

First Meeting of the Commission

Monday, April 23, 2018 1 Ashburton Place, 21st Floor | Conference Room 3

Agenda

3:00 p.m.	Reconvene following signing of Executive Order and swearing-i			
	ceremony. Welcome and introduction of Commission members.			

3:10 p.m. – 3:50 p.m. Outline of Commission process and review of Governor Baker's goals for the Commission. Dr. J.D. LaRock, *President and CEO, Commonwealth Corporation & Chair, Commission on Digital Innovation & Lifelong Learning*

- · What is the context surrounding the Commission's work?
- Who is the Commission trying to help?
- What are the education and training strategies on which the Commission will focus?
- What are end goals and products of the Commission?
- Discussion by Commission members
- 3:50 p.m. 4:40 p.m. Meeting workforce priorities through digital and lifelong learning approaches a summary of early conversations with employers.
 Raija Vaisanen, *Director of Research, Commonwealth Corporation*
 - Perspectives on the health care sector. Oswald Mondejar, Senior Vice President for Mission and Advocacy, Partners Health Care, Inc.
 - Perspectives on the manufacturing sector. Joanna Dowling, Center for Manufacturing Technology
 - Discussion by Commission members
- 4:40 p.m. 5:00 p.m. Next steps for the Commission. J.D. LaRock
 - What would you find helpful to support your work on this Commission?
 - Committee meetings and future meeting dates



Members of Governor's Commission on Digital Innovation and Lifelong Learning April 2018

J.D. LaRock Commission Chair President and CEO Commonwealth Corporation	Linda Boff Chief Learning Officer General Electric		
Rosalin Acosta Secretary Massachusetts Executive Office of Labor and Workforce Development <i>Ex officio</i>	Jennifer Davis Carey Executive Director Worcester Education Collaborative		
Jay Ash Secretary Massachusetts Executive Office of Housing and Economic Development <i>Ex officio</i>	Susan Cicco Chief Human Resources and Communications Officer MassMutual		
Jim Peyser Secretary Massachusetts Executive Office of Education <i>Ex officio</i>	Joanna Dowling President Custom Group/Center for Manufacturing Technology		
Carlos Santiago Commissioner Massachusetts Department of Higher Education <i>Ex officio</i>	Jean Eddy Chief Executive Officer American Student Assistance		
Chris Gabrieli Commission Vice Chair Chairman Massachusetts Board of Higher Education	Joseph Fuller Professor of Management Practice in General Management Harvard Business School		



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Michael Horn	Don Kilburn		
Co-Founder and Distinguished Fellow	Chief Executive Officer		
Christensen Institute	UMass Online		
Laurie Leshin	Marjorie Ringrose		
President	Senior Program Officer		
Worcester Polytechnic Institute	Smith Family Foundation		
Michael London	Christina Royal		
CEO and President	President		
Examity	Holyoke Community College		
Patricia Meservey	Sanjay Sarma		
President Emerita	Vice President for Open Learning		
Salem State University	Massachusetts Institute of Technology		
Oz Mondejar Senior Vice President for Mission and Advocacy Partners Continuing Care, Inc.	Mary Sarris Executive Director North Shore Workforce Investment Board		
Reinier Moquete	Michelle Weise		
Chief Executive Officer	Senior Vice President for Workforce		
Advoqt Technology Group / Latino STEM	Strategies and Chief Innovation Officer		
Alliance	Strada Education Network		



Launching in April 2018, Governor Charlie Baker's Commission on Digital Innovation and Lifelong Learning will examine innovative, digitally-enabled approaches to postsecondary education and training and recommend new steps to increase the availability of affordable, flexible, employer-relevant learning for more people in Massachusetts throughout their lives.

The Commission will focus on how Massachusetts can best meet the education and training needs of a substantially greater share of our state's residents and employers in an economic landscape marked by accelerating technological change, profound shifts in the nature of work, and the growing need for workers to engage in lifelong learning.

Charge of the Commission

Building on the approaches highlighted in Governor Baker's November 2017 convening on Digital Innovation and Lifelong Learning at the Massachusetts Institute of Technology, the Commission will focus on how the following approaches could be used to expand postsecondary education, training, and lifelong learning for a greater share of Massachusetts learners:

- Online and competency-based approaches to education and training;
- Programs that are **co-designed by employers** and education/training providers;
- **Experiential learning models**, such as co-ops, internships, apprenticeships, and job-embedded learning;
- **Systems of support** for adult and other learners, such as soft skills development programs and coaching;
- Systems that enable learners to receive **credit for prior learning** acquired in education, training, and work.

The Commission aims to recommend ideas and approaches that will:

- Enable Massachusetts to educate and train a **much larger population of learners**, especially adult workers and learners who have not prospered in traditional education and training;
- **Meet the needs of employers** who struggle to find qualified candidates for entry-level and middle-skill jobs;
- Respond to the impact of **automation and technology** on jobs and the economy of Massachusetts;
- Provide the basis for what an **organized system of lifelong learning** might look like.

Structure of the Commission

The Commission is organized and operated by Commonwealth Corporation, Massachusetts' public-private corporation that works at the intersection of education, workforce development, and economic development. It consists of 20 appointed members, drawn from the business, higher education, workforce development, education technology, and scholarly communities. The Massachusetts Secretaries of Education, Labor and Workforce Development, and Housing and Economic Development, and the Massachusetts Commissioner of Higher Education, serve as additional *ex officio* members of the Commission. It is chaired by the President and CEO of Commonwealth Corporation.

The Commission will have two committees: one focusing on how the approaches mentioned above can be amplified in existing postsecondary education and training settings, and another focusing on new ideas and models for education and skills development. The committees will meet during months the full Commission does not meet. Commission members are invited to join one or both committees.

Timeline and Deliverables of the Commission

The full Commission is expected to meet at least four times in 2018, with additional meetings for committees. Its work will culminate in a report and action plan, submitted to Governor Baker by October 2018, summarizing the Commission's work, methodology, findings and recommendations on each of its priorities. The Commission is authorized to operate during the entirety of 2018, with the opportunity to extend its work, if needed.

The Third Education Revolution

Schools are moving toward a model of continuous, lifelong learning in order to meet the needs of today's economy.

by Jeffrey Selingo The Atlantic | March 22, 2018

When the giant Indian technology-services firm Infosys announced last November that it would open a design and innovation hub in Providence, the company's president said one of the key reasons he chose Rhode Island was its strong network of higher-education institutions: Brown University, the Rhode Island School of Design, and the Community College of Rhode Island.

In a higher-education system that is often divided between two- and four-year colleges and further segregated between elite and non-elite institutions, it's not often that a community college is mentioned in the same breath as an Ivy League campus. Nor is a two-year college seen as a training ground for jobs in the so-called <u>creative economy</u>, which include industries such as design, fashion, and computer gaming that typically require bachelor's degrees.

But the Community College of Rhode Island, New England's largest two-year college with more than 15,000 students, is working hard to change the tired image of two-year institutions as places for highschool graduates who can't hack it on four-year campuses or for the unemployed trying to figure out what's next. Led by Meghan Hughes, a relatively new president with an academic background in art history, the college is overhauling its approach to workforce development by better aligning programs with the state's economic priorities than is currently the case.

"Like many colleges, we tended to be more reactive and slower to respond to training needs," said Julian Alssid, who started last summer as vice president of workforce development. The college would typically wait for displaced workers to come to the campus to receive retraining instead of intervening before they were laid off. It had advisory groups of employers to provide guidance on certificates and degrees, but they met infrequently, so it would take months or sometimes years to tweak existing programs or start new ones.

Now, the college is in the process of reorganizing its continuing-education division to build ongoing partnerships with companies to keep it current on industry trends and operate training programs responsive to and in sync with the labor market. The alliance with Infosys is a good example of this new strategy as the college works with the company to figure out how the school can help in recruiting and training 500 workers who will make a median salary of \$79,000.

The problem with many existing workforce-training programs, Alssid said, is that employers, colleges, and local workforce boards responsible for doling out federal funds "all operate separately, calcified in their own silos." In this new economy, he added, "those worlds will blend together."

The world of work is undergoing a massive shift. Not since the dawn of the Industrial Revolution in the 18th and 19th centuries and the Information Age that followed in the last century has the scale of disruption taking place in the workforce been so evident. An oft-cited 2013 study from the University of Oxford predicted that nearly half of American jobs—including real-estate brokers, insurance underwriters, and loan officers—were at risk of being taken over by computers within the next two decades. Just last fall, the McKinsey Global Institute released a report that estimated a third of American workers may have to change jobs by 2030 because of artificial intelligence.

Previous shifts in how people work have typically been accompanied in the United States by an expansion in the amount of education required by employers to get a good job. In the early 1900s, the 'high-school movement' turned secondary schools into a nationwide system for mass education that provided training for life instead of small-scale institutions designed to prepare a select group of students for college. In 1910, just 9 percent of American youths earned a high-school diploma; by 1935, 40 percent did.

This expansion of high schools was the first wave in a century-long broadening of education in the United States in response to the changing needs of the economy. The high-school movement was "truly path breaking," wrote Claudia Goldin, a Harvard University economist, in a <u>paper</u> published by the National Bureau of Economic Research. "No other country underwent the transformation to virtually universal public secondary education" so early and so quickly. "Without the rapid rise of the high school," Goldin argued, "America could not have put the GI Bill of Rights … into immediate action after 1944 for American youth would not yet have graduated high school."

The second wave in expanding education for a changing workforce occurred in the 1960s with the "college-for-all" movement. In 1965, President Lyndon B. Johnson signed the Higher Education Act, which bolstered federal aid for higher education. Meanwhile, states built community college campuses and widened the mission of state teachers' colleges by adding a bevy of programs in all academic fields. Between 1970 and 2016, enrollment in higher education <u>more than doubled</u> from 8.5 million to 20.5 million students.

Now a third wave in education and training has arrived, argue economists, educators, and workforcedevelopment officials. The level of preparation that worked in the first two waves—adding more time to education early in life—does not seem sufficient in the 21st-century economy. Instead the third wave is likely to be marked by continual training throughout a person's lifetime—to keep current in a career, to learn how to complement rising levels of automation, and to gain skills for new work. Workers will likely consume this lifelong learning in short spurts when they need it, rather than in lengthy blocks of time as they do now when it often takes months or years to complete certificates and degrees.

With this third wave will come a shift in how workers perceive retraining, said Brent Parton, deputy director of the Center on Education and Skills at the think tank New America. "We tend to think of retraining now as something that follows a traumatic event—a job loss, for instance," said Parton, who served as a policy advisor in the U.S. Department of Labor during the Obama administration. "We're entering a stage where retraining will be the day-to-day world that people live in. It will be part of their daily life and a much quieter set of traditions compared with now."

One big worry, however, is that the arrival of lifelong education will only exacerbate the economic divide that already exists in the United States. Education levels in the U.S. are closely tied to income. Simply put: Rich kids are far more likely to graduate from college than are their poor and working-class peers. There's no reason not to believe that trend won't continue in this third wave of lifelong learning. It is likely to help workers who already have high levels of education get the training they need rather than assist underemployed or unemployed workers who need to upskill to keep a job or get a new one.

Simultaneous forces in the job market are driving this push toward lifelong learning. The first is automation and the widening divide between the lifetime earnings of high-school and college graduates. While experts predict that few occupations will ever be totally automated, most jobs are likely in the future

to have many of their basic activities performed by a computer. In its report, McKinsey estimated that in about 60 percent of occupations, at least one-third of activities could be automated by 2030. "The shift could be on a scale not seen since the transition of the labor force out of agriculture in the early 1900s in the United States and Europe," the report warned.

Second is the emergence of the gig economy, which is reshaping the traditional employer-employee relationship as more contractors and freelancers fill roles once reserved for full-time workers making good salaries. While the term "the gig economy" conjures up images of popular apps for temporary work, such as Uber and Task Rabbit, the <u>army of professional white-collar freelancers</u> is larger than that encompassing the services we can request on our smartphones. In <u>a 2016 study</u>, two economists, Lawrence F. Katz and Alan B. Krueger, found that all net employment growth in the United States since 2005 appears to have come from what they termed "alternative work"—that is, contract and freelance work, which has ballooned by more than 50 percent over the last decade.

Both trends in the job market have the potential to upend <u>the current federal workforce-training</u> <u>system</u> that is largely run by the government and depends on solid projections about future jobs with traditional employers. Automation adds "much more uncertainty about what jobs are in high demand," said Harry Holzer, a professor at Georgetown University and former chief economist for the Labor Department. "What might look like a job or skills in high demand today, might not be by the time someone is done training for a new job."

What's more, federal retraining programs deliver funds through local workforce boards, which operate one-stop centers where job seekers go for help largely to prepare for full-time work, not to become independent contractors or entrepreneurs. If more people are employed as freelancers in the future, workforce-development officials worry that it might be difficult for some workers to know when they need a new set of skills to remain employed.

One role traditional employers have always played is in the professional development of their workers. On a yearly basis, usually through annual performance reviews, employers would advise employees about the skills needed to keep their job or to receive promotion. In many cases, employers would suggest training programs and pay for them. But freelancers get no such guidance nor help on finding or paying for continuing education.

Policy officials maintain that the realities of the modern workplace demand that government-run jobtraining programs in the future play a different role. Rather than focus on routine skills that can be replaced by technology, job training needs to target key skills that complement technology, such as problem solving, teamwork, and communication.

At the same time, training must occur more regularly and less episodically than it does now in order to keep pace with the increasing churn of jobs. Already colleges are responding to this need by expanding noncredit programs; such courses can be up and running more quickly than credit-based programs can, and they take much less time to complete than do full-fledged degrees and certificates.

But those noncredit programs are small compared to degree programs, and most higher-education institutions still operate with a mentality that it's not their job to train people for a job, economists say. "What worries me," Holzer said, "is that the system today is not great at providing training to workers who need it, and the demand is only going to grow in the future with more workers, in more occupations."

The classic image of job retraining in the U.S. remains that of laid-off blue-collar factory workers learning new skills. But if greater numbers of white-collar workers with college degrees tap into the federal job-training system in the future, it risks collapse trying to take into account their training needs as it is also starved for money. (Federal training dollars have been slashed by 22 percent since 2009, and in his second budget this year, President Trump proposed further cuts.)

Increased funds for federal job-training programs will only come when white-collar workers use the benefits in addition to laid-off blue-collar workers. "It needs to be seen as a benefit for everyone," said Josh Copus, the chief operating officer of the National Association of Workforce Boards. "If the more advantaged [white-collar workers] don't use career centers, we're never going to expand the social capital and networks of those who do use them."

Experts agree that to adequately serve an increasingly diverse set of workers and industries, the current patchwork of federal training efforts needs reform. An important first step was taken in 2014 when Congress replaced the 1990s-era Workforce Investment Act with the Workforce Innovation and Opportunity Act. Among other things, the new law emphasized "career pathways," which offer workers a sequence of educational opportunities and credentials that they can earn as they work in progressively more advanced jobs. For example, instead of training to become a nurse, workers could first pursue certificates as nursing aides.

But further reforms are needed for the third wave of education and lifelong learning, so that training isn't seen as something that happens only when there is a shock to the economy, such as a recession or a massive factory layoff. One idea that has been suggested by economists and workforce-training officials: "work sharing," which allows employees to retrain while they're still employed. Work sharing is a program in place in more than 25 states in which employers reduce their workers' hours and pay and the states make up some of the lost wages. Right now, it's typically used as an incentive in an economic slowdown to keep skilled workers employed, but it can also provide workers the flexibility to improve their skills while in a job.

If training and education become a lifelong pursuit, the big question is how to pay for it. Many people enter the workforce already in debt from college. Student debt has doubled since 2009 to \$1.3 trillion. Given these circumstances, few people have money for further training. In response, some states offer Lifelong Learning Accounts, a 401(k)-like plan that allows employers and employees to contribute to an account for retraining purposes.

Michael Horn, a higher-education consultant who has written extensively on the future of training, <u>recently suggested</u> similar plans that he dubbed "renewable learning funds." They would be paid for by an alternative form of financial aid called <u>income-share agreements</u>. Such agreements provide students money to cover college costs, and, in exchange, students agree to pay back a percentage of their future income rather than take on a fixed amount of debt.

"Continual education is not just about paying for tuition," Horn said. "Training carries an opportunity cost in terms of lost wages, and so we need to figure out how to support some of their living expenses, too."

Faced with a skills gap, employers are increasingly working with community colleges to provide workers with both the academic education needed to succeed in today's workforce and the specific hands-on skills to get a job in their companies.

In the long race between education and increasing technology in the workforce, education has historically always won, according to Goldin, the Harvard economist. In other words, for much of the 20th century, simply having a college degree and, even better, an advanced degree, was seen as a key advantage in the job market. But it's unclear whether that dynamic will remain true in a job market undergoing massive changes. A college degree will certainly remain a differentiator in the future, but not just any degree, argues Alssid, the vice president of workforce development at the Community College of Rhode Island.

"While we don't know what skills will be required for the human-centric jobs of the future [such as health care, management consultants, and financial planners]," said Alssid, who has spent more than two decades in the workforce-development field, "we do know that these jobs will require a highly adaptable workforce that can think critically, creatively, and work collaboratively to find solutions to rapidly developing, complex problems."

Such skills, often referred to as "soft skills," are typically seen in liberal-arts graduates, but those individuals often lack the technical skills employers want. Alssid said a hybrid of liberal-arts and technical education is what is most needed in training programs to allow workers to better navigate the ambiguity of the future job market. That's the goal of his school's partnership with Infosys—to introduce liberal-arts students to technical fields that they might not have previously considered, while other programs will introduce the flexibility of the liberal arts to technical workers.

More than a century has passed since the universal high-school movement took off in the United States and 50 years since the college-for-all movement began. Those first two waves of education helped the U.S. build the world's most successful economy. Now it's clear a third wave in the evolution of education is needed to compete in a new economy in which learning can never end.

Setting the landscape: Trends impacting jobs, education, and training in Massachusetts and the US

April 2018



This is a <u>critically important</u> time in history for learners to obtain education and skills for indemand fields



Learners will enter a labor market where compensation and productivity have decoupled



Impact predominantly has been felt by low and middle-skill workers due to globalization & technology

Labor share trend, percent (1995-2009)



Employment share of middle-skill jobs has decreased substantially as well

Changes in employment share by skill level and gender in the US, 1983 - 2012



In Massachusetts, job growth has been almost exclusively limited to those with postsecondary degrees

Percent Change in the Number of Employed Individuals by Educational Attainment in Massachusetts, 2000 to 2012-2014



Individuals with lower educational attainment are dropping out of the workforce faster

Labor force participation rate for men ages 25-54 by Educational Attainment



data from January through May. Shading denotes recession.

Source: Bureau of Labor Statistics; National Bureau of Economic Research; author's calculations.

While MA is the most educated state in the US, we are experiencing declines in postsecondary enrollment

MA stands out as the most educated state in the US

2016 share of labor force with bachelor's degree or higher

▲ TOP FIVE

	50.2%		
	30.2 /0		
New Jersey			
4	15.2%		
New York			
4	3.7%		
Maryland			
	43%		
Connecticut			
42	2.7%		
US MEDIAN			
DE EO/			

But, college enrollment has decreased recently, with largest decline in CC



35.5%

Nationally, many four-year colleges have negative ROI

ROI and cost of US college attendance (without financial aid)



Total 4-year cost of attendance (000s)

Two-year programs often struggle to retain students

Six-Year Outcomes for Students Who Started at Two-Year Public Institutions



Looking ahead, automation could impact 80+ percent of workers



The scale and velocity of this transformation will be beyond what we've seen before

US workers displaced due to automation by 2030

of jobs (% of workforce)

53M (32%) 40M (24%) 15M (9%)

McKinsey analysis, 2017 Bain & Company analysis, 2018

Automation could displace workers 2-3x more rapidly than previous workforce transformations



Source: Bain & Company (2018); US Census Bureau, US Bureau of Labor Statistics, Bain Macro Trends Group

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We're already starting to see the business case for automation over human labor



Sources: U.S. Bureau of Labor Statistics; Industrial Federation of Robotics, *World Robotics: Industrial Robots*; expert interviews; BCG analysis. Note: Assumes an 8 percent rate of improvement in price and performance. Hourly rates for labor include benefits and overhead, an increase of about 50 percent over base hourly pay. All values shown in nominal 2014 U.S. dollars. ¹The cost is for a typical spot-welding robot system in the U.S. automotive industry. ²An example of a generic robotics system is ABB's IRB 2400.

³Includes other wood products.

We know which jobs will grow and shrink over the next decade in Massachusetts

Expected aggregate change in jobs in Massachusetts 2014-2024



And, these 'growth industries' are largely consistent with past growth seen in Massachusetts



However, many employers report difficulty filling open positions





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COMMISSION ON DIGITAL INNOVATION AND LIFELONG LEARNING

EMPLOYER PERSPECTIVES ON MEETING WORKFORCE PRIORITIES THROUGH NEW DIGITAL & LIFELONG LEARNING APPROACHES

APRIL 23, 2018

WHAT DID WE ASK OUR EMPLOYER MEMBERS?

 In what ways is your company utilizing digital innovation and/or lifelong learning strategies for your employees?

2. Think about (1) high-growth job categories at your company and (2) the job categories that are most important to your company's future. What are the most important skills you need employees to have or develop to do those jobs?

3. What are (1) the most common and (2) the most difficult obstacles your company faces in its efforts to train employees for the skills your company needs, and to partner with other entities to do so?

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THEMES

- Online learning can be useful, but does not always substitute for hands-on experience
- Training and education is best when it leads to flexible workers those who can travel along multiple pathways
- The level of adoption of online, digitally enabled or hybrid learning approaches varies by industry (manufacturing vs. health care)
- Successful partnerships of employers, education and training providers and the workforce system help to solve pipeline challenges (*i.e.*, Boston Healthcare Careers Consortium, Northeast Advanced Manufacturing Consortium)

WHAT DOES A SUCCESSFUL EMPLOYER & EDUCATION/TRAINING PARTNERSHIP LOOK LIKE?

- Employer involvement that is broad-based and deep
- Commitment to experiential learning opportunities
- Shared language re: skill requirements
- Nimble enough to meet speed of training / changing skill needs
- Customized approaches to meet individual business needs

FOR DISCUSSION

• What is your reaction to these themes?

• What employer partnerships do you know of that are strong and working well?

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