



READY FOR WORK

Leveraging the Madison Park Talent Pipeline

Greater Boston Chamber of Commerce

May 2019

Ready for Work: Leveraging the Madison Park Talent Pipeline

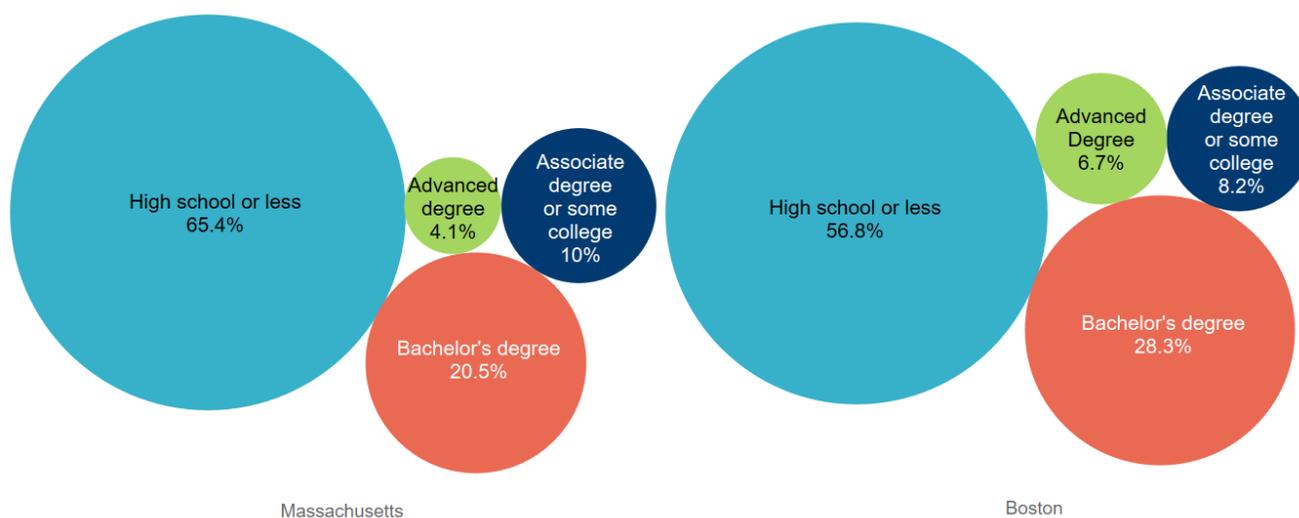
Executive Summary

Today, Massachusetts has a robust economy and job market. In the April 2019 monthly job report the Massachusetts monthly unemployment rate was 2.9 percent, the lowest since December 2000 and tied for the 11th lowest monthly rate since 1980.¹ While the economic boom has many employers focused on how to fill open jobs, it is imperative for policymakers to keep an eye toward the future and ensure there is a strong workforce pipeline.

Career vocational/technical education (CVTE) schools, like Boston's Madison Park Technical Vocational High School (Madison Park), are an important part of the state's current and future workforce development strategy. There are numerous career opportunities for CVTE graduates who chose not to pursue a traditional four-year degree, although CVTE curriculum also guides students into higher education or directly into the workforce and obtaining a post-secondary degree typically leads to higher wages.

In both Boston and Massachusetts, occupations requiring a high school diploma or less represent the majority of all annual job openings through 2026 (Figure 1).² Between 2016 and 2026, the number of jobs requiring a high school diploma or less is expected to grow by 120,000, or 6 percent, in Massachusetts and by 24,000, or 8.3 percent, in Boston. Many of these jobs offer annual wages in excess of \$50,000.³

Figure 1: Percent of Total Annual Job Openings by Education



There are many opportunities for students graduating from CVTE schools to find successful career paths right out of high school, however, students must have the in-demand skills that employers seek. This is especially true given that job growth is expected to slow in the coming years and workers will compete to fill jobs left by an aging workforce.⁴ Massachusetts can expect to experience job growth of 7.4 percent between 2016 and 2026, compared to growth of 12.1 percent between 2010 and 2017.⁵

¹ The 10 months with a lower unemployment rate were all in 2000. Executive Office of Labor and Workforce Development, Department of Unemployment Assistance, [Labor Force and Unemployment Data](#).

² Annual job openings are the total number of jobs available each year. Job openings can be due to job growth or the need to find replacement workers (due to workers exiting the labor market or transferring to a new job).

³ Annual wages are the mean wage earned each year as reported by the Bureau of Labor Statistics' Occupational Employment Statistics (OES) Survey. Executive Office of Labor and Workforce Development, Department of Unemployment Assistance. [Long-Term Occupational Projections](#), 2016-2026.

⁴ Job growth is the percentage change in the number of jobs from the base year to the projected year.

⁵ Bureau of Labor Statistics. [Current Employment Statistics](#). Table SMS25000006562000001.

By analyzing job report data for Boston and Massachusetts, Madison Park can prepare its students for a future career, higher education, or both. Labor market data, including information on job growth, job openings, and wages should influence institutional and individual decision-making. An understanding of job trends and required skillsets can help both school officials and families make better decisions about coursework and career pathways. Yet, examining job report data is only part of the blueprint for successfully connecting our education system to the workforce. Feedback from employers about required skillsets is essential.

After researching CVTE programs around the state, analyzing wage and job projections, and conducting interviews with employers across several industries, the Greater Boston Chamber of Commerce developed six recommendations that aim to evaluate and align programs with labor market trends, to provide Madison Park students with a competitive advantage on the job market, and to strengthen relationships with the business community.

Recommendations

1. Conduct a program audit

Madison Park, the district, and engaged stakeholders like the business community should evaluate all aspects of the school, including program design and curriculum; funding sources; student achievement and outcomes; professional development; and stakeholder engagement. This work will help to identify ways to align and engage with the business community.

2. Explore additional programmatic offerings

The school should use data (from this report and others) as a guide for evaluating new Chapter 74 offerings such as biotechnology, robotics and automation technology, electronics, and animal science/veterinary assisting. The school should also explore how to integrate skills that prepare students for the growing renewable energy industry.⁶

3. Focus on student competitiveness

Student competitiveness should be a central principle on campus. Competitive graduates possess in-demand skillsets and experience quality on-the-job training opportunities.

4. Prioritize soft skills

Soft skills should be prioritized to the same extent as technical skills. Novel methods for promoting soft skill development should be explored.

5. Develop constructive partnerships with employers

The school and business community should work to foster productive partnerships. Mutually-agreed upon expectations, guidelines, and goals are the underpinning of constructive partnerships.

6. Improve program marketing and information accessibility

Madison Park should develop an enhanced online presence that provides job report data, like the information in this report, to current and prospective students. This includes online content directed at employers to market the success of students and to promote further engagement with the school.

⁶ Chapter 74 programs are programs that meet the definition of vocational-technical education in Chapter 74 of the Massachusetts General Laws and have been approved by the Department of Elementary and Secondary Education. Chapter 74 programs also meet the requirements for CVTE programs under the federal Perkins Act. Massachusetts Department of Elementary and Secondary Education, [Office for Career/Vocational Technical Education](#).

As the only comprehensive CVTE school in the Boston Public Schools, Madison Park is in a unique position to serve as a talent pipeline for industries and employers across the region. By working with regional employers to tailor curriculum and experiential learning opportunities to the jobs and skills required for the future workforce, Madison Park can provide a competitive advantage to its students. The Greater Boston Chamber of Commerce can support this effort by convening its diverse membership and fostering stronger partnerships between Madison Park and the business community. **Ultimately, CVTE schools and Greater Boston’s employers have the same goal: a dynamic pipeline of competitive graduates who can fill in-demand jobs, begin prosperous careers, and drive our region’s continued economic success.**

Madison Park Programs & Opportunities

For students to be competitive and career-ready upon graduation from a CVTE school, it is essential for them to understand how their educational decisions will align to the needs of the larger labor market. Using state job report data, this section analyzes data on job growth, annual openings, and potential earnings for graduates from select CVTE programs offered at Madison Park. For the purpose of this analysis, programs are organized within their occupational clusters.⁷

Two data dashboards - [Massachusetts Job Outlook](#) and [Boston Job Outlook](#) - analyze Madison Park’s programmatic offerings within the context of the Massachusetts and Boston labor markets (Figure 2). Occupations closer to the lower-left corner have fewer projected annual openings and a lower average annual wage. Those farthest on the right have higher average annual wages but fewer projected annual openings.

In Figure 2, each arrow on the dashboard is an individual occupation. The color of the arrow represents the typical education level required for the occupation, as noted in the legend. Arrows facing upward indicate jobs with positive growth projections between 2016 and 2026 while arrows facing downward are jobs with negative growth projections.

Madison Park offers programs that provide students with the foundation to succeed in both higher education and the workforce. In particular, programs within the information technology services, health services, and construction clusters can offer students meaningful career opportunities – whether directly into the workforce or pursuing post-secondary education -- with especially strong job and wage projections. Between 2016 and 2026, the number of jobs in each of these clusters is projected to grow by nine percent or more in both Boston and statewide; each cluster also includes many opportunities with good wages. This section includes a detailed analysis of these occupational clusters.

Madison Park’s programs by occupational cluster

Arts and Communication

- Design and Visual Communications
- Graphic Communications
- Radio and Television Broadcasting

Business and Consumer Services

- Business Technology and Marketing
- Cosmetology

Construction

- Building and Property Management
- Carpentry
- Electricity
- Plumbing

Health Services

- Dental Assisting
- Health Assisting
- Medical Assisting

Hospitality and Tourism

- Culinary Arts
- Hospitality Management

Information Technology Services

- Information Support Services and Networking (ISSN)
- Programming and Web Development

Manufacturing, Engineering, and Technology

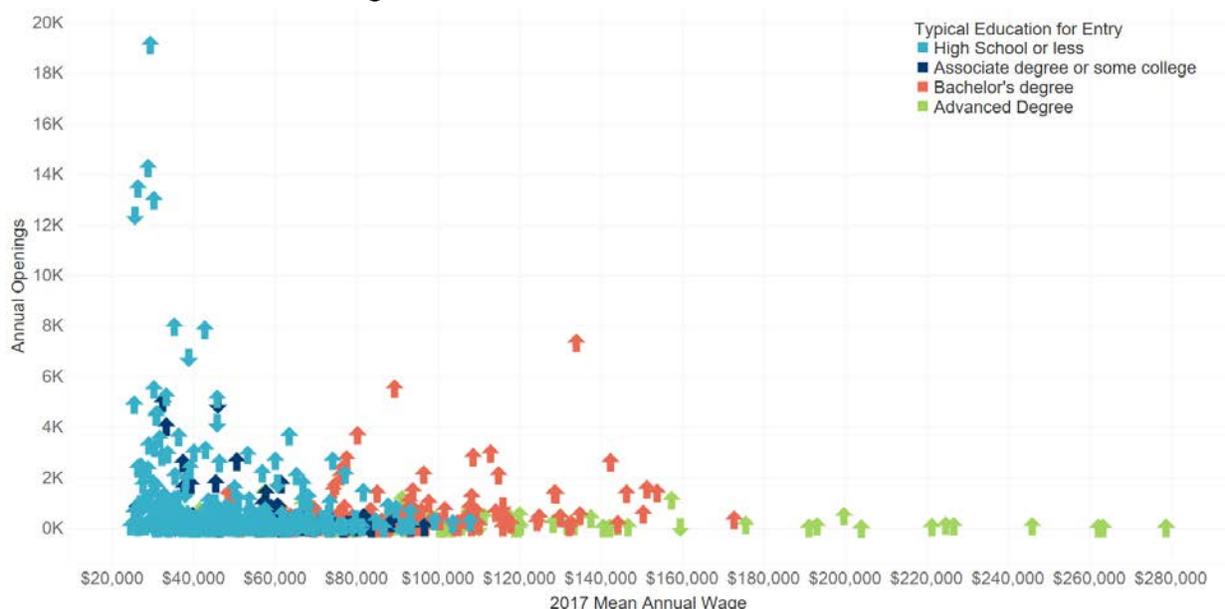
- Metal Fabrication & Joining Technologies

Transportation

- Automotive Technology
- Automotive Collision Repair & Refinishing

⁷ Occupational clusters, which are designated by the Massachusetts Department of Elementary and Secondary Education (DESE), are groups of similar CVTE programs and provide an organizational framework for programs across the state.

Figure 2: Massachusetts Job Outlook



Outlook for Tech, Health Care, and Construction Is Strong

Information Technology Services: Programming and Web Development and Information Support Services and Networking (ISSN)

Jobs in the rapidly evolving information technology (IT) services cluster – which includes the program and web development and the information support services and networking (ISSN) programs – are in-demand and typically offer high wages. Information technology services jobs generally have high-growth rates and a higher-than-average number of annual openings, especially in the Boston labor market (Figure 3).

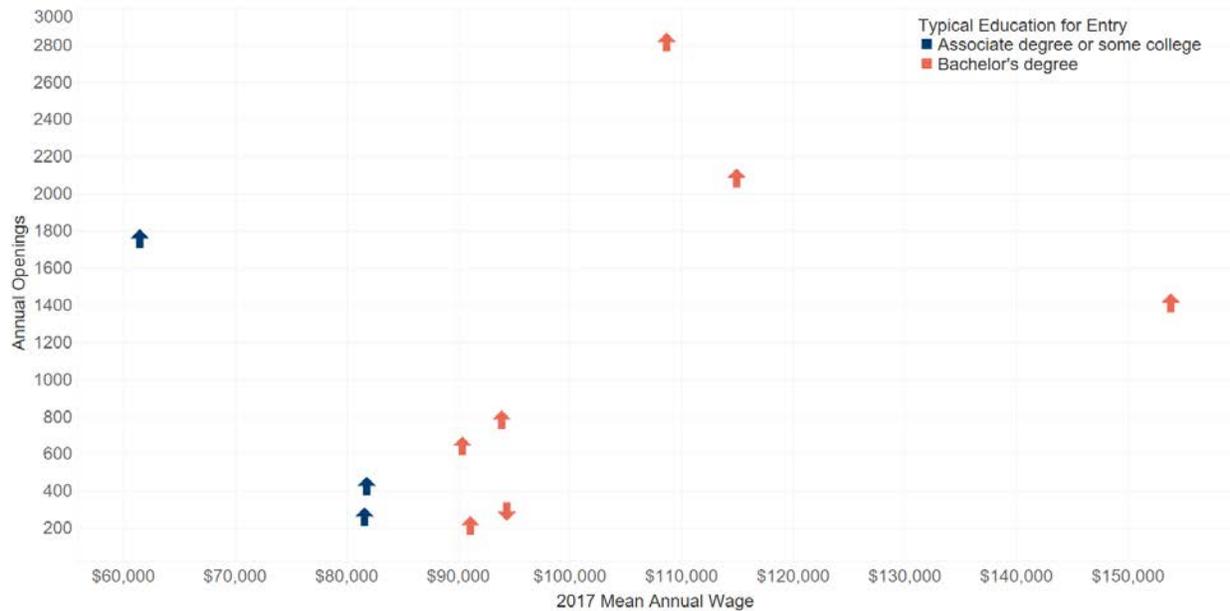
Computer user support specialists are expected to have among the largest number of annual openings of any job type in both Boston and Massachusetts. This job typically requires an associate degree. In both the Boston and Massachusetts labor markets, software developers (applications) are projected to see some of the fastest job growth and are expected to have some of the highest number of annual openings among bachelor's degree holders.

Jobs in this industry typically require some form of higher education, and most graduates from IT Services programs go on to attend a college or university. In fact, **in 2016, 73 percent of Massachusetts ISSN program graduates and 71 percent of programming and web development graduates went on to higher education, with the vast majority of them continuing their study in this field.**⁸

IT services curriculum should be tailored with an eye on both industry and higher education. Part of creating this type of curriculum will include a focus on in-demand skillsets. Employers in this field are seeking to hire people with both technical skills and soft skills. Foundational skills in IT services include knowledge of computer languages and an understanding of computer networks. Experience in cloud computing, artificial intelligence (AI) and machine learning, and cybersecurity are all increasingly sought-after technical skills in today's labor market. Desired soft skills include creativity, determination, computational thinking, ability to troubleshoot, and teamwork.

⁸ Massachusetts Department of Elementary and Secondary Education. [Graduate Follow-up Data: State Follow-up by Program](#). Class of 2016.

Figure 3: Jobs in the Information Technology Services Cluster



Health Services: Health Assisting, Medical Assisting, and Dental Assisting

As the state's population ages, the number of jobs within the health services cluster will continue to grow, presenting CVTE graduates with a variety of career paths. The health care and social assistance industry employs more Massachusetts residents than any other industry, and it represented almost 650,000 jobs, or 18.3 percent of all jobs, in 2017.⁹ It is also expected to be one of the fastest growing industries in the state, adding another 82,000 jobs, or 13.1 percent, between 2016 and 2026.¹⁰

A Madison Park education can lay the groundwork for students interested in health care careers. **The jobs aligned with Madison Park's health services cluster are expected to experience exceptional statewide growth or numerous annual openings for their education level (Figure 4).** These include registered nurses, personal care aides, home health aides, nursing assistants, and medical assistants. In Boston, diagnostic medical sonographers and medical assistants are projected to see some of the fastest growth among jobs typically requiring an associate degree.

As the state's population continues to age, additional job growth and new job types will continue to develop. Moreover, technological advances, including the further development and use of biometrics and telemedicine, will continue to alter the skills required of workers in the health care industry.

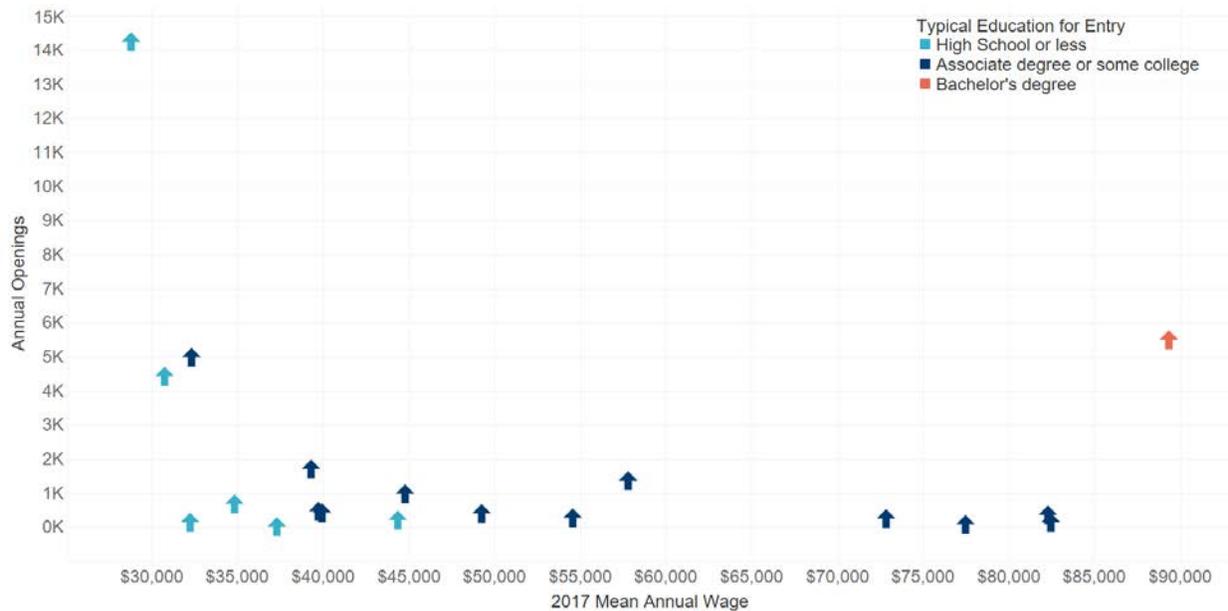
Many of the jobs in this occupational cluster require an associate degree or other post-secondary non-degree credential. Students that do choose to obtain an associate degree or a post-secondary non-degree award tend to have higher wages than those with a high school diploma, including those that become dental hygienists, licensed practical or vocational nurses, and radiologic technologists.

⁹ Bureau of Labor Statistics. [Current Employment Statistics](#). Table SMS25000006562000001.

¹⁰ Executive Office of Labor and Workforce Development, Department of Unemployment Assistance. [Long-Term Industry Projections](#), 2016-2026.

Employers in the health services industry seek to hire applicants with well-rounded math and reading skills in addition to a number of technological capabilities. To augment their educational background, competitive applicants have completed additional health services education outside of their CVTE curriculum, either concurrently or in a post-secondary environment. Employers also stress the importance of work-based learning opportunities, like internships. Competitive job applicants have experiences in a hospital setting, a clinic, or a nursing home. For soft skills, employers desire a passion for the health care industry, empathy, attention to detail, and conscientiousness.

Figure 4: Jobs in the Health Services Cluster



Construction: Carpentry, Electricity, Plumbing, and Building and Property Management

The construction cluster presents CVTE graduates with opportunities for both career and wage growth; although, faculty and administrators must be cognizant of outside factors, such as building booms and political decision-making, which can impact jobs in this cluster. More so than other fields, apprenticeships and technical schools are relatively popular post-graduation paths for students in this cluster that wish to continue their education.¹¹

There are positive growth projections for most of the jobs in this cluster of programs in both the Massachusetts and Boston labor markets, with many of them outpacing the state or city growth rates (Figure 5). However, competitiveness will be key for graduates looking to enter these fields as many of the higher-paying jobs have limited annual openings.

A number of factors are likely to affect jobs in this cluster, including our aging infrastructure, a shift to efficient heating and energy, more reliance on renewable energy sources, and advances in electric storage technology. However, some aspects of the construction field can be sensitive to political decision-making, which may affect its growth. For example, solar-photovoltaic installers is expected to be one of the fastest growing occupations over the next 10 years; however, the solar industry will be impacted by

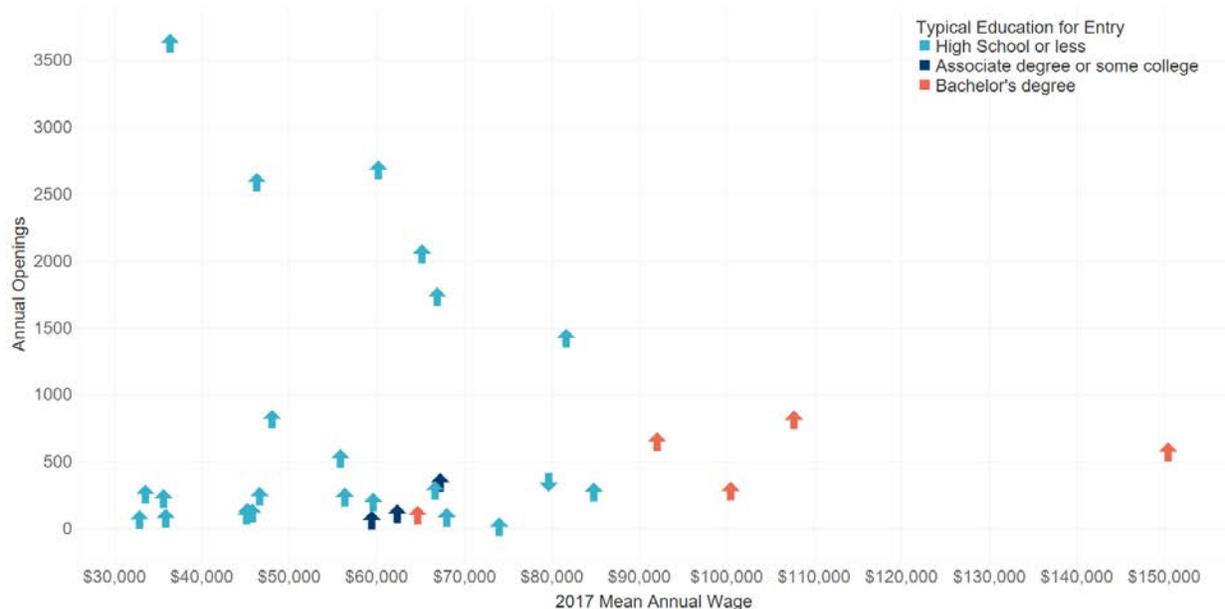
¹¹ Massachusetts Department of Elementary and Secondary Education. [Graduate Follow-up Data: State Follow-up by Program](#). Class of 2016.

procurements, subsidies, and regulations. Partnering with employers that possess an understanding of the political aspects of this industry is key.

For construction industry employers, partnering with CVTE schools is key to recruiting students into their workforce. Regional employers, wary of declining interest in careers in the construction industry, note that early mentorship of prospective workers is crucial to encouraging interest in the field at a time when students are less likely to choose occupations in the trades. Site visits and hands-on experiences with operating machinery not only serve as useful recruiting techniques for employers, but also provide students with the opportunity to foster their skills.

Employers note that many of the required technical skills in this industry can be further developed on the job and that they are committed to the continued development of integral skillsets. Like other industries, employers value soft skills, and entry-level applicants are expected to have a positive attitude, a willingness to learn, and the ability to successfully work within a team.

Figure 5: Jobs in the Construction Cluster



Programs Under Review and What to Consider

Madison Park is exploring whether to offer three additional programs: early education and care, criminal justice, and machine tool technology. Job projections for these programs are available to view in the [Massachusetts Job Outlook](#) and [Boston Job Outlook](#) interactive charts. In addition to assessing job report and wage data, it is necessary to convene employers in these fields prior to making any decision about the feasibility of these programs.

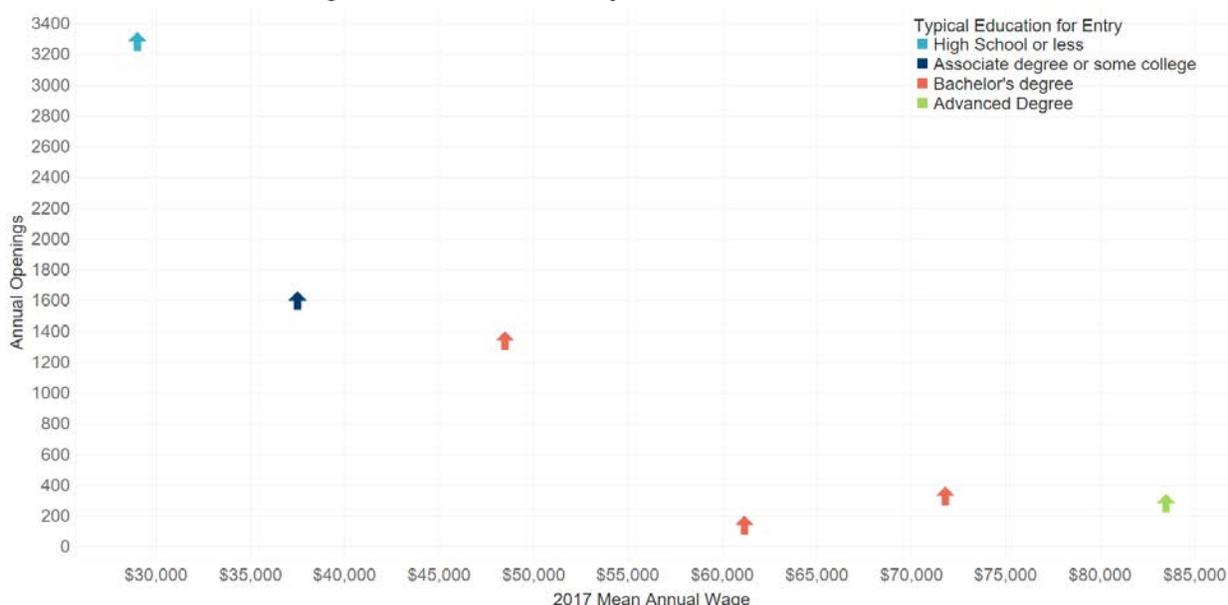
Early Education and Care

The early education and care program would train students in a growing field, but most career trajectories require post-secondary training. Several factors are driving projected demand in the early education and care pathway, including greater emphasis on early education and more households with parents working full-time. However, despite strong growth projections, these jobs typically provide lower wage potential unless students choose to pursue higher education which leads to more opportunities, such as a teaching role at an elementary school (Figure 6).

Prior to developing a new early education and care program, Madison Park leaders should consider convening employers and educators active in this space to obtain a better understanding of model curriculum and hands-on learning opportunities. For instance, other CVTE schools in the Commonwealth run day care centers or partner with early education and care facilities. For Madison Park to provide its students with a competitive advantage, it must consider whether it can provide these kinds of experiential learning opportunities.

Because skillsets are less transferable from this program to other careers, the school should identify post-graduation options for students and gear curriculum and programming toward those outcomes. Students seeking to move into higher education have multiple local options to consider. Both Roxbury Community College and Bunker Hill Community College offer an associate degree in Early Childhood Education, and Bunker Hill also offers a certificate program. Creating a new pipeline program with early education and care facilities would benefit students looking to move directly into the workforce.

Figure 6: Jobs in Early Education and Care



Criminal Justice

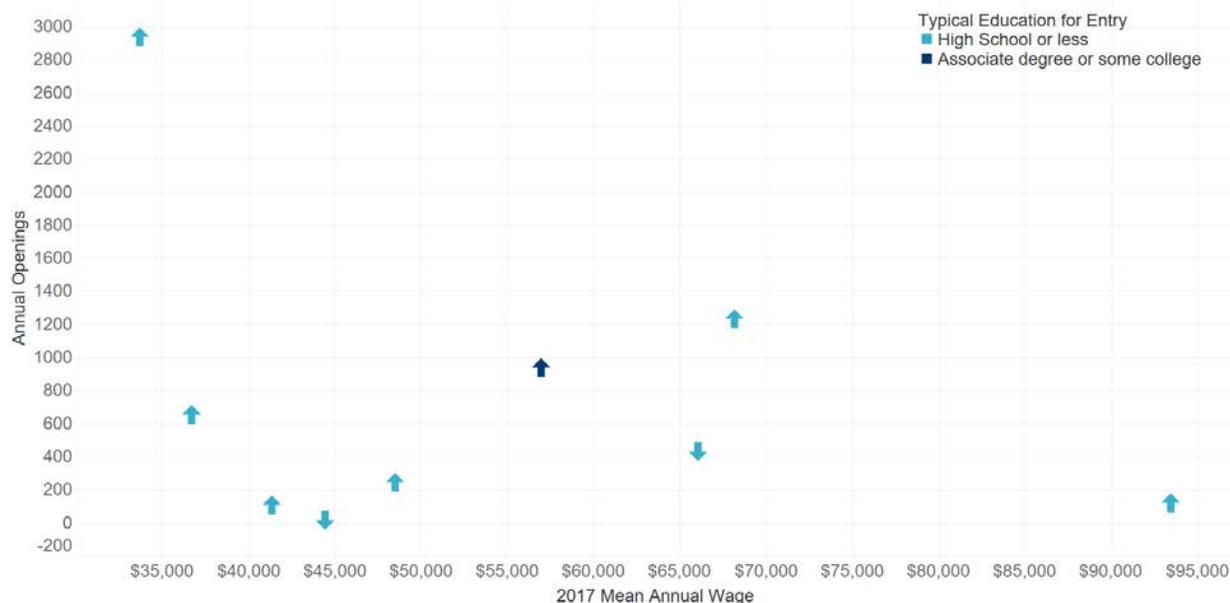
Many of the opportunities for graduates of a criminal justice CVTE program would allow them to go directly into the workforce at good wages. When considering adding a new criminal justice program, Madison Park should develop curriculum that aligns with the skills required for the jobs with higher wages and openings, including police officers and paralegals (Figure 7).

Many of the jobs in this field require a high school diploma, but higher education would allow for promotions and greater access to federal occupations so it is worth exploring partnerships with local colleges and universities. Both Roxbury Community College and Bunker Hill Community College offer an associate degree in criminal justice. Additionally, the University of Massachusetts Boston offers a bachelor's degree in criminology and criminal justice.

Madison Park could also serve as a talent pipeline for the Boston Police Department, the Massachusetts State Police, the Suffolk County Sheriff's Office, the MBTA, the federal government, private police forces (e.g., university police officers), and the state judicial system. As primary employers for graduates from a criminal justice program, these entities should be consulted prior to establishing a new program. A successful criminal justice program will require their partnership, both for curriculum development and experiential learning opportunities.

Employer partners can also provide insight into the impending changes to the criminal justice field. Technological and scientific developments – from unmanned aerial vehicles and automatic license plate recognition to biometrics and DNA – are expected to play a significant role in the future of criminal justice. Database management and the analysis of large data sets are also increasingly relevant for crime fighting efforts. At the same time, the daily interaction with the public required within this field necessitates highly-developed soft skills.

Figure 7: Jobs in Criminal Justice



Machine Tool Technology (Advanced Manufacturing)

Madison Park would benefit from additional analysis before deciding whether to add a machine tool technology (advanced manufacturing) program because the job report data suggests that graduates' options would be limited to a small number of low-wage jobs (Figure 8). However, the data in this field is less reliable because it does not reflect the shift from traditional manufacturing – with its focus on machinery, automotive, and steel – to advanced manufacturing.

Advanced manufacturing uses cutting-edge technology and materials to build new products and to reimagine how we build existing products. With its reliance on computers, automation, and high-precision techniques, advanced manufacturing has created an assortment of new jobs in an array of industries such as nanotechnology and aeronautics.

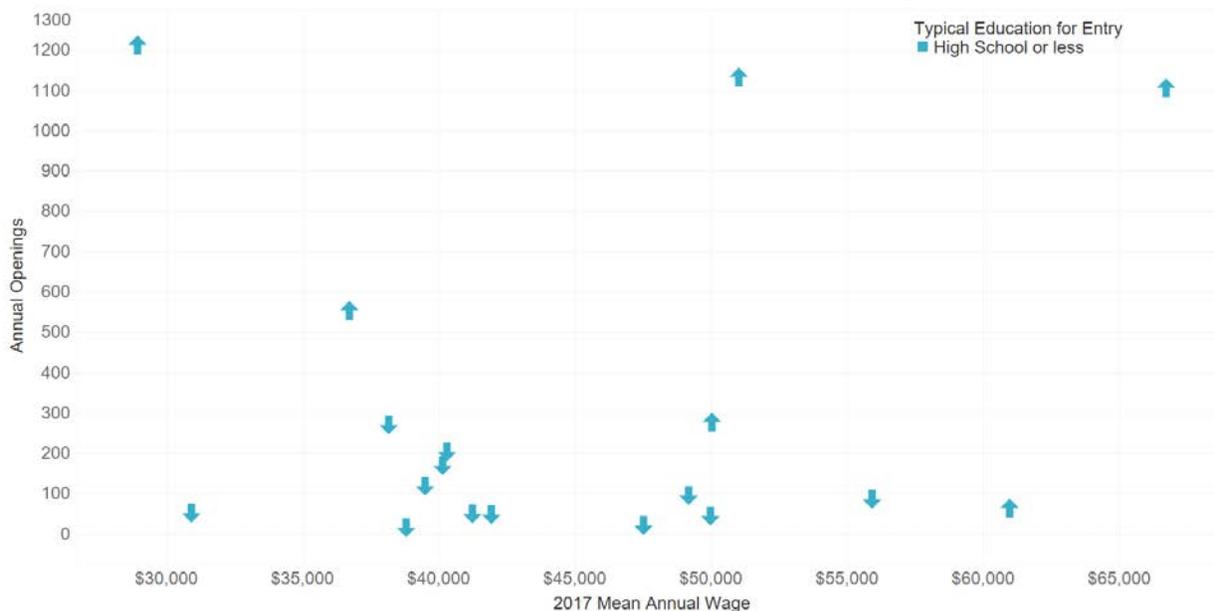
The manufacturing industry is expecting to see substantial change in the future as greater automation and artificial intelligence take hold. Increased automation is not expected to replace all employees; rather, it will be used to carry out certain tasks, leaving employees to run machines and handle other tasks. With automation, machines will become more networked within and across facilities. This will result in the collection of large volumes of data pertaining to machine efficiency, productivity, and more. As big data becomes increasingly useful for production and maintenance, the ability to analyze large amounts of data will be a crucial skill for future workers in this industry.

School leaders must also consider the pace of technological advances and near-continuous revisioning of skillsets. Employers seek to hire workers with both technological competence and math skills because these skills are adaptable.

An advanced manufacturing program must also account for employer accessibility. Employer partnerships are essential to a successful CVTE program because employers can provide real-time feedback to curriculum in a rapidly changing industry. Additionally, employer partnerships ensure students can learn using the latest, state-of-the-art equipment. Because so little manufacturing happens in Boston proper, Madison Park may need to look outside of the City for potential partners. Many of these employers may already have partnerships with CVTE schools in their home regions and transportation could pose a challenge for students.

Hands-on learning helps students develop both technical proficiencies and soft skills, including work ethic, teamwork, trainability, and punctuality and attendance. Ultimately, employers convey that the best indication of whether a CVTE school graduate is hireable in this field is whether they possess an industry-recognized credential. For a broader understanding of what it would take to establish this program, a visit to another CVTE high school in the Commonwealth would be useful. Employers cited Diman Regional Vocational Technical High School in Fall River as an example of a high-quality advanced manufacturing program that could serve as a model for developing programs.

Figure 8: Jobs in Machine Tool Technology



Recommendations

Madison Park has the foundation to prepare its students for successful careers in a range of industries. By exploring new programs, such as criminal justice and advanced manufacturing, Madison Park has already demonstrated its willingness to look toward the future and to make improvements with their student’s best interests top of mind.

This report synthesizes research on best practices in CVTE, interviews with regional employers, and an analysis of job and wage outcomes. Stemming from this, the Chamber recommends the following to guide future decision-making around programs, curriculum, and employer partnerships:

1. Conduct a program audit

Madison Park should undertake a schoolwide program audit to provide an in-depth evaluation of all aspects of each CVTE program at the school. The core components of the audit should include a review

of program design and curriculum; funding sources; metrics of student achievement and post-graduation outcomes; professional development opportunities; and the extent of stakeholder engagement.¹²

The audit should be guided by an audit steering committee, outside of the current advisory committees. The steering committee should include representatives from employers, parents, Madison Park, and the school district. This committee would also approve guidelines for the audit in advance and agree on program quality indicators.

It is our understanding that similar reviews were conducted in the past. The goal of this audit would be to ensure that employers, parents, the school, and the district are all working with the same information and, using that information, begin to identify ways for the school and business community to engage more deeply. We recommend performing this audit every five years.

2. Explore additional programmatic offerings

One result of a program audit would be to consider whether there are program offerings that better align with job opportunities and employer needs in Boston to replace programs that offer low wage potential, and few annual job openings. Based on job report data and information provided during interviews with employers, the Chamber identified four Chapter 74 programs and one skillset to incorporate into curriculum.¹³

The four Chapter 74 programs are biotechnology, robotics and automation technology, electronics, and animal science/veterinary assisting. Each program is described in more detail in the sidebars. These programs offer students transferable skillsets, good career paths, and abundant employment opportunities in greater Boston and in Massachusetts.

Additionally, Massachusetts is a nationwide leader in renewable energy and has the second highest percentage of clean energy workers in the United States.¹⁴ As the industry continues to mature, there will be even greater opportunities for jobs involving wind, solar, hydroelectricity, transmission, and battery storage. Many of the jobs in this field could be suitable for CVTE graduates, from wind and solar energy technicians to jobs focused on installation and distribution. Curriculum based on the renewable energy sector

Additional Programmatic Offerings

Biotechnology

The greater Boston region is home to over 500 biotechnology employers and consistently ranks highly nationwide in terms of biotech IPOs, research and development, and NIH funding. This translates into ample opportunities for employer partnerships and, ultimately, high-paying jobs for graduates from this program. There also are several opportunities for graduates seeking to pursue post-secondary education in this field, including a certificate program at Roxbury Community College and a biotechnology track bachelor's in science at the University of Massachusetts Boston, among others.

Robotics and Automation

Technology

The robotics and automation technology program prepares students to join the workforce in a rapidly growing field. Students in this program develop engineering and programming skillsets which would open many career opportunities. It is important to note, though, that many jobs in this pathway require a two- or four-year post-secondary degree. There are a limited number of robotics and automation technology Chapter 74 programs in the Commonwealth, so offering this program would be an advantage for Madison Park students, as they would be among the few CVTE graduates from this field each year.

¹² ExcelinEd. [Putting Career and Technical Education to Work for Students](#). November 2017.

¹³ Chapter 74 programs are programs that meet the definition of vocational-technical education in Chapter 74 of the Massachusetts General Laws and have been approved by the Department of Elementary and Secondary Education. Chapter 74 programs also meet the requirements for CVTE programs under the federal Perkins Act. Massachusetts Department of Elementary and Secondary Education, [Office for Career/Vocational Technical Education](#).

¹⁴ Massachusetts Clean Energy Center. [2018 Massachusetts Clean Energy Report](#).

can be incorporated into existing programs, including carpentry, electricity, plumbing, and building and property management.

Additional Programmatic Offerings

Electronics

In interviews, employers cited the electronics Chapter 74 program as a fundamental talent pipeline for an assortment of industries, including information technology, advanced manufacturing, computer electronics, and more. With new technological developments – from automation to the internet of things (IoT) – an understanding of the fundamentals of electronics will become an increasingly sought-after skillset. The electronics program at Shawsheen Valley Regional Vocational Technical High School was cited as a potential model program.

Animal Science / Veterinary

Assisting

An animal science / veterinary assisting program would point students toward careers in several of the fastest growing jobs in the state, including animal trainers, nonfarm animal caretakers, and veterinary technologists and technicians. Collectively, these three jobs are expected to top almost 13,000 employees statewide, a 23 percent increase between 2016 and 2026.

Although these jobs have lower wage-earning potential, they offer a good entry point into a career in the field for students who want to pursue post-secondary education. One potential higher education partner would be Massasoit Community College (Canton campus) which has a veterinary technology program.

noted the need for CVTE to better train students in soft skills.¹⁵ Soft skills cited by employers across all industries include communication skills (verbal, nonverbal, and writing), teamwork, responsibility, critical thinking, and independence.

A focus on soft skills can be integrated throughout the school day by staff at all levels. Experiential learning also provides students to learn these skills. By emphasizing soft skills, Madison Park can provide its students with an advantage in the job market.

3. Focus on student competitiveness

The overarching framework for Madison Park should be student competitiveness. A competitive graduate has the skillsets and hands-on experienced that not only makes them sought-after on the job market but gives them an advantage over other applicants in their field. Student competitiveness becomes exponentially more important as job growth is projected to slow over the next decade. In order to best serve its current and future students, decision-making around employer partnerships and new programmatic offerings should be done within a framework of student competitiveness.

Improving student competitiveness will require new approaches. One possibility is to expand the types of education and business partnerships beyond higher education institutions or regional employers. For instance, there are a variety of coding bootcamps in the city that could serve as unique partners for current students or graduates looking to enhance their software development skills. Madison Park could also explore the possibility of partnering with the new state-sponsored registered apprenticeship program. Launched in 2018, the state's registered apprenticeship program is underway in the technology sector and in the process of expanding into health care and manufacturing. Given that Madison Park's curriculum covers quite a few jobs in these sectors, it would be worthwhile to explore this opportunity for partnership.

4. Prioritize soft skills

Regardless of education level, employers cite soft skills as integral attributes for entry-level applicants. This is particularly important for CVTE schools: more than 97 percent of state employers in a 2015 survey

¹⁵ Dukakis Center for Urban & Regional Policy. *The Critical Importance of Vocational Education in the Commonwealth*. January 2016.

5. Develop constructive partnerships with employers

Making sure that the advisory committees for each CVTE program offered at Madison Park are filled with engaged employers is imperative to the success of that program. The Greater Boston region, and Massachusetts as a whole, is home to many of the world's best employers. Constructive partnerships with these employers would produce competitive and career-ready graduates. Employer partners will define required skills in rapidly changing industries to help shape curriculum and experiential learning. In addition to helping define curriculum, employer partners can expose students to state-of-the-art equipment, help students develop soft skills in a workplace setting, and provide professional development for teachers.

Developing partnerships with these employers requires mutually-agreed upon expectations, guidelines, and goals. With productive partnerships, both the employer and school benefit, and the students will graduate with a competitive skillset and industry connections before entering the labor force.

6. Improve program marketing and information accessibility

Madison Park can enhance its online presence by improving the information available to both students and the community. Students interested in attending a CVTE high school need information about programmatic offerings and potential job or wage outcomes. This data should be a component of Madison Park's informational and marketing collateral, as well as part of a redesigned website that provides greater information on each program offered. This information empowers students and their parents. A list of current employer partners will also be a signal to students and parents about the community-wide support for the school.

In addition to creating an enhanced online presence for each program, Madison Park should consider content directed at employers. This content could help market the competitiveness of their graduating students by including information on student achievements, experiential learning, and post-graduation outcomes. Contact information for each CVTE program should be listed clearly.

Looking Ahead

CVTE schools, including Madison Park, are important components of both the Commonwealth's and greater Boston's workforce development strategy and play a role in fostering our homegrown talent and economy. In order to strategically carry out their mission of preparing the region's future workforce, CVTE schools must demonstrate a responsiveness to available data, including job reports and wage trends. Moreover, developing robust partnerships with regional employers is fundamental to the successful of any CVTE program. These partnerships can provide qualitative information that further informs curriculum and helps align programs toward in-demand jobs with good wages. Ultimately, CVTE schools and Greater Boston's employers have the same goal: a dynamic pipeline of competitive graduates who can fill in-demand jobs, begin prosperous careers, and drive our region's continued economic success.

Appendix: Methods & Data Collection

This analysis is based on occupational data organized by the 2018 Standard Occupational Classification (SOC) system. Occupations are generally grouped by typical job duties, and occasionally by the skills, education, or training required to perform the job. At its broadest level, there are 23 major occupational groups. This study utilizes occupational data at the narrowest level, the detailed occupation, for both Massachusetts and Boston.

A three-step process was used to match programs at Madison Park to SOC occupations. First, each program was identified by its 2010 Classification of Instructional Program (CIP) code as reported by the Massachusetts Department of Elementary and Secondary Education (DESE).¹⁶ From there, each CIP code was matched to corresponding SOC codes via the U.S. Department of Labor's O*Net database. Most CIP codes had relatively few associated occupations. In order to supplement the dataset of projected occupational outcomes relative to each program, additional data on occupational outcomes were collected from CVTE programs across the Commonwealth.

The Massachusetts Executive Office of Labor and Workforce Development (EOLWD) produces biennial projections of job growth and annual job openings for the Commonwealth and individual workforce development areas. Projections are not provided for every occupation; additionally, there are more projections available at the state level than in the Boston workforce development area. It is important to note that there are many career tracks available to CVTE students that are not easily captured within the SOC structure. The EOLWD also provides data on typical education required for entry into an occupation, as well as average salary for 2017 as reported by the Occupational Employment Statistics (OES) program.

About the Greater Boston Chamber of Commerce

The Greater Boston Chamber of Commerce is the convener, voice and advocate of our region's business community, committed to making Greater Boston the best place for businesses and people to thrive. It helps its members and Greater Boston succeed by convening and connecting the business community; researching, developing and advocating for public policies that contribute to our region's economic success; and providing comprehensive leadership development programs designed to grow strong business and civic leaders. Learn more at BostonChamber.com.

¹⁶ Massachusetts Department of Elementary and Secondary Education. *Chapter 74 Career/Vocational Technical Education Program Directory*, November 2018.

