPI amid some very real challenges taking place in higher education. I'd also like to touch on some key innovations taking place right here in Worcester, address the power of



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partnerships, and talk about the importance of making a global impact while remaining committed to Worcester.

VISION

During my inaugural address on Nov. 8, I laid out a vision for where I'd like to take WPI. And that vision revolved around the notion that WPI should commit itself to achieving the goal of becoming the premier global polytechnic. Some of you were at that inauguration, and have heard this. Still, if you'd indulge me for a moment, I'd like to share that vision with you today – along with some ideas later on about the collective impact we can make on this region.

As some of you may know, WPI was founded on the premise of theory and practice. To those principles I am committed to adding a third tower. And that tower is called 'Impact.' Today, the world needs us to focus on impact and outcomes, now more than ever. These are six core areas – I call them pillars – that we are establishing at WPI.

First, to become the premier global polytechnic, we must expand **global reach and impact** in communities locally, nationally, and worldwide. We intend to train the next generation's Science, Technology, Engineering and Math leaders – or STEM leaders – by making off-campus projects possible for every student. Second, we will elevate our already **distinctive undergraduate programs** by incorporating technology into the teaching and learning experience. Next, we will sharpen our focus on our **research enterprise and PhD programs** to ensure that they are larger, of higher quality, and more distinctively WPI. Fourth, we must seek to expand and enhance our **online graduate and professional education** opportunities to ensure that we have lifelong learners. Fifth, we must work to create a thriving engine of **innovation and entrepreneurship** that creates impact. And finally, we need to ensure that WPI has the physical **capacity** and structure in place – from staffing to technology – to support our efforts in a positive, productive work environment.

Tall tasks, right? You're not kidding. We're in the process of incorporating these six areas into our collective DNA. And it's not easy. But you know what? Science and technology isn't easy. Being a business leader and owner – as you know – isn't easy. But like anything that is important in life, challenges are what drive us.

CHALLENGES IN HIGHER ED

I understand that one of the key challenges facing Massachusetts right now is a talent shortage in the state. An editorial in *The Boston Globe* on Dec. 1 pointed out that the public college system will fall about 60,000 graduates short of what is needed to keep the state competitive by 2025. The report also noted that, "Massachusetts needs more than 5,000 computer science and information technology graduates right now.



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I'm eager to tell you that WPI rises to meet that challenge every year. We churn out thousands of brilliant science and engineering minds every year, many of whom are working in this state.

And from where I sit, it's not all doom and gloom.

Worcester has nine colleges and universities producing outstanding students – every single year. Higher education is the second largest industry in Worcester and is responsible for providing thousands of jobs, billions in annual spending, and – of course – educating the next generation of the workforce.

In fact, a study by this Chamber of Commerce earlier this year found that **54 percent of the degrees granted by Worcester colleges are in the STEM field** – Science, Technology, Engineering, and Math. That means something. What it means is that students are increasingly seeing the value of STEM and how it will propel their futures. There are other attributes as well right here in Worcester: a strong communication and transportation infrastructure, a thriving medical and life sciences community, and a plethora of service provider firms eager to work with early-stage tech entrepreneurs.

So then the question becomes, “**How can we collectively make an impact in our city, in our state, and in our world?**” Let me highlight just a few ways that WPI is striving to make an impact in these areas in Worcester and beyond.

RECENT WPI INNOVATIONS

One of the most visible examples of our innovation is seen at WPI's Gateway Park, an 11-acre mixed-use life sciences-based campus, which we believe is one of the top facilities in the state. WPI has committed \$65 million for the Life Sciences facility at the flagship building, and \$5.5 million to construct Fire Protection Engineering labs and WPI business school.

We're very proud of our Biomanufacturing Education and Training Center at Gateway Park, a 10,000-square-foot, pilot-scale, fully functional biomanufacturing facility that provides a hands-on environment for training and education. **To date, 22 companies have participated in BETC programs, including five corporate-sponsored programs with Biogen Idec, Genzyme, Shire, Abiomed, and Immunogen.**

And we have a host of innovators on our campus as well.

- Two of our biomedical engineering professors at WPI – **Glenn Gaudette and George Pins** – are the founders of a company called **VitaThreads**, which will deliver a **fibrin suture that will initially be used for wound closure**. This company is a prime example of research in the lab that went into a business incubator and is now moving into more space with real product potential. The company is currently located at Gateway Park in Worcester, and is planning on expanding here in Worcester.



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- Another one of our faculty members –**Yan Wang** – is working with **Eric Gratz**, who received his PhD from WPI earlier this year, to explore the creation of a **lithium battery recycling technology product**. The pair received a National Science Foundation I-Corps grant, which enables them to receive coaching and start-up advice. And in three days, they will fly to Los Angeles to present to a faculty of coaches and advisors, mostly from the University of California at Berkeley. If things go as planned, we could be looking at one of the first companies of this kind in the nation.

Now this is pretty special on a couple of levels: First, to think that the formation of such a company had its origins at WPI is cool, right? And secondly, I now have a process to recycle the battery in my Tesla when it dies.

- A third example of innovation comes from **Greg Fischer**, an associate professor of mechanical engineering and robotics engineering at WPI. Professor Fischer is developing an **MRI-guided robot that accurately destroys brain tumors** without damaging surrounding tissue. A research team at UMass Medical School brought their expertise in MRI imagery to the research and also coordinated and conducted clinical tests of the robotic system. We just learned that he has received interest from a venture firm to establish a company. We are in the final stages of completing a license with an investor firm to form a new company around this technology.

In addition to these success stories, WPI's Office of Intellectual Property and Innovation reports that nearly 20 technologies have been licensed to area companies in recent years. That's real progress and something we're very proud of at WPI.

And I'm pleased to tell you that our graduates live and work right here in Massachusetts. We have 16,000 alumni who live and/or work in Massachusetts. In fact, nearly 60 percent of the WPI Class of 2013 work right here in the state, enriching their workplace and their communities.

And by now, many of you are very familiar with WPI's top-notch Robotics Engineering program and Fire Protection Engineering department. WPI Robotics research is funded by NASA, the National Science Foundation, the National Institutes of Health, the Defense Advanced Research Projects Agency, the Air Force Research Lab, and the Office of Naval Research. Next June, WPI – led by our 6 foot 2, 350-pound humanoid robot named WARNER – will participate in the DARPA Robotics Finals in California. When it comes to growth industries, robotics is atop the list. In fact, Massachusetts ships more robots than any other state in the country.

In many cases, our research is driven by stories that deeply affect our community. In the aftermath of the December 1999 Worcester Cold Storage fire that claimed the lives of six Worcester firefighters, WPI Fire Protection Engineering researchers invested 15 years in research and development that has helped spark a national focus on the need for new



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lifesaving technology in the fire service. We're proud of our efforts, and look forward to building on these programs.

VALUE OF SUPPORTING PUBLIC SCHOOLS / TRAINING AND RETRAINING PROGRAMS

But I also recognize it's not just about WPI and our success stories. The reality is too many young people across the state and too many adults don't have the skills and training to advance in today's work world.

That's why WPI – in partnership with the Massachusetts Manufacturing Extension Partnership – announced back in February that it gave a \$2.5 million grant in the form of software and educational materials to dozens of Massachusetts vocational high schools to allow students to gain skills on advanced high-tech machinery.

In fact, a version of the program software and curriculum to be used by high schools has been used for the past several years at WPI. Since 2009, WPI undergraduate students and MassMEP have trained long-term unemployed workers how to use computer numeric control (CNC) machines at our Washburn labs. **Imagine an 18-year-old freshman teaching a 50-year-old unemployed technician new skills. It's real, and it's happening at WPI.**

Last February, Katie Picchione (*Pick-e-oh-nee*), then a 19-year-old WPI sophomore who helped train the unemployed workers, noted that she gets a lot out of her experience. **"This program,"** Katie said, **"definitely gives me perspective on the importance of continuing your education at any age."**

I could not have said it any better. And I can't begin to tell you how rewarding that is to me....**It's this type of partnership that allows WPI to make an impact** – both at more than 100 vocational high schools across the state, as well as in the lives of countless unemployed individuals. And I can't help but see that the work Katie and her peers are doing is already advancing one of our pillars – the one where we talk about the value of being a lifelong learner.

GLOBAL – AND LOCAL – IMPACT

At the outset of my remarks, you heard me say that I'm striving for WPI to become the "global polytechnic." But what exactly does that mean? And what does it look like?

Perhaps the most significant global contribution WPI makes is in its pioneering project-based curriculum of experiential learning that has transformed the lives of thousands of students over the course of more than 40 years. WPI currently has more than three dozen global project center locations on six continents.

More than 2/3 of our 4,000 undergraduate students have worked to apply their STEM knowledge to elevate communities at these project sites. Right now, our students are in this country and abroad in locations including Worcester; Washington, D.C., New York City; Cape Town, South Africa; Melbourne Australia; San Juan, Puerto Rico; Panama



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City; and Venice. And they are working to meet pressing local needs with impactful solutions. As two recent examples, our students have helped residents of nearly 4,000 unelectrified settlements in Namibia develop renewable energy businesses, and improved access to HIV/AIDS education and treatment in Bangkok, Thailand.

While we have our eyes focused on global initiatives, we will always remain committed to Worcester. And that's why in recent years, many students have elected to do their project work in Worcester as a means of supporting the city in which they are being educated and to help solve specific challenges.

The **Worcester Community Project Center** – located in the Printers Building on Portland Street near the Worcester library – focuses on community empowerment and environmental responsibility as students tackle both grassroots environmental issues as well as public sector challenges facing the region.

Since 2000, WPI students have completed 140 projects in the city of Worcester. At this moment, students are participating in five different community engagement projects with sponsors Ascentria Care Alliance, Blackstone Canal District Alliance, The Department of Environmental Protection, Dismas House of Worcester, and the Worcester Art Museum.

I'd like to highlight two projects currently under way. WPI students, in collaboration with Worcester Earn-A-Bike, have worked to create an adaptive bicycle for Worcester area adults with Down syndrome, cerebral palsy, and autism spectrum disorder. They are also working with Dismas House of Worcester to facilitate reduction of energy costs to increase the financial stability of low-income housing organizations in Worcester.

On a related note, it's very heartening for me to know that WPI students spend untold hours of community service here in the city. Every year, students perform approximately 100,000 hours of community service activity in Worcester. If you were to put a dollar value on that, well...let's just say it's priceless.

IN THE FUTURE

In closing, I recognize that many of you here today are small business leaders and employees trying to stand out amid crowded industries. You're continually looking to innovate and stay relevant.

As you evaluate your own business needs in the year ahead and beyond, I encourage you to find out how you want to grow your own business. What steps do you need to take to get there? Is there a way you can partner with WPI on a particular initiative? Could one of our students serve as an intern in one of your companies? Can we collaborate on training for your employees?

It's a very exciting time in this city. And so, how do all of us make a difference here in Worcester?



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I like to think about this in the following way, and some of you may have heard me say this before. I tend to think that, 50 years ago, there weren't a lot of people sitting around San Jose, California, saying 'Everybody wants to live in San Francisco,' and, 'No one wants to live here.' And 'What are we going to do to elevate our region?' I think what really elevated the region was a phenomenal partnership between companies, industry, innovators in the private sector and the great minds at a university called Stanford there.

Here, we have 35,000 college students and nine colleges, and an extraordinary opportunity to have an education and private sector partnership to elevate this region and to keep the innovators here. So, I know I speak for all of my colleagues from WPI when I say that we are here to do everything we can to keep innovating in Worcester and to keep driving our region forward. I hope all of you will enjoy me and us on this great and noble quest.

In order for Worcester and Central Massachusetts to remain at the forefront of innovation and prosperity, we need to **outeducate, outinnovate, and outcollaborate** everybody else. And by working closely with all of you, we will do just that.

I want to thank you all again, and I wish you a very happy holiday season, and a very prosperous and innovative new year.

Thank you, all.