



Karen B. Salmon, Ph.D.
State Superintendent of Schools

December 1, 2019

The Honorable Larry Hogan
State House
100 State Circle
Annapolis, MD 21401

The Honorable Thomas V. Mike Miller
H-107, State House
100 State Circle
Annapolis, MD 21401

The Honorable Adrienne A. Jones
H-101, State House
100 State Circle
Annapolis, MD 21401

Re: Pathways in Technology Early College High (P-TECH) School Program Annual Report (MSAR #11082)

Dear Governor Hogan, President Miller, and Speaker Jones:

Section 7-1806 of the Education Article of the Annotated Code of Maryland requires the Maryland State Department of Education (MSDE) to annually report to the Governor and the General Assembly on the implementation of the Pathways in Technology Early College High (P-TECH) School program in the State. Please find the required report attached.

The report includes performance and outcome data for the Maryland P-TECH sites that reported student enrollment for the 2018-2019 school year. The report also includes data on Fiscal Year (FY) 2019 and FY 2020 state funds granted to local school systems and community colleges in support of P-TECH Planning grants and P-TECH Supplemental School and College grants.

Should you have any questions regarding this report, please contact Tiffany Clark, Director of Government Relations, at tiffany.clark1@maryland.gov or 410-767-0090.

Best Regards,

Karen B. Salmon, Ph.D.
State Superintendent of Schools

C: Sarah T. Albert (DLS Library – 5 copies)





Pathways in Technology
Early College High School

**Annual Report to the Governor and
General Assembly
December 2019**



Pathways in Technology Early College High School Act of 2017
(Chapter 591, Acts of 2017)



Maryland State Department of Education

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Background and Introduction

Pathways in Technology Early College High (P-TECH) Schools are innovative early college programs that create clear pathways from high school to college and careers for students from all academic backgrounds. IBM created the P-TECH program in order to link education to economic development and illuminate a pathway from high school to college and career. In six years or less, students graduate with a high school diploma and a no-cost, two-year Associate 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 a curriculum that is academically rigorous economically relevant, and aligned to workforce needs. The program also includes one-on-one mentoring, workplace visits, skills instruction, paid summer internships, and first-in-line consideration for job openings with a school's partnering company.

P-TECH is in direct alignment with Maryland's vision for career and technical education (CTE). The vision for CTE in Maryland is for each student to have access and opportunity to engage in career programs of study that:

- ✓ align to high-skill, high-wage, and/or in-demand careers;
- ✓ lead to earning industry-recognized and/or postsecondary credentials that will allow entrance and/or advancement in a specific career cluster; and
- ✓ provide career-based learning experiences that require the application of academic and technical knowledge and skills in a work setting.

Most P-TECH students are enrolled in the following career clusters:

- Transportation Technologies
- Health and Biosciences
- Information Technology
- Manufacturing Engineering and Technology
- Consumer Services Hospitality and Tourism

With continued support from the Governor and the General Assembly, Maryland is building a strong statewide network of P-TECH stakeholders working together to prepare Maryland students for high-wage, in-demand career opportunities. This report includes performance data on Maryland's active P-TECH sites as well as information on the expected growth of P-TECH sites in Maryland.



Implementation

In the 2018-2019 school year, five Maryland school systems offered P-TECH programs. For data on specific P-TECH program performance measures, refer to [Tables 1A](#), [1B](#) and [1C](#).

School System / Community College	School Site	Career Pathway	2018-2019 Cohorts	2018-2019 P-TECH Highlights
Allegany County Public Schools / Allegany College of Maryland	<ul style="list-style-type: none"> Allegany High School Fort Hill High School Mountain Home High School, Allegany Career and Technology Center 	<ul style="list-style-type: none"> Information Technology Cyber Security 	Freshmen and Sophomores	Allegany County P-TECH students were paired with their mentors and participated in a tour of Allegany College and Western Maryland Health Systems. Allegany County P-TECH students also participated in several Cyber Security events and competitions including Girls Go Cyber and the Maryland STEM Festival Virtual High School Cyber Competition. Grade ten P-TECH students completed a college Computer Literacy course and those students on the four-year completion pathway completed the Computer Logic college course.
Baltimore City Public Schools / Baltimore City Community College	Carver Vocational-Technical High School	<ul style="list-style-type: none"> Cyber Security Assurance Computer Information Systems 	Freshmen, Sophomores and Juniors	<p>Eleven P-TECH Carver students interned with IBM. Part of their internship experience included volunteering at the Washington Nationals Youth Baseball Academy and serving as mentors to students in grades three through five. Some P-TECH students took classes at Baltimore City Community College full-time in pursuit of their Associate Degree in Computer Information Systems or Cyber Security.</p> <p>Grade nine students participated in Baltimore City Community College P-TECH College Ready Open House event. It served as an introduction to the many aspects of college including registering for courses and identifying on-campus resources.</p>



Pathways in Technology Early College High (P-TECH) School Annual Report

School System / Community College	School Site	Career Pathway	2018-2019 Cohorts	2018-2019 P-TECH Highlights
	Paul Laurence Dunbar High School	<ul style="list-style-type: none"> • Nursing, • Respiratory Care • Physical Therapy Assistant 	Freshmen, Sophomores and Juniors	<p>Thirty-five grade nine P-TECH students visited the University of Maryland R. Adams Cowley Shock Trauma Center and worked directly with health care professionals in different areas of medicine, including physical therapy, respiratory therapy, nursing, and trauma surgery. The unique experience gave the students the opportunity to use the trauma simulators that health care professionals use with real patients. Additionally, P-TECH at Dunbar Respiratory Care and Physical Therapy Assistant pathway students participated in shadow days at Johns Hopkins Hospital. Lastly, P-TECH at Dunbar juniors interned at the University of Maryland Medical Center’s Patient Experience Department, Shock Trauma, and Johns Hopkins Hospital orthopedics, neurology and anesthesiology departments.</p> <p>Grade nine students participated in Baltimore City Community College P-TECH College Ready Open House event. It served as an introduction to the many aspects of college including registering for courses and identifying on-campus resources.</p>
	New Era Academy	<ul style="list-style-type: none"> • Transportation and Supply Chain Management 	Freshmen	<p>Eighteen students passed their first college courses, Preparation for Academic Achievement and Health Life and Fitness, with a B or better. Fourteen New Era P-TECH students passed all of their high school class with a 2.5 or better.</p> <p>Grade nine students participated in Baltimore City Community College P-TECH College Ready Open House event. It served as an introduction to the many aspects of college including registering for courses and identifying on-campus resources.</p>



Pathways in Technology Early College High (P-TECH) School Annual Report

School System / Community College	School Site	Career Pathway	2018-2019 Cohorts	2018-2019 P-TECH Highlights
Baltimore County Public Schools / Community College of Baltimore County	Dundalk High School	<ul style="list-style-type: none"> Engineering Technology 	Freshmen	The first cohort of P-TECH students enrolled at Dundalk High School participated in a meeting with their industry mentors. Mentors and P-TECH students met at the Community College of Baltimore County Dundalk campus and engaged in engineering focused activities such as flying drones and using a remote control to steer Alban CAT dump trucks through an obstacle course.
Montgomery County Public Schools / Montgomery College	Clarksburg High School	<ul style="list-style-type: none"> Network and Information Technology 	Freshmen	The first cohort of P-TECH students enrolled at Clarksburg High School participated in the following activities: tour of Montgomery College; tour of DALY Computers; participated in ATLAS, a STEM college and career symposium; participated in a Cyber Forensics Challenge and a mentor event.
Prince George's County Public Schools / Prince George's Community College	Frederick Douglass High School	<ul style="list-style-type: none"> Health Information Management 	Freshmen and Sophomores	Frederick Douglass High School P-TECH students in both the Health Information Management pathway and the Hospitality Services Management pathway completed a total of 401 college courses with passing grades. Health Information Management P-TECH students participated in the National Institutes of Health Community College Day and Hospitality Services Management P-TECH students visited the Hospitality and Tourism Management program at the University of Maryland Eastern Shore. Frederick Douglass High School established a P-TECH Parent Committee in March of 2019. P-TECH students earned a scholarship to study at the Gordonstoun International Summer Institute in Scotland.
		<ul style="list-style-type: none"> Hospitality Services Management 	Freshmen and Sophomores	



Data Collection and Evaluation Methods

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

Performance measure data were submitted to MSDE for the P-TECH programs in Allegany County, Baltimore City, Baltimore County, Montgomery County and Prince George’s County. Not all data points included in the P-TECH Act of 2017 can be reported at this time because students have not matriculated through the program.

Data and Information Tables

Table 1A: P-TECH Performance Measures for P-TECH programs with enrollment in the 2018-2019 school year



Pathways in Technology Early College High (P-TECH) School Annual Report

Based on Student Enrollment for School Year 2018-2019

P-TECH Reporting Requirements	Baltimore City Public Schools			Allegany County Public Schools	Prince George's County Public Schools		Baltimore County Public Schools	Montgomery County Public Schools
	Carver	Dunbar	New Era Academy	Allegany, Fort Hill, Mountain Home, Allegany Career and Technology Center	Frederick Douglass - Health	Frederick Douglass - Hospitality	Dundalk	Clarksburg
The number of students enrolled in each P-TECH school	127	155	28	47	58	60	65	54
The rate of attrition, if any, from each P-TECH school by grade and cohort (9 th Grade)	58%	56%	30%	0%	14%	37%	14%	6%
The rate of attrition, if any, from each P-TECH school by grade and cohort (10 th Grade)	4%	29%	N/A	41%	10%	11%	N/A	N/A
The rate of attrition, if any, from each P-TECH school by grade and cohort (11 th Grade)	10%	10%	0%	N/A	N/A	N/A	N/A	N/A
The number of students at each P-TECH school who have an IEP plan	23	17	2	3	1	0	6	1
The number of students at each P-TECH school who have a 504 plan	5	10	1	1	1	5	5	1
The number of students at each P-TECH school who are English Language Learners	2	0	3	0	0	0	10	0
The percentage of P-TECH students who meet the free and reduced meal plan income criteria in each P-TECH school	80	82	13	24	18	20	40	14



Pathways in Technology Early College High (P-TECH) School Annual Report

Table 1B: P-TECH Performance Measures for P-TECH programs with enrollment in the 2018-2019 school year

Based on Student Outcomes as of June 30, 2019

	Baltimore City Public Schools			Allegheny County Public Schools	Prince George's County Public Schools		Baltimore County Public Schools	Montgomery County Public Schools
P-TECH Reporting Requirements	Carver	Dunbar	New Era Academy	Allegheny, Fort Hill, Mountain Home, Allegheny Career and Technology Center	Frederick Douglass - Health	Frederick Douglass - Hospitality	Dundalk	Clarksburg
The number of students enrolled in each P-TECH school	127	155	28	47	58	60	65	54
How P-TECH students performed on federal and state assessments (Pass Rate) - English language arts	3.5% 2 out of 57 students	15.2% 7 out of 46 students	0% 0 out of 1 students	25% 4 out of 16 students	41.9% 13 out of 31 students	57.1% 16 out of 28 students	N/A	N/A
How P-TECH students performed on federal and state assessments (Pass Rate) - Mathematics	2.1% 1 out of 48 students	0% 0 out of 69 students	9.1% 2 out of 22 students	63.2% 12 out of 19 students	9.5% 2 out of 21 students	20% 6 out of 30 students	2% 1 out of 49 students	0% 0 out of 5 students
How P-TECH students performed on federal and state assessments (Pass Rate) - MISA	Information not yet available	Information not yet available	Information not yet available	Information not yet available	Information not yet available			
The number of P-TECH students on track for high school 4 year graduation	78	104	20	44	57	52	57	51
The number of P-TECH students on track for a 4 year P-TECH completion (Associates Degree and high school diploma by year 4)	50	1	15	6	58	59	2	48



Pathways in Technology Early College High (P-TECH) School Annual Report

P-TECH Reporting Requirements	Baltimore City Public Schools			Allegany County Public Schools	Prince George's County Public Schools		Baltimore County Public Schools	Montgomery County Public Schools
	Carver	Dunbar	New Era Academy	Allegany, Fort Hill, Mountain Home, Allegany Career and Technology Center	Frederick Douglass - Health	Frederick Douglass - Hospitality	Dundalk	Clarksburg
The number of P-TECH students on track for a 5 year P-TECH completion	11	7	5	18	0	0	32	6
The number of P-TECH students on track for a 6 year P-TECH completion	23	136	0	20	0	0	22	0
Number of P-TECH student internship placements	12	12	0	0	0	0	0	0
Number of P-TECH student internship placements with an industry partner	12	12	0	0	0	0	0	0



Pathways in Technology Early College High (P-TECH) School Annual Report

Table 1C: P-TECH Performance Measures for P-TECH programs with enrollment in the 2018-2019 school year

Based on Student Outcomes as of June 30, 2019

P-TECH Reporting Requirements	Baltimore City Public Schools			Allegany County Public Schools	Prince George's County Public Schools		Baltimore County Public Schools	Montgomery County Public Schools
	Carver	Dunbar	New Era Academy	Allegany, Fort Hill, Mountain Home, Allegany Career and Technology Center	Frederick Douglass - Health	Frederick Douglass - Hospitality	Dundalk	Clarksburg
The number of students enrolled in each P-TECH school	127	155	28	47	58	60	65	54
High school 4 year graduation rate (diploma only)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P-TECH 4 year graduation rate (diploma and associate degree)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P-TECH 5 year graduation rate (diploma and associate degree)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P-TECH 6 year graduation rate (diploma and associate degree)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P-TECH completers employed two quarters after graduation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P-TECH completers employed with industry partner two quarters after graduation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P-TECH completers enrolled in postsecondary education at a 4 year higher education institution two quarters after graduation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



Pathways in Technology Early College High (P-TECH) School Annual Report

Table 2A: Fiscal Year 2019 P-TECH Supplemental School Grants

P-TECH supplemental school grants are annual grants from MSDE to local school systems with P-TECH programs.

- \$750 per student based on P-TECH Program Fall Enrollment Validation File submitted to MSDE by October 30th of each year.
- Local school system must match 100% of supplemental school grant funds.

Table 2A identifies the supplemental grant amount and local match for all grant recipients.

Grant Recipient	Site	Grant Award Amount	Local Match (only required for Supplemental School Grants)
Allegany County Public Schools	Allegany, Fort Hill, Mountain Home High Schools, and Allegany Career and Technology Center	\$35,250	\$35,250
Baltimore City Public Schools	New Era Academy, Carver Vocational-Technical and Paul Laurence Dunbar High Schools	\$229,500	\$229,500
Baltimore County Public Schools	Dundalk High School	\$45,000	\$45,000
Montgomery County Public Schools	Clarksburg High School	\$46,500	\$46,500
Prince George’s County Public Schools	Frederick Douglass High School	\$88,500	\$88,500

Table 2B: Fiscal Year 2019 Local Funds Used to Support P-TECH

Local Funds are defined as local monies spent in support of P-TECH outside of grant and matching funds and funds solely dedicated to P-TECH. Table 2B identifies the amount of local funds for each school system.

School System	School Site	Amount of Local Funds
Allegany County Public Schools	Allegany, Fort Hill, Mountain Home, and Allegany Career and Technology Center	\$0
Baltimore County Public Schools	Dundalk	\$16,503
Montgomery County Public Schools	Clarksburg	\$0
Prince George’s County Public Schools	Frederick Douglass - Hospitality	\$391,518
	Frederick Douglass - Health Information	\$391,518
Baltimore City Public Schools	Carver	\$1,031,400
	Dunbar	\$343,800
	New Era	\$265,172

Table 2C: FY 2019 P-TECH Supplemental College Grants

P-TECH Supplemental College grants are annual grants from MSDE to P-TECH College Partners.

- A P-TECH Supplemental College Grant is an amount equal to the tuition and mandatory fees that would normally be charged for the classes in which P-TECH students are enrolled.
- The state share of a P-TECH Supplemental College Grant shall be calculated and distributed by the state to college partners and equals:
 - 50% for counties that received a Disparity Grant in the prior fiscal year; or
 - 25% for counties that did not received a Disparity Grant in the prior fiscal year.
- If the funds distributed to the college from the state are not enough to cover the costs of tuition and fees, then the local share of a P-TECH Supplemental College grant shall be calculated and distributed by a county board, to college partners and equals the amount not paid by the state.

Grant Recipient	Grant Award Amount	Disparity Grant Recipient
Allegany College	\$6,724	Y
Baltimore City Community College	\$129,048	Y
Prince George's County Community College	\$75,090	Y

Table 3: Industry Partners and Career Pathways Associated with Each P-TECH Program

Industry partners collaborate with the community college and local school system to ensure curriculum that is academically rigorous, economically relevant, and meets workforce needs. Industry partners create a current skills map for the industry/sector that identifies essential job requirements and collaborate with the school system and community college to identify the associate degree program that will ensure students meet industry expectations.

Industry partners also provide one-on-one mentoring, workplace visits, instruction on the skills needed for the industry, paid internships, and first-in-line consideration for job openings with a school's partnering companies. Table 3 identifies industry partners for each P-TECH program.

School System / Community College	School	Industry Partners	Career Pathways
Allegany County Public Schools /Allegany College	Allegany Career and Technology Center	Western MD Health Systems*, Exclamation Labs, Willets Systems, Inc., First United Bank and Trust, IBM, Northrop Grumman	Information Technology Cyber Security
Baltimore City Public Schools / Baltimore City Community College	Paul Laurence Dunbar High School	Johns Hopkins Hospital*, Kaiser Permanente*, University of Maryland, Baltimore*	Nursing, Respiratory Care, Physical Therapy Assistant,
	Carver Vocational Technical High School	IBM*	Cyber Security Assurance and Computer Information Systems
	New Era Academy	Port of Baltimore*	Supply Chain Management
Baltimore County Public Schools / Community College of Baltimore County	Dundalk High School	Whiting-Turner Contracting*, KCI Technologies*, Black and Decker*, Alban CAT*	Engineering Technology
Montgomery County Public Schools / Montgomery College	Clarksburg High School	Daly Computers, Inc.*, Information Technology Foundation*, Dataprise	Network and Information Technology
Prince George’s County Public Schools / Prince George’s Community College	Frederick Douglass High School	SmartI Management Solutions*, Broadband Connect, Cisco Systems, Inc., Engineering Design Technologies, Insight Engineering, Inc., Six Flags, Employ Prince George’s	Health Information Management
			Hospitality Services Management

*Lead Industry Partners



Pathways in Technology Early College High (P-TECH) School Annual Report

Table 4A: P-TECH Enrollment for 2019-2020 School Year Submitted as of September 30, 2019

Table 4A identifies the total P-TECH enrollment for the 2019-2020 school year for each school site disaggregated by class year (freshman, sophomore, etc.) Total P-TECH student enrollment for 2019-2020 is 817 students.

School System / Community College	School Site	2019-2020 Enrollment
Allegany County Public School s/ Allegany College of Maryland	Allegany Career and Technology Center	19 freshmen 25 sophomores 13 juniors
Baltimore City Public Schools / Baltimore City Community College	New Era Academy	19 freshmen 19 sophomores 1 senior
	Carver Vocational-Technical High School	62 freshmen 30 sophomores 26 juniors 27 seniors
	Paul Laurence Dunbar High School	95 freshmen 31 sophomores 30 juniors 38 seniors
Baltimore County Public Schools/ Community College of Baltimore County	Dundalk High School	59 freshmen 56 sophomores
Montgomery County Public Schools/ Montgomery College	Clarksburg High School	66 freshmen 51 sophomores
Prince George’s County Public Schools/Prince George’s Community College	Frederick Douglass High School	<i>Hospitality Pathway</i> 27 freshmen 24 sophomores 27 juniors <i>Health Information Technology Pathway</i> 26 freshmen 22 sophomores 24 juniors



Pathways in Technology Early College High (P-TECH) School Annual Report

Table 4B: P-TECH Planning Grants

Table 4B outlines the school system and community college that were awarded \$100,000 P-TECH Planning Grants for fiscal year 2020.

School System / Community College	School	Industry Partners	Career Pathways	First Student Cohort
Baltimore County Public Schools / Community College of Baltimore County	Owings Mills High School	Becton Dickinson (BD)*, McCormick & Company*, North American Millwright*, Northrop Grumman*, Potomac Photonics*	Design, Fabrication, and Advanced Manufacturing	Fall 2020
Harford County Public Schools	Joppatowne High School	U.S. Army Communications-Electronics Command (CECOM) at Aberdeen Proving Ground*	Computer Information Systems and Information Assurance and Cybersecurity	Fall 2020

*Lead Industry Partners