

SHREWSBURY PUBLIC SCHOOLS PORTRAIT OF A GRADUATE



Pictured above: SHS student works with medical equipment engineer and developer at Olympus Corporation in Westboro during April Vacation. Olympus is a manufacturer of optical and digital precision machinery and instruments. They develop, manufacture and market equipment and devices for medical, healthcare, imaging, information, and other industrial markets.

Shrewsbury Public Schools
Career Technical Education, Career Exploration, and Community Partnerships
Report to the Shrewsbury School Committee
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“The future depends on what you do today.”
Mahatma Gandhi

Introduction

This report serves as an update on career technical education, career exploration, and related programming at Shrewsbury High School. This ongoing work is part of the 2018-2022 strategic priorities that include, *Connected Learning for a Complex World*:

- Provide opportunities that help students develop independence after graduation, including exposure to career choices and development of skills in financial literacy.
- Build community partnerships with businesses, institutions, and individuals in order to increase access to experiential learning and career awareness and to enhance learning in the STEAM fields (science, technology, engineering, the arts, and mathematics)

Connected Learning for a Complex World is in keeping with SPS’s newly adopted 2023-2027 Strategic Plan that includes the following goal: *Advance Career and Technical Education: Strengthen all students’ postsecondary preparedness by expanding access to career and technical education, evaluating course offerings, and exploring pathway opportunities.*

Action Steps include:

- Expand opportunities for career exploration, job shadowing, and internships.
- Create multiple career and technical pathways for high school students, including coursework sequences followed by authentic field training experiences.

As you know, the change in the admissions policy at Assabet Valley Regional Technical High School had a significant impact on this year’s 9th grade class and will continue to impact students in the current 8th grade class and in the years to come. Unfortunately, the Town of

Shrewsbury's efforts to join the Assabet district were denied by the Assabet School Committee. This decision undoubtedly has a detrimental effect on those students who would have attended Assabet, and it is incumbent upon the Shrewsbury Public Schools to mitigate this situation. SPS is committed to developing career technical education options for SHS students, while actively engaging them in the process, as student voice is foundational to this work. Many efforts have been undertaken and are described in this report.

Section 1: Efforts to Advance Career Technical Education Options

It is important to define career technical education and highlight the difference between career technical education and vocational technical education, as we endeavor to provide opportunities to SHS students who would have attended Assabet Valley Regional Technical High School, along with *any* SHS student who is interested in career technical education.

Career technical education (CTE) differs from vocational technical education. CTE provides students with the academic and technical skills, knowledge, and training needed to succeed in future careers, while engaging in lifelong learning. Students are introduced to workplace competencies and academic content is accessible to students by providing it in a hands-on context. Vocational technical education goes beyond CTE, in that it involves more time intensive focus on one particular vocational area (often known as a "shop" or "trade") in a high school dedicated to this programming, where graduates typically earn a credential to immediately begin work in that occupation if they wish.

Shrewsbury High School is actively pursuing [*Innovation Career Pathways designation through the Department of Elementary and Secondary Education*](#) (Appendix A). According to DESE's website, "Innovation Career Pathways are designed to give students coursework and experience in a specific high-demand industry, such as information technology, engineering, healthcare, life sciences and advanced manufacturing. Innovation Career Pathways are designed to create strong partnerships with employers in order to expose students to career options and help them develop knowledge and skills related to their chosen field of study before they graduate high school." We are in the process of applying for a planning grant. Applications from school districts are due to DESE by June 15th.

Mr. Bazydlo and Ms. Flynn worked closely with the SHS leadership and counseling teams to identify Career Pathways course sequence options for rising Grade 10 and Grade 9 students interested in CTE beginning with the 2023-24 school year. These Career Pathway sequences are initially being offered to incoming ninth and tenth grade students who applied to Assabet Valley Regional Technical High School, and were not admitted due to the admissions policy change. The pathways include full-year course offerings that are organized into six content specific pathways, mimicking the structure of DESE's Innovation Career Pathways. Over 60 rising Grade 10 and Grade 9 students have enrolled in a Career Pathway that interests them, while having the flexibility to transition from one pathway to another if their interests change. In late March, Mr. Bazydlo and Ms. Flynn sent letters to all families of rising students who will be in Grade 9 and Grade 10 next

year who applied for admission to Assabet, in order to explain the newly created Innovation Career Pathways offerings ([Appendix B](#) and [Appendix C](#)). Counselors telephoned the parents and caretakers of 23 current 9th grade students who applied to Assabet last year. Of those 23 students, 9 enrolled in a career pathway for next year, 10 were not interested, and four have transferred schools (2 are currently enrolled at Assabet off of the waitlist). See tables below for additional information.

Table 1

| Rising Grade 9 Students (39) | Pathway |
|-------------------------------------|------------------------|
| 2 students | Biomedical Pathway |
| 16 students | Business Pathway |
| 2 students | Childcare Pathway |
| 13 students | Computer Science |
| 5 students | Engineering |
| 1 student | TV Production and Film |

Table 2

| Rising Grade 10 Students (22) | Pathway |
|--------------------------------------|--------------------------------|
| 2 students | Biomedical Pathway |
| 5 students | Business Pathway |
| 5 students | Childcare Pathway |
| 5 students | Computer Science Pathway |
| 4 students | Engineering Pathway |
| 1 student | TV Production and Film Pathway |

Over the past several months, members of the SHS leadership and counseling teams, Ms. Kathleen Keohane, and I met with Mr . Jeffrey Turgeon, Executive Director, [MassHire Central Workforce Development](#), and Ms. Kerry Akashian, [Career Development Education Lead at DESE](#), school leaders who play a lead role in Innovation Career Pathways partnerships (Appendix D and Appendix E). Additionally, we met with the leadership team at [Blackstone Valley HUB for Workforce Development](#) (BV HUB) to better understand opportunities for in-district and out of district internships, apprenticeships, job shadowing, and employment (Appendix F). The Blackstone Valley Hub for Workforce Development aims to actively contribute to a collaborative workforce pipeline by providing a centralized location for students to gain the technical and employability skills needed to meet the region’s needs, while meeting the workforce needs of our region by enhancing training opportunities for all ages.

Section 2: Researching Potential Programs & Partnerships for Career Technical Education

We are grateful to schools and organizations that have provided us with opportunities to learn about in-school and out of school career, technical, and vocational programming. In early April, Ms. Flynn and Dr. Lizotte visited the BV HUB, resulting in another meeting scheduled for next week. Former School Committee member, Mr. Jason Palitsch, connected us with Ms. Jeannie Hebert, Shrewsbury resident and President and CEO of Blackstone Valley Chamber of Commerce. SPS's partnership with the BV HUB proves very promising as we investigate exploratory and other courses, internships, and technical training. It is important to note that the BV HUB is the only organization of its kind in the United States. Funding and investments that could support this work could come from \$100k set aside in the FY24 budget and Colonial Fund donations that have been targeted for these purposes. As mentioned above, we are also seeking \$625k through the [DESE Innovation Career Pathways planning grant](#) (Appendix G).

BV HUB is willing to build programs for and with Shrewsbury High School, as we work with students to identify and explore areas of interest. Ms. Hebert, along with colleagues, Ms. Ashley Bregman, Executive Director of Blackstone Valley HUB for Workforce Development, and Mr. Bob Evans, Operations Director, spent a significant amount of time with us discussing programming available to students at the HUB, including advanced manufacturing and welding, and certifications including OSHA 10 and Mach 1.

Ms. Flynn, Ms. Rice, and Dr. Lizotte visited [Uxbridge High School](#) during a school day to speak with students, faculty and staff regarding Innovation Career Pathways at UHS (Appendix H). UHS seniors shared internship experiences and expressed gratitude for having the opportunity to move from one career pathway to another during their high school experience, as career interests changed. They also communicated that they gained "real world experience" during their internships (paid and unpaid) and through Capstone Projects designed to deepen their knowledge and understanding of trade, career, and college interests following high school. These conversations continued with meetings that included Dr. Michael Rubin, Principal of UHS, Mr. Bazydlo, Dr. Sawyer, and Dr. Lizotte. This networking is a critical step in the learning process and will continue as we aim to expand opportunities for students.

Section 3: Increasing Access to *Project Lead the Way* Coursework at SHS

As referenced above, *Project Lead The Way* (PLTW) is a nationally recognized, non-profit organization with a standardized curriculum that emphasizes critical thinking, creativity, innovation, real-world problem solving through project based programming. We have had PLTW courses at SHS for over a decade.

We are in the process of hiring an additional teacher to increase access to Project Lead the Way (PLTW) courses, with the goal of providing more students access to this programming. Project Lead the Way prepares students to adopt a problem-solving mindset, while engaging them in compelling, real-world challenges that help students become better collaborators and

thinkers, while providing them with skills to enter any career path they choose.

We are investigating the potential addition of Computer Integrated Manufacturing (CIM) as an additional PLTW course that could be provided to students at SHS for the 2024-25 school year by retrofitting space to accommodate equipment (cost b/w \$41,000-\$60,000). Grant and/or budget funding could be used to upgrade equipment to make this program more robust, while including options in 24-25 and beyond.

Based on our visit to UHS, we are looking at programs that could fit our existing space, in addition to continuing computer aided drafting via AutoCAD that is available to students through Project Lead the Way. We know that work-based learning, including computer integrated manufacturing, promotes equity and economic opportunities for all students.

The table below illustrates student requests for courses within PLTW programming offered at SHS. The funding of an additional 1.0 FTE in the Science and Engineering Department in next year’s budget allows us to accommodate the demand illustrated below, which we greatly appreciate. Please note that some course requests still may not be accommodated due to scheduling conflicts, depending on what other courses they have registered for.

| PLTW Courses: Engineering | First Choice | Alternate | Total |
|---------------------------------------------------------|---------------------|------------------|--------------|
| Principles of Engineering Honors (Project Lead the Way) | 16 | 19 | 35 |
| Intro to Engineering Design (Project Lead the Way) | 28 | 96 | 124 |

| PLTW: Biomedical Courses | First Choice | Alternate | Total |
|---------------------------------------------------------|---------------------|------------------|--------------|
| Principles of Biomedical Science (Project Lead the Way) | 32 | 0 | 32 |
| Human Body Systems (Project Lead the Way) | 21 | 0 | 21 |

| Engineering courses not PLTW | First Choice | Alternate | Total |
|-------------------------------------|---------------------|------------------|--------------|
| Explore Technology (Semester) | 20 | 106 | 126 |
| Robotics/Electronics | 43 | 121 | 164 |

Section 4: Increased Demand for Business Courses

Business courses at SHS are in higher demand than ever before. The table below illustrates student course requests for the 2023-24 school year. There is strong overlap with business courses and the CTE approach. While the budget plan for Fiscal Year 2024 has already been made, we strongly recommend consideration of adding a 1.0 FTE business teacher at SHS for the next school year if the FY24 personnel budget evolves in a way that could accommodate this request. Currently we will not have the personnel to run the Accounting elective and many students who requested Personal Finance, Introduction to Business, and Marketing would not be able to be accommodated.

| | First Choice | Alternate | Total |
|---------------------------------|---------------------|------------------|--------------|
| Personal Finance | 85 | 53 | 138 |
| Introduction to Business | 211 | 309 | 520 |
| Marketing | 58 | 135 | 193 |
| Accounting | 13 | 95 | 108 |

Section 5: Career Exploration

During the 2022-23 school year, school and district leaders and educators collaborated to create, assess, and strengthen career and life readiness opportunities for all students through career exploration. Opportunities including career fairs, job fairs, job shadowing, short and long-term internships (paid and unpaid), and classroom speaker series facilitated by SPS alumni, town officials, and others provided a connection between college, career, and the workforce. By illustrating ways in which student strengths, interests, academic and social emotional skill sets, can translate into the job market, and what steps students can take to reach their goals. We know that when students practice and apply real life learning skills, they are better equipped to make well-informed decisions, while realizing a sense of belonging and purpose, confidence, and increased independence.

Shrewsbury High School counselors including Director of School Counseling, Ms. Angie Flynn, and School Counselors, Mr. Sean Russell and Ms. Jess Rice, Ms. Kathleen Keohane, Director of Alumni Development and Community Relationships, Mr. Bazydlo, and Dr. Lizotte met regularly throughout the course of the year to identify individuals, companies and organizations that would be willing to work with students to share their purpose, goals, and mission. Student voice is foundational to this work. In order to best inform next steps including the development of course options, career pathways, and related programming that best meet the needs of all students, we need to know what interests students. Over the course of the school year, [student surveys](#) and [data collection tools](#) have been used to collect student input and inform decisions, as those relate to providing [career exploration](#), [career pathways](#), and [employment opportunities for students](#) (Appendices I, J, K, L, and M).

Ms. Kathleen Keohane, Director of Alumni Development and Community Relationships, regularly updates the district's website to share job opportunities for students throughout the year. This information includes career exploration opportunities that include contact information for local businesses and alumni that seek student involvement and engagement. Since the Jobs for Students site was created (November 4, 2022), it has received 7,130 unique views, with an average of 4:16 minutes spent on the page with 83.56% of people clicking on a link, bringing them from the site to a job application site. This information is managed through Google Analytics. 12 students have been hired as a result of visiting the Jobs for Students website, the SHS February Career Fair, and/or have participated in job shadowing.

During April Vacation, 28 SHS juniors engaged in job shadowing experiences. Most of these students participated in "STEM DAY" at Olympus Corporation, while others engaged in job shadowing at Component Sources International, Shrewsbury Federal Credit Union, Clinton Savings Bank, and Lofty Homes. Student feedback included the following:

- "I got to see all the different jobs in Olympus, lots of opportunities to ask questions, hands-on activities."
- "I enjoyed the connections that I made with the employees at the company. I also liked the hands-on sections of the tour."
- "Overall great experience and great people. I'd love to get the contact information of some of the people there if I have any further questions."
- "I think having some more hands-on sections would be great. I loved the mock surgery and the medical tools section of the tour."

During the visit to Olympus Worldwide, students learned the importance of networking often, always being open to feedback, and strengthening skills including adaptability, communication, listening, and time management.

We are grateful to work alongside school and district leaders, counselors, staff, students, families, alumni, community, and workforce partners, as we endeavor to expand career awareness opportunities. We recognize that it takes effective effort, creativity, shared purpose, resilience, and steadfastness to create, assess, and redefine learning experiences that meet the needs of all students. This work requires us to think and act flexibly, while shifting teaching and learning to be both future-focused and student-focused. In doing so, we are confident that

students will own their learning and demonstrate motivation, engagement, and independence. [Here are some photos](#) of career exploration and workforce opportunities in which we engaged during the school year (Appendix N).

Section 6: Local Business and Alumni Support

On October 21, SHS invited 58 local businesses and partners to a Business and Community Partnerships Summit (Appendix R and S) to meet with students and faculty and discuss ideas that aimed to further our efforts to do the following:

- Provide opportunities that help students develop independence after graduation, including exposure to career choices and development of skills in financial literacy (2022 Strategic Goal)
- Build community partnerships with businesses, institutions, and individuals in order to increase access to experiential learning and career awareness and to enhance learning in the STEAM fields. (2022 Strategic Goal)
- Share ideas for career exploration opportunities that include internships and job shadowing.

Businesses in attendance included the following:

- Salmon Health and Retirement
- Shrewsbury Credit Union
- LaMacchia Realty
- Component Sources International
- Worcester Red Sox
- Creedon & Co. Catering, Inc.

Students who facilitated the discussions included:

- Clara Tran, (Class of 2023) attended WooSox job shadow
- Kevin Dong, (Class of 2023) attended Nyla Labs job shadow
- Luiza Saldanha, (Class of 2023) attended Shrewsbury Federal Credit Union job shadow and was subsequently hired
- Drew Conant (Class of 2023)
- Jack Gregory (Class of 2023)

Thanks to the forward thinking of Ms. Kathleen Keohane, SPS alumni have access to a platform called Graduway, where SPS Alumni can connect, find their classmates, offer and look for jobs and internships, provide mentoring and career advice to current Juniors and Seniors, as well as other classmates, and keep up to date with what is happening in our schools (Appendix O). SPS students, faculty and alumni have access to SPSConnects.com, through Graduway. After creating a profile on the site, users can:

- connect with one another
- find classmates
- offer and look for jobs and internships
- provide mentoring and career advice to current Juniors and Seniors, as well as other classmates

The networking platform is hosted by [Graduway](#), a product from [Gravyty](#), which leverages the power of student, faculty and alumni communities to:

- drive engagement
- enhance mentoring and career development programs
- grow our pool of future volunteers and donors
- enhance mentoring and career development programs
- grow our pool of future volunteers and donors

Through this platform, we have communicated various opportunities for alumni to volunteer and mentor students and participate in Career Fairs, Job Fairs and volunteer as classroom guest speakers. Articles about "Alumni in the News" and SPS jobs are posted to alumni as well. Currently, 200 alumni are connected on the site, some of whom are SPS staff. Each year, the graduating class is invited to become the next group of alumni to connect on the site. In the near future, Juniors and Seniors will be invited to find mentors, who have graduated from colleges in which they are interested, or who have experience in a career they would like to know more about. The efforts of the several alumni who have participated in our career and job fairs, and continue to support the Colonial Fund and other endeavors are valued and appreciated. Since the start of the school year, the Colonial Fund has raised \$61,183 for career exploration programming.

On April 4th, Oak Middle School held a Career Day for all seventh grade students and included over 60 community and business partners! See Appendix P for the Career Day Brochure, list of participants, and recent article featuring the event in the Community Advocate. Thank you to OMS educators including Grade 7 ELA teacher, Sinead Slabine, who spearheaded the effort, OMS Curriculum Coordinator, Lisa Daly, Kathleen Keohane, Director of Alumni Development and Community Relationships, and Grade 7 ELA teachers for preparing students for this incredible teaching and learning endeavor.

Section 7: Challenges

Not surprisingly, this work is accompanied by several challenges, including lack of space, equipment, personnel, transportation, and student engagement/ follow through.

1. **Space:** As the School Committee is aware, available space is an issue as our student population and varying student learning and behavioral needs far exceed

building design. Most educators share classroom spaces with others throughout the day, as classroom space is very limited. Currently SHS utilizes 98% of available space for existing programming.

2. **Equipment:** As we continue to explore potential additions to CTE programming at SHS, the need for new equipment is likely. For example, if we were to implement other Project Lead the Way course options in existing engineering spaces (such as advanced manufacturing equipment) or enhance current programming (such as with a virtual dissection table for biomedical science), we would need to purchase the requisite equipment, and this can be expensive and will require staff to participate in training to learn how to operate it.
3. **Personnel:** Future growth of CTE will require more personnel. For faculty, this is a two-fold dilemma. First, the staff who would teach these courses need to have strong technical skills and strong teaching skills. It is difficult to find people with both technical and teaching skills to meet student needs with this type of programming. Additionally, we will need to commit to providing personnel with specialized training to ensure we implement PLTW curriculum with fidelity. These trainings occur during the summer months. In terms of organization, expansion of internships and job shadowing programs will require personnel resources to coordinate partnerships and schedules.
4. **Transportation:** While vocational technical schools typically do not provide transportation to off campus internships and training, we will need to consider options for any off-campus experiences that we provide to meet the needs of students who are interested in career technical experiences who may not otherwise have access without transportation.
5. **Student Engagement:** Student participation has proven challenging at times, despite numerous efforts to engage students and families in job shadowing and other learning opportunities that take place both during school hours and after school hours, including April Vacation and summer. Unfortunately, we have experienced no-shows after signing up, or a general lack of response despite multiple efforts to communicate.

We will continue to communicate to students and families through Schoology, e-mail, Principal Weekly Updates, school announcements during the day, including lunch, through 1:1 meetings between school counselors and students, and through Facebook, and the weekly Community Bulletin. The home-school partnership is essential, as we rely on parents, caretakers, and faculty to encourage students to engage in these and other learning opportunities. We are hopeful and confident that we will see increased levels of active participation over the coming months and years.

Summary

Students will continue to be provided with school and career readiness opportunities to learn and practice the core skills and competencies needed for school and career success in the 21st century. We are optimistic that we can and will provide students with career technical education opportunities that extend beyond the classroom walls by creating partnerships, such as a potential one with the Blackstone Hub that appears to be very promising. This will help us achieve our goals of providing career technical training, internships, and other workforce development opportunities. During the summer months, members of the SHS leadership and counseling teams will collaborate with Dr. Lizotte and others in order to implement career pathways course schedules that reflect choices of students who had demonstrated interest in Assabet, as well as identifying companies and businesses with whom we can closely partner to expand internships, job shadowing, and capstone experiences for these and other interested SHS students as they progress through their high school education.

Respectfully,

Jane O. Lizotte
Todd Bazydlo
Angie Flynn

Appendices

(Please click on the underlined section for hyperlinks)

Appendix A: [Innovation Career Pathways designation through the Department of Elementary and Secondary Education](#)

Appendix B: [Letter to incoming Grade 9 students and families](#)

Appendix C: [Letter to incoming Grade 10 students and families](#)

Appendix D: [MassHire](#)

Appendix E: [Career Development Education-DESE](#)

Appendix F: [Blackstone Valley HUB for Workforce Development](#)

Appendix G: [DESE Innovation Career Pathways Timeline](#)

Appendix H: [Uxbridge High School Innovation Pathways](#)

Appendix I: [School to Career Survey-September 2022](#)

Appendix J: [Career Exploration Business Partners](#)

Appendix K: [Career Explorations Website](#)

Appendix L: [Career Pathways Programming Website](#)

Appendix M: [Jobs for Students Website](#)

Appendix N: [Photos folder](#)

Appendix O: [Graduway](#)

Appendix P: [OMS Career Fair brochure, Community Advocate article, and list of participants](#)

Appendix Q: Innovation Career Pathway Offerings: 2023-24 School Year (See below.)

Business

| | |
|-----------------|------------------------------|
| Grade 9 or 10: | Intro to Business (semester) |
| Grade 10 or 11: | Personal Finance (semester) |
| Grade 10 or 11: | Marketing (semester) |
| Grade 10 or 11: | Accounting (semester) |
| Grade 11 or 12: | Capstone or Early College |

Computer Science

| | |
|---------------------|---------------------------|
| Grade 9 or 10: | Web Design (semester) |
| Grade 10, 11 or 12: | Computer Science 1 |
| Grade 10, 11 or 12: | Computer Science 2 |
| Grade 10, 11 or 12: | Cybersecurity |
| Grade 11 or 12: | Capstone or Early College |

Childcare

| | |
|-----------------|---------------------------------|
| Grade 10: | Child Development I (semester) |
| Grade 10 or 11: | Child Development II (semester) |
| Grade 11 or 12: | Early Childhood Education |
| Grade 11 or 12: | Early Childhood Certificate |

Engineering

| | |
|-----------------|---------------------------------------------------------------|
| Grade 9 or 10: | Exploring Technology (semester) |
| | Robotics and Electronics (semester) |
| Grade 9 or 10: | Introduction to Engineering Design (IED) Project Lead The Way |
| Grade 10 or 11: | Principles of Engineering (POE) Project Lead The Way |
| Grade 12: | Capstone/Internship/QCC |

Biomedical

| | |
|-----------|------------------------------------------------------------------------|
| Grade 10: | Principles of Biomedical (Prerequisite Biology or enrolled in Biology) |
| Grade 11: | Human Body Systems |
| Grade 12: | Medical Interventions /other Capstone opportunities |

TV Production & Film

| | |
|-----------------|-------------------------------|
| Grade 9 or 10: | Intro to TV & Film (semester) |
| Grade 9 or 10: | TV & Film 2 (semester) |
| Grade 10 or 11: | TV & Film 3 (semester) |
| Grade 11 or 12: | Advanced TV Production |
| Grade 11 or 12: | Internship or Capstone |

Appendix R: List of Invitees to Business and Community Partnerships Summit

Appendix S: Slides from the presentation shared at the Summit