



**Annual Report to Governor and General Assembly on
Pathways in Technology Early College High School (P-TECH)**

Pathways in Technology Early College High School (P-TECH) Act of 2017

(Chapter 591, Acts of 2017)

December 1, 2017



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I. Background/Introduction

Maryland is a leading state in the nation in terms of a high quality public education system from early childhood preschool through higher education. Maryland is expanding pre-kindergarten programs, offering innovative K-12 initiatives, and providing world-class colleges and universities. Early college experiences through Advanced Placement (AP), International Baccalaureate (IB), and Dual Enrollment (DE) are an important part of this system. The Pathways in Technology Early College High School (P-TECH) program strengthens the connection between education and career opportunities while advancing degree completion goals in Maryland.

Pathways in Technology Early College High Schools (P-TECH) are innovative early college programs that create clear pathways from high school to college and careers for young people from all academic backgrounds. In six years or less, students graduate with a high school diploma and a no-cost, two-year Associates of Applied Science (AAS) degree. Each P-TECH program requires a partnership among three entities: a local school system (LSS), a local institution of higher education, and a local employer. P-TECH schools work with industry partners and a local community college to ensure an up-to-date curriculum that is academically rigorous and economically relevant. The program also includes one-on-one mentoring, workplace visits and skills instruction, paid summer internships and first-in-line consideration for job openings with a school's partnering company.

P-TECH was designed to address workforce needs by preparing young people from all backgrounds for academic achievement and technical, middle-skill employment. IBM created the P-TECH program design that would link education to economic development and illuminate a pathway from high school to college and career. According to the Department of Commerce, Maryland has 230,000 STEM jobs, which is the second largest share of a state's employer base in the United States. While the degree attainment rate (associate's degree and higher) in Maryland improved from 43.9 percent in 2008 to 46.9 percent in 2014 (Lumina Foundation, 2014), Maryland still suffers from a shortage of highly qualified employees with approximately 6,000 STEM openings a year and only 4,000 STEM graduates; one of the largest workforce deficits in the U.S. (STEM Workforce Data Book, 2011).

The Maryland State Department of Education (MSDE) consulted with the Maryland Higher Education Commission (MHEC) throughout the development and implementation of the P-TECH program. Members of the MHEC staff assisted in developing the P-TECH Request for Proposals, reviewing the grant applications and serving on the P-TECH State Steering Committee.

II. Implementation

Carver Vocational-Technical High School and Paul Laurence Dunbar High School, in Baltimore City Public Schools, enrolled their first cohort of 50 P-TECH students each in the 2016-2017 school year. Baltimore City Community College (BCCC) is the post-secondary partner for the Baltimore City P-TECH schools. BCCC hired a P-TECH college liaison. The liaison works closely with P-TECH students at both schools. She visits the schools multiple times per week and accompanies the students on P-TECH related events.

P-TECH students at Carver are working towards their associate's degree in either Cyber Security and Assurance or Computer Information Systems. P-TECH students at Dunbar are working towards their associate's degree in Nursing, Respiratory Care, Physical Therapy Assistant or Health Information Technology.

Students at both Carver and Dunbar are enrolled in credit-bearing college courses at BCCC. P-TECH students took college courses the summer of 2017 after their freshman year and are currently enrolled in college courses in their sophomore year of high school. They have taken courses in English Writing, Math Statistics, Computer Literacy, Health and Fitness, and Fundamentals of Speech Communication.

Employers are integral partners in the development and implementation of a P-TECH school. IBM has partnered with the P-TECH school at Carver and identified an IBM staff person to liaison between the school and IBM. Carver P-TECH students have had multiple opportunities to engage with mentors from IBM. Carver P-TECH students visited Local Motors, a technology company located in the National Harbor, to learn about the technology behind self-driving cars.

Dunbar High School's industry partners include Johns Hopkins Hospital, Kaiser Permanente, and the University of Maryland, Baltimore. Every Dunbar P-TECH student has a healthcare related industry mentor. Dunbar students have toured Johns Hopkins Hospital and met with the hospital president. Industry involvement helps students understand the connection between coursework and the "real world" expectations of the workplace. P-TECH industry partners agree to consider P-TECH graduates for first in line consideration for employment.

III. Data Collection/Evaluation

Maryland State Department of Education staff members from the Divisions of Career and College Readiness and Curriculum, Assessment and Accountability are developing policies, processes, and tools to collect and analyze the required P-TECH data. Staff members are meeting with P-TECH administrators and accountability teams in the local school systems to review the P-TECH evaluation requirements outlined in the law and to review processes for collecting, reporting, and analyzing P-TECH data.

Initial data have been gathered for the first cohort of Baltimore City P-TECH students from Carver and Dunbar high schools. The Baltimore City Office of Achievement and Accountability (OAA) submitted to MSDE a list of all P-TECH students enrolled in both the Carver and Dunbar programs. The list included P-TECH students' names, gender and their state assigned student identification (SASID). From this list, MSDE is currently verifying and analyzing the P-TECH reporting requirements as identified in the P-TECH Act of 2017 (Table 1). By January 10, 2018, MSDE will provide, in a subsequent report to the Governor and the General Assembly, an analysis on the following data points:

- The number of students enrolled in each P-TECH school;
- How P-TECH students performed on federal and state assessments;
- The rate of attrition, if any, from each P-TECH school by grade and cohort; and
- The number of students at each P-TECH school who have an IEP plan, have a 504 Plan, or are English Language Learners.

The additional data points not listed above but included in the P-TECH Act of 2017 cannot be collected and reported at this time because students have not matriculated through the program. Additionally, collection of certain data points requires MSDE to develop a new data collection tool in order to accurately collect, verify, and analyze those points. That tool is under development. Lastly, collection of specific data points as outlined in the P-TECH Act of 2017 may require some modifications to the state and local school system data collection processes, specifically to account for P-TECH students in the 5th and 6th year pathway sequences for the purpose of FTE calculations.

All data collection and analyses processes will be in place for the next reporting year. MSDE will submit to the Governor and the General Assembly an annual analysis and evaluation of each P-TECH program.

IV. Table 1: P-TECH Act of 2017 Reporting Requirements:

P-TECH Reporting Requirement	Reporting Timeline
<ul style="list-style-type: none"> • The industry partners associated with each P-TECH school • The pathway sequence created for each P-TECH school • The total amount of funds distributed to each P-TECH school in accordance with this subtitle 	<p><i>Included in current report. See Tables 2 and 3.</i></p>
<ul style="list-style-type: none"> • The number of students enrolled in each P-TECH school • How P-TECH students performed on federal and state assessments • The rate of attrition, if any, from each P-TECH school by grade and cohort • The number of students at each P-TECH school who have an IEP plan, have a 504 Plan, or are English Language Learners 	<p><i>Will be included in the subsequent report to the Governor and Legislature on January 10, 2018.</i></p>
<ul style="list-style-type: none"> • The percentage of P-TECH students who meet the free and reduced meal plan income criteria in each P-TECH school 	<p><i>The Baltimore City Public School System (BCPSS) no longer uses the free and reduced meal criteria to identify low income students. The school system provides meals for all students regardless of eligibility. BCPSS used the Community Eligibility Plan (CEP) from the United States Department of Agriculture. Thus, this data point will not be included in future P-TECH reports for BCPSS. However, for those school systems with P-TECH schools that use the free and reduced meal criteria, MSDE will include it in the future reports to the Governor and State Legislature.</i></p>
<ul style="list-style-type: none"> • The number of P-TECH students graduating from each P-TECH school and receiving a high school diploma and an associate’s degree • The year in which each P-TECH student graduated and received the degree • The number of P-TECH students in each P-TECH school who received paid internships with each industry partner • The number of P-TECH students in each P-TECH school on track for on-time completion of the pathway sequence • The number of P-TECH students in each P-TECH school who, by the fourth year of the pathway sequence, complete the requirements for a high school diploma • The number of P-TECH students in each P-TECH school who are employed after completion of the pathway sequence with each industry partner or who matriculate to a public or private senior higher education institution after finishing the pathway sequence • The base and supplemental costs of operating a P-TECH school • An accounting of each P-TECH school’s expenditures • Whether all funds under this subtitle were spent 	<p><i>These data points cannot be reported on until FY 2020, when the first cohort of P-TECH students will have completed the 4 year pathway sequence.</i></p> <p><i>Additionally, MSDE will need to develop a new data collection tool in order to accurately collect, verify and analyze certain points. That tool is under development.</i></p>

- V. **Table 2:** The industry partners associated with each P-TECH school and the pathway sequence created for each P-TECH school:

School System/ Community College	School	Industry Lead	Career Pathways
Baltimore City/ Baltimore City Community College	Paul Laurence Dunbar High School	Johns Hopkins Hospital, Kaiser Permanente and University of Maryland, Baltimore	Nursing, Respiratory Care, Physical Therapy Assistant, and Health Information Technology
	Carver Vocational Technical High School	IBM	Cyber Security Assurance and Computer Information Systems

Table 3: The total amount of funds distributed to each P-TECH school in accordance with this subtitle:

Funding Source	Amount
FY 2016 Planning Grant	\$200,000
FY 2016 School Supplemental Grant	\$26,000
Total Funding to date	\$226,000