MLDS Center
Maryland Longitudinal Data System

Better Data • Informed Choices • Improved Results

December 2024

2024 Annual Report on the Maryland Longitudinal Data System and Center

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Governing Board, Maryland Longitudinal Data System

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This Annual Report of the Governing Board of the Maryland Longitudinal Data System Center is submitted to the Governor and the Maryland General Assembly in compliance with Education Article § 24-705 of the Annotated Code of Maryland.

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Highlights

★ Provided data tables and analysis to support key priorities of the Governor, including: over 200 data tables needed to administer the ENOUGH Grant application process; and data tables and analysis on the impact of Correctional Education programs on the workforce outcomes of released inmates.

★ The Governing Board approved the addition of 67 new data elements to MLDS Data Inventory, including data elements from two new data sharing partners: The Maryland Department of Service and Civic Innovation and the Department of Public Safety and Correctional Services.

★ The MLDS Center redesigned its website to utilize the state's updated format and style and to prominently display information about the Center to help visitors quickly understand the scope of the data maintained and how those data are organized, managed, kept secure, and used to inform state policy.

★ The Institute of Education Sciences (U.S. Department of Education) awarded a research team from Maryland one of five new grants under the Using Longitudinal Data to Support State Education Policymaking. The team will receive $966,892 for the 3-year project. The project is entitled *Using Maryland SLDS to Strengthen and Diversify the Teacher Workforce through High School to Career Pathways.*

★ A new *Research Brief* template was created to help researchers present their research findings in a succinct and user-friendly format that can be easily consumed by policymakers and practitioners.

★ Provided data to the Maryland Behavioral Health Administration to help inform their work on a behavioral health workforce needs assessment.

★ Staff of the Center and Research Branch members conducted more than 29 presentations on MLDS related research and the governance and design of the Center.

★ The MLDS Center Research Branch had 16 research studies published in national outlets this year.

Introduction

This Annual Report is submitted in fulfillment of the requirement under Education Article, §24-705, Annotated Code of Maryland. The Governing Board must provide information to the Governor and General Assembly annually on the following:

1. An update on the implementation of the MLDS and activities of the MLDS Center;
2. List of all studies performed by the Center during the reporting period;
3. List of all currently warehoused data that are determined to be no longer necessary to carry out the mission of the Center;
4. Any proposed or planned expansion of data maintained in the database; and
5. Any other recommendation made by the Governing Board.

The following sections of the report will address each of the five statutorily required topics.

Section 1. Implementation of the MLDS and Activities of the Center

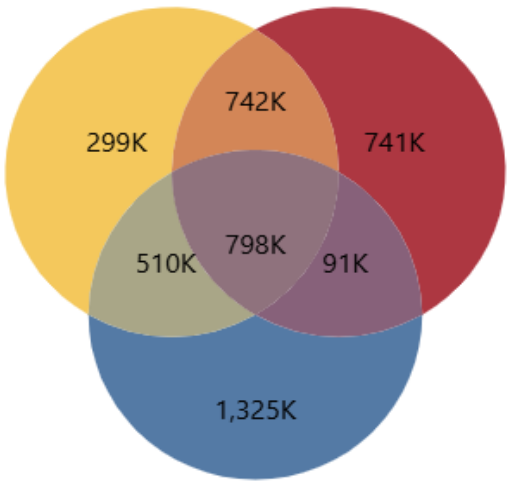
1.1 System Implementation and Management

A. Records Count

As of November 2024, the MLDS contained records for 4,505,603 unique individuals. Table 1 below provides the number of individual records provided by each data partner agency that provide identity establishing data collections.

Table 1 and Figure 1 - Number of Individual Records in the MLDS by Data Source and Sector Linking

Source	Count as of Nov 2022
MHEC	2,371,353
MSDE	2,723,760
Labor	2,349,107



Approximately 798,021 individuals have records that can be linked across all sectors and 2.1 million have records in at least two sectors. The reason

there is a high number (1.3 million) of K-12 records with no match is because more than half of MSDE data is K-8 students – a population generally not engaged in higher education or the workforce and therefore not able to be matched to another sector.

B. Match Rate

The Center calculates match rates based on the number of 12th grade students from Maryland public schools with a record in at least one other education or workforce sector. The Center's match rate has remained at 94% over time.[1] The high match rate indicates strong data matching routines and provides confidence in the system. Table 2 provides a breakdown of the match rate for each cohort year.

Table 2. 12th Grade Cohort Cross-Sector Match Rate Analysis

Cohort Year	Total 12th Grade	K12 Only	K12 & College	K12 & Workforce	All 3 Sectors	% Matched ANY Sector	% Matched ALL 3 Sectors
2023	63,652	8,033	10,812	15,192	29,615	87%	47%
2022	62,836	5,968	7,795	14,991	34,082	91%	54%
2021	63,773	5,046	6,200	15,697	36,830	92%	58%
2020	62,617	4,357	4,692	15,331	38,237	93%	61%
2019	61,029	3,377	3,690	14,065	39,897	94%	65%
2018	61,808	3,050	3,156	13,852	41,750	95%	68%
2017	60,552	2,745	2,809	13,605	41,393	95%	68%
2016	60,355	2,489	2,794	12,839	42,233	96%	70%
2015	61,347	2,614	2,728	12,950	43,055	96%	70%
2014	60,484	2,341	2,658	12,080	43,405	96%	72%
2013	60,992	2,306	2,605	11,910	44,171	96%	72%
2012	60,525	2,188	2,686	11,709	43,942	96%	73%
2011	62,333	2,798	2,757	12,303	44,475	96%	71%
2010	61,962	2,517	2,868	11,619	44,958	96%	73%
2009	61,760	2,869	3,138	11,337	44,416	95%	72%
2008	65,039	4,957	5,710	11,412	42,960	92%	66%
Total	**991,064**	**57,655**	**67,098**	**210,892**	**655,419**		

[1] The match rate is an average of all years (2008 -2023). The match rate for any given year will change over time. For example, the 2023 match rate of 87% will likely increase over time as more students move into college and the workforce, or return to Maryland from an out-of-state college and join the Maryland workforce.

C. System Security

System security and monitoring continue to be a key focus of the MLDS Center. For monitoring, the Center utilizes a vulnerability scanning tool provided by the Department of Information Technology (DoIT). That tool provides a monthly vulnerability report to both the Center IT staff and DoIT. Each month the Center IT staff review the vulnerabilities and take corrective actions to address them. A security audit was not conducted during the 2024 calendar year.

D. Quality Management

The MLDS Center received a new data analyst position in the FY 23 budget. The position, which was filled this year, will focus on data quality assurance and testing, including creating detailed test plans; performing qualitative analyses as data are loaded; and developing and executing automated test scripts.

The Center's data analysts continued to develop and maintain a data driven application designed to augment current data validation processes. The application provides a high level, systematic view of data quality, insight into data completeness and validity, and opportunity to identify potential issues to address. The application provides analysis reports for the Data Team to find and resolve data discrepancies.

E. Website

The MLDS Center redesigned the agency's website.[2] The new design utilizes the state's updated format and style. The new homepage prominently places key information about the Center to help website visitors quickly understand the scope of the data maintained, how those data are organized, managed, and secured, and how the Center's data helps guide decisions of key policy makers and stakeholders.

1.2 Activities of the Center

A. Providing Information for Policy Makers

Accountability and Implementation Board (AIB)

Last year, the MLDS Center entered into a one year interagency agreement with the Accountability and Implementation Board (AIB). The agreement states that the MLDS Center will provide research services to support the work of the AIB. The work under that agreement continued this year. Some of the work done for AIB this year includes the following:

[2] https://mldscenter.maryland.gov/

1. Attended meetings with MSDE and MHEC to help define AIB outcome and output measures;
2. Prepared data from publicly available MSDE reports and created excel charts to show targets for teacher salary data, which were presented to staff at MSDE and to the AIB outcome measures workgroup group;
3. Reviewed target setting strategies used by other state, local, and practitioner organizations;
4. Attended meetings with MSDE to help define joint AIB outcome and MSDE strategic plan measures;
5. Examined themes from target setting strategies used by state, local, and practitioner organizations;
6. Worked with the members of the Governor's Workforce Development Board CTE committee data workgroup to create a spreadsheet that projects ambitious targets for reaching the Blueprint goal of 45% of high school graduates attaining an industry recognized credential or registered apprenticeship (RA); and
7. Coded Blueprint implementation plans to provide themes to the AIB.

Engaging Neighborhoods, Organizations, Unions, Governments, and Households (ENOUGH) Grant Program

The MLDS Center provided analyses to support the implementation of the ENOUGH Act grant program.[3] This included participating in a series of meetings with staff from the Governor's Office for Children and the Maryland State Department of Education to develop and operationalize measurements to support the awarding of grant funds under the ENOUGH Act. Analyses were provided at the county level and the census tract level on nine measurements for all 24 jurisdictions and approximately 200 different grant applicants. The Center was able to complete all of these comprehensive analyses in nine weeks.

Correctional Education

At the request of the Governor's Office of Performance Improvement (GOPI), the MLDS Center developed a series of tables to provide information on the impact of Correctional Education programs on the workforce outcomes of released inmates. The report looks at the workforce outcomes (wages and number of quarters worked) at one and three year intervals post release and disaggregates results by Correctional Education program type. The report required a new data sharing agreement with and data collection from the Department of Public Safety and Correctional Services.

Healthcare

[3] https://goc.maryland.gov/Pages/NOFO-dates.aspx

Clearinghouse - Last year, reporting and analysis conducted by the MLDS Center contributed to the Final Report of the *Commission to Study the Health Care Workforce Crisis.* One of the recommendations of that report was the establishment of a Maryland Statewide Healthcare Workforce Data Clearinghouse. Staff from the MLDS Center participated in a strategic planning workshop to provide expertise on the development and management of a state data system and to consider whether the MLDS could serve the purpose envisioned for a healthcare workforce data exchange. Currently the Maryland Department of Health is considering next steps for system placement and development.

Behavioral Health - In recognition of a shortage of behavioral health providers, the General Assembly passed SB 283 (Chapter 286, 2023) *Mental Health - Workforce Development - Fund Established*. The goal of the Behavioral Health Workforce Investment Fund is to increase the capacity of the state's behavioral health workforce. The fund will support the education, training, certification, recruitment, placement, and retention of professionals and paraprofessionals in the field. The bill directed the Maryland Health Care Commission (MHCC) and the Behavioral Health Administration (BHA) to conduct a behavioral health workforce needs assessment to quantify the staff shortage, identify potential education and training providers, and recommend an initial allocation for the fund. By connecting data from the education and training systems, including CTE, apprenticeship, post-secondary education, and other workforce development programs, with workforce data, including wage earnings and employers, the MLDS Center was able to provide data sets to support MHCC and BHA in conducting the required needs assessment.

<u>Other Areas of Support to State Policy Makers</u>

1. Attendance and participation at Associates of Arts in Teaching (AAT) Council Meetings. Center staff: (a) provided updated analyses on the workforce outcomes for AAT graduates, including the rates at which AAT graduates enter the workforce as public school teachers; and (b) provided updates on the SLDS grant[4] funded project entitled, *Using Maryland SLDS to Strengthen and Diversify the Teacher Workforce through High School to Career Pathways.*
2. Attendance and participation at Maryland Advisory Committee on Prison Education Programs (PEP), including providing analyses on the educational outcomes for postsecondary education programs to inform the review of PEP applications.

[4] The State Longitudinal Data Systems (SLDS) Grant Program run by the National Center for Education Statistics of the Institute of Education Sciences in the U.S. Department of Education. The grant was awarded to researchers from the MLDS Research Branch who will use the MLDS for the project.

3. Engaged with representatives of MSDE's Education Preparation programs to discuss how the MLDS Center can provide information on the teacher pipeline and explore the feasibility of collecting data from the National Board for Professional Teaching Standards.
4. Worked with Baltimore City Council President Mosby to discuss a data request on the impact of absenteeism on outcomes for City School children.
5. Met with representatives from Maryland Agricultural Education Foundation, Inc. to discuss a data request on the impact of agriculture education on workforce outcomes.
6. Met with the Office of Program Evaluation and Government Accountability (OPEGA) to discuss data limitations in using UI wage data for research.
7. Met with the Maryland Equitable Justice Collaborative (MEJC) Education and discussed potential reporting and research projects of interest to MEJC.
8. Provided an update to the Education Deans and Directors on the Institute of Education Sciences grant funding for the *IES SLDS: Using Maryland SLDS to Strengthen and Diversify the Teacher Workforce through High School to Career Pathways* study.
9. Met with staff of the Governor's Workforce Development Board to discuss how the Center can provide information on the State's progress in meeting the statutorily required goal to have at least 45% of high school graduates complete a registered apprenticeship or another industry-recognized occupational credential.
10. Provided a detailed overview of the MLDS Center to Baltimore County's Office of Government Reform and Strategic Initiatives to determine whether the Center data can support their work.
11. Met with the Racial Equity Impact Unit from the Office of Policy Analysis, Department of Legislative Services to discuss ways to meet the data and research needs of the Racial Equity Impact Unit.
12. Attendance and participation on the *Apprenticeship 2030 Data Workgroup,* including providing data and analysis to support the work of the workgroup.
13. The Research Branch provided data on the demographic characteristics of high school students who vertically transferred in postsecondary for MHEC.

B. Data Requests

Request Process

In accordance with COMAR 14.36.04, the MLDS Center fulfills data requests[5] submitted by the public through an online form. A data request must be denied if it seeks data from only one data partner or is seeking data about a specific individual. To cut down on the number of improper requests, the MLDS Center updated the data request form to include screening questions:

[5] COMAR 14.36.04.02B.(3), a data request is a request for an aggregate data set created by linking two or more data tables. A data request does not include a request that requires analysis, application of advanced statistical methods, or creation of constructed variables.

1. Is your data request for information about a specific person? For example, a request for a school transcript for you or your child?
    a. Yes - the requester is informed that MLDS Center may only provide aggregate data in reports and in response to data requests and that this type of request must be denied.
    b. No
2. Does your data request require data from more than one Maryland agency?
    a. Yes
    b. No - the requester is informed that the MLDS must deny requests for data provided by only one partner agency and is provided contact information for the partner agencies.

Regardless of the outcome of the screening questions, a requester can still decide to submit a request. The goal of the screening questions was to help eliminate requests that the Center cannot fulfill. Unfortunately, the screening questions have not produced that outcome. There were a total of 33 data requests, of which 26 were denied[6] because they were for data from only one agency (usually MSDE) or were for information about a specific student. Below is a brief synopsis of the seven data requests the Center received this year that were fulfilled.

1. *Department of Human Services* - request for information on youth in foster care with college enrollment and whether they received financial aid and/or the foster care or homeless waiver. This request was to fulfill a reporting requirement in the Joint Chairman's Report.
2. *Baltimore City Council President Nick Mosb*y - request for the attendance records for Baltimore City students involved in the criminal justice system.
3. *Associates of Arts in Teaching (AAT) Council* - request for data on the pathway from the AAT Secondary Education degree to the public teacher workforce.
4. *Department of Public Safety and Correctional Services* - request for wages of correctional education participants who enroll in college.
5. *Howard County Community College* - requests for earnings and employment outcomes for students that departed Howard Community College with a degree/certificate or with more than 24 credits.
6. *Maryland Higher Education Commission* - request for workforce training completers at Maryland community colleges and their workforce outcomes. The request was to support MHEC dashboards on workforce training and was provided to Rutgers University to support the *Issue Brief: Maryland Noncredit Data Snapshot as part of Rutgers' Education and Employment Research Center's (EERC) State Noncredit Data Project* (SNDP).
7. *Kipp Harmony Academy (KHA)* - request for information on outcomes of students who attend KHA, a public charter elementary school in Baltimore City.

[6] In 2023, before the implementation of the screening questions, there were 27 denied requests and 7 fulfilled.

C. Support for State Agency Reporting Requirements

1. The MLDS Center provided data to MSDE's Division of Early Intervention and Special Education Services to support federal reporting requirements under the Individuals with Disabilities Act (IDEA) of 2004.
2. The MLDS Center provided data to MSDE's Office of College and Career Pathways to support state and federal reporting requirements under the Strengthening Career and Technical Education for the 21st Century Act of 2018 (Perkins V) on Career and Technical Education.
3. The MLDS Center produced and provided data tables to the Office of Adult Education and Literacy Services in the Division of Workforce Development & Adulting Learning. The data tables support federal reporting required by the U. S. Department of Education's Office of Career, Technical and Adult Education (OCTAE) and contribute to the National Reporting System (NRS). Specifically, the Center provided analysis to support Table 5 Core Follow-up Outcome Achievement.
4. The MLDS Center produced data tables for the Maryland Apprenticeship and Training Program (MATP) through the Division of Workforce Development and Adult Learning in the Maryland Department of Labor on the outcomes for Apprenticeship completers.
5. The MLDS Center produced data tables for the Maryland Department of Juvenile Services to support required annual reports.
6. The MLDS Center produced data tables for all 16 Maryland Community Colleges to support their annual Performance Accountability Reports which report on graduate earnings pre and post graduation, disaggregated by college and college major.

D. Research Series

The MLDS Center Research Branch hosts a virtual brown bag forum to bring together researchers, policy-makers, and practitioners to discuss in-progress research on education and workforce outcomes. The forum, which meets during the fall and spring semesters, focuses on research that is being conducted using the MLDS or topics of interest to the Center and its stakeholders. A link to the presentation slides is available on the MLDS website.[7]

1. Computer Science for All - The Impact of High School Computer Science Courses on College Majors and Earnings

This presentation by Dr. Jing Liu[8] discussed his study, using data from the MLDS, to provide the first causal evidence on the effects of expanding Computer Science (CS) course offerings in K-12 schools by estimating impacts on students' college major choice, degree attainment, and early career earnings. The staggered rollout of CS course offerings across high schools is leveraged to reduce selection effects. Results indicate that taking a CS course increases students' likelihood of declaring a CS major by 10 percentage points (pp) and receiving a CS BA degree by 5 pp.

[7] https://mldscenter.maryland.gov/ResearchSeries.html

[8] Dr. Jing Liu - Assistant Professor in the Department of Teaching and Learning, Policy and Leadership in the College of Education at University of Maryland and a member of the MLDS Center Research Branch

Evidence also suggests that CS course exposure raises students' likelihood of being employed and early career earnings. Importantly, female, Black, and low socioeconomics status students experience larger benefits of taking a CS course for CS BA receipt and earnings outcomes. Given their take-up of CS coursework is much lower compared with their peers, improving the representation of historically underrepresented groups in the CS field requires greater effort to reach these students as policymakers continue to expand CS curricula across K-12 schools.

2. How Justice System Involvement Impacts Educational Outcomes in Maryland

Dr. Erin Tinney[9] discussed recent research that demonstrates the importance of assessing how justice system involvement can impact educational outcomes and presented her current study examining this relationship within the 2013 ninth-grade cohort across the state of Maryland. First, propensity score matching is used to compare justice-involved and similarly situated non-justice-involved youth in their likelihood of suspension, graduation, and postsecondary enrollment. Second, this study explores how this relationship may differ between youth based on the number of days of school they miss because of their system involvement. Lastly, this study examines how the impact of justice system involvement on educational outcomes may differ between youth of different racial identities and sexes, including at the intersection of one's race and sex. Sensitivity analyses that assess the nuances of this relationship based on the severity of one's system were also conducted. The presentation included a discussion with John Irvine and Shane Hall from the Office of Research and Evaluation at the Maryland Department of Juvenile Services (DJS) who commented on how this research informs policy and practice.

3. Expanding Pathways into Teaching Particularly for Individuals of Color: Descriptive and Causal Evidence

Dr. David Blazar[10] presented his research, using over 15 years of linked longitudinal data from the MLDS Center, which examines pathways from high school into teaching and potential barriers that exist. The presentation also included a discussion of the causal impact of the Teacher Academy of Maryland as one strategy to overcome some of these barriers. A discussion focused on next steps in research to reduce barriers, while increasing the diversity of the Maryland teaching workforce.

[9] Erin Tinney, Ph.D., was a graduate researcher with the Department of Criminology and Criminal Justice at the University of Maryland and is currently a research statistician at the Bureau of Justice Statistics, U.S. Department of Justice.

[10] Dr. David Blazar is an Investigator with the MLDS Center and is Assistant Professor of Education Policy and Economics at the University of Maryland.

4. Wage Trajectories for High School Graduates, College Completers, and Those with Some College Experience

Dr. Mathew Uretsky[11] and Dr. Dawnsha Mushonga[12] presented their study investigating the wage trajectories of Maryland high school graduates, comparing those who completed associate's or bachelor's degrees, those with some college but no degree, and those who never attended college. Using discontinuous growth curve modeling with linked-administrative data from the Maryland Longitudinal Data System (MLDS), they followed an 8th-grade cohort through their educational and workforce experiences over 31 quarters (almost 8 years) post-high school graduation. By analyzing these pathways, the research provides key insights into wage disparities linked to educational attainment. The discussion focused on implications for research and policy.

E. Conferences and Presentations

The MLDS Center staff and Research Branch members participated in numerous conferences where they presented research, best practices, or learned of new and innovative processes for conducting research and managing longitudinal data systems.

1. Society for Social Work Research Conference - Dr. Dante de Tablan[13] presented research on student mobility and long-term outcomes at the Society for Social Work Research conference.

2. Quantitative Research Methods Conference, UMCP - Dr. Angela Henneberger presented on the use of state longitudinal data systems for policymaking at the University of Maryland College Park Quantitative Research Methods Conference.

3. Association for Education Finance and Policy (AEFP) Conference - Four presentations at the AEFP Conference focusing on using MLDS data for long-term outcomes:

- Dr. Henneberger[14] - The Goodness of Mixed Methods Research for Policy and Practice
- Dr. Dea Mulolli[15] - Practical Considerations on How the Teacher ICCs Vary/Co-Vary with School Characteristics
- Dr. Jing Liu - Computer Science for All

[11] Dr. Mathew C. Uretsky, Ph.D., is an investigator with the MLDS Center and an Assistant Professor at Portland State University. Dr. Uretsky received his Ph.D. from the University of Maryland School of Social Work in 2016 and where he remains a faculty affiliate.

[12] Dawnsha Mushonga, Ph.D. is an Associate Professor and Executive Director of the School of Health & Human Services at the University of Baltimore

[13] Dante de Tablan , Ph.D. graduate from the University of Maryland, School of Social Work and currently the Vice President, United Way Ben Centers and Neighbors

[14] Angela Henneberger, Ph.D. - Director and Principal Investigator of the MLDS Center Research Branch and Research Associate Professor at the University of Maryland School of Social Work

[15] Dea Mulloli, Received her Ph.D. from Western Michigan University where she continues to work on an NSF funded grant

- Dr. Jordan Rickles (with MSDE, MHEC, and MACC) - The Adoption of a College and Career Readiness Standard in Maryland

4. Research Branch Methods Seminar - Dr. Eric Hedberg[16] and Dr. Dea Mulolli presented a methods seminar on multilevel models incorporating the teacher level (students nested in teachers and teachers nested in schools) to the research team.

5. Johns Hopkins University - Dr. Bess Rose provided an overview of the MLDS to graduate students at Johns Hopkins University.

6. University of Maryland College Park - Presentation to Faculty - Dr. Erin Tinney, University of Maryland, College Park (UMCP) presented her research on educational outcomes for justice involved students to faculty members at UMCP.

7. American Educational Research Association (AERA) Conference - Two presentations at the AERA conference focused on using MLDS data for long-term outcomes.

- Mr. Juan Cortes[17] - Equitable Indicators? A State-Level Examination of How Well Ninth-Grade Status Measures Distinguish Educational Outcomes Across District- and School-Level Contexts.
- Dr. David Miller[18] - Retention and Attrition of Early Career Music Teachers.

8. Annie E. Casey Foundation - Dr. Erin Tinney was invited to present her research on educational outcomes for DJS-involved students to staff at the Annie E. Casey Foundation.

9. Society for Prevention Research - Dr. Henneberger organized a special interest group on using administrative data for the Society for Prevention Research. Ross Goldstein[19] also participated in the special interest group.

10. Portland State University - Dr. Mathew Uretsky presented his research on pathways and wage trajectories to faculty and staff at Portland State University.

[16] Eric Hedberg, Ph.D. - Researcher with ABT Associates
[17] Juan Cortes - Graduate student and PhD candidate at the Johns Hopkins University, College of Education
[18] David Miller - Received his Ph.D. from the University of Maryland and is now an Assistant Professor in the School of Music at the University of Kentucky.
[19] Ross Goldstein is the Executive Director of the MLDS Center

11. 15th Annual Baltimore Data Day - Dr. Bess Rose and Ms. Molly Abend[20] presented an overview of the MLDS Center at the Baltimore Data Day. The event was hosted by the Baltimore Neighborhood Indicators Alliance and was designed to help communities expand their capacity to use data and technology. Following the presentation, numerous stakeholders reached out to schedule a time to meet and discuss using the MLDS for future projects and analysis.

12. P-20 Collaborative Recruitment and Retention Work Group - Dr. Henneberger and Dr. David Blazar discussed MLDS Center research on teacher diversity with stakeholders from the Work Group.

13. University System of Maryland - Dr. Henneberger attended the USM ABCs Advisory Council Meeting focused on equitably improving postsecondary student outcomes by leveraging data and implementing, scaling, and rigorously evaluating evidence-based activities to support data-driven decisions.

14. National Institute of Justice (NIJ) - Dr. Henneberger presented at the annual meeting of the National Institute of Justice (NIJ) meeting in Pittsburgh, PA. The presentation focused on state longitudinal data systems as a tool for juvenile justice research topics.

15. Society for Research on Educational Effectiveness (SREE)

- Dr. Blazar presented his research, Grow-Your Own Teachers Starting from High School: Effects of the Teacher Academy of Maryland, at the SREE conference.
- Ashani Jayasekera[21] and Dr. Tracy Sweet presented their research using MLDS data and machine learning algorithms at the Society for Research on Educational Effectiveness.
- Dr. Bess Rose attended data equity workshops hosted by SREE.

16. Data Quality Campaign

- Mr. Ross Goldstein, MLDS Center Executive Director, and Dr. Angela Henneberger, MLDS Center Research Branch Director and Associate Research Professor, University of Maryland School of Social Work, were invited to join the Data Quality Campaign (DQC) and a small group of Maryland state leaders for a visioning session around the future of data in Maryland. This convening served as an initial "blue-sky" thinking session, focused on developing a vision to redefine and advance Maryland's data ecosystem, in service of the people of Maryland.

[20] Molly Abend is the Data Management Coordinator for the MLDS Center and the liaison with the State Department of Education.
[21] Ashani Jayasekera, graduate student and research assistant, University of Maryland, College Park

- Mr. Ross Goldstein attended a multi-state convening hosted by the Data Quality Campaign. The meeting provided a forum for federal and state leaders to hear directly from each other about priorities for and challenges to statewide longitudinal data systems.

17. National Association of State Student Grant & Aid Programs (NASSGAP) - Dr. Ann Kellogg[22] presented with Mr. Al Dorset, Director of Financial Aid for MHEC at the annual NASSGAP conference. The presentation, *Effectively Using Data to Demonstrate Return on Investment*, focused on how MLDS Center staff developed dashboards and reports that help policy makers quantify the return on investment in state financial aid programs.

18. American Public Human Services Administration Meeting - Dr. Terry Shaw led a presentation that included Drs. Angela Henneberger and Mathew Uretsky at the annual meeting of the American Public Human Services Administration. The presentation focused on using cross-sector data to better understand policy and practice in child welfare.

19. Maryland Equitable Justice Commission - Dr. Erin Tinney was invited to present her research on educational outcomes for DJS-involved students to members of the Maryland Equitable Justice Commission (MEJC).

20. American Society for Criminology - Dr. Erin Tinney presented her research on educational outcomes for DJS-involved students at the annual meeting of the American Society for Criminology.

21. Stanford University - Dr. Catherine Mata presented her research on suspensions and arrests in Maryland to researchers at Stanford University.

22. Association for Public Policy and Management - Dr. David Blazar presented research on the Teacher's Academy of Maryland as a pathway for diversifying the teacher workforce.

F. Revised Data Suppression Policy

Education Article § 24-703(h), Annotated Code of Maryland, limits the MLDS Center to only using aggregate data in the release of data in reports and in response to data requests. The law also specifies that data that may be identifiable based on the size or uniqueness of the population under consideration may not be reported by the Center. The Center implemented

[22] Ann Kellogg, Ph.D. - Director of Reporting Services for the MLDS Center and Liaison to the Maryland Higher Education Commission

that requirement by following the guidance of the National Center for Education Statistics in its technical brief entitled, *Statistical Methods for Protecting Personally Indefinable Information in Aggregate Reporting*. That guidance states that values less than 10 (whether directly disclosed or that can be derived) should be suppressed.

That bright line approach is straightforward and provides strong assurance against inadvertent disclosure of personal information. However, the approach does not allow for exceptions when disclosure risk is minimal. It also does not provide a process for a more nuanced approach that would allow the Center to weigh disclosure risk against the needs of policy makers to have comprehensive and meaningful information to guide decision making. As a result, over time, the Center established exceptions to the strict approach established in the NCES guidance document. In recognition of the changes made over time and the need for a clearly articulated policy, Center staff began a process to develop a new suppression policy. This new policy starts with the NCES standard, documents exceptions the Center has been using, and establishes an ongoing and transparent process for addressing suppression moving forward.

The proposed suppression policy states that "the MLDS Center will balance the mission to provide meaningful information to Maryland stakeholders with the need to protect individuals' privacy." The policy document includes background information on the MLDS Center's reporting and compliance requirements and procedures for determining if data "may be identifiable based on the size or uniqueness of the population" and therefore must be suppressed. As mentioned above, the baseline approach is to suppress any value less than 10. The policy also explains that as part of the MLDS Center's suppression procedures, a Disclosure Review Advisory Board will be implemented to help assess when to relax the baseline approach in cases where the risk of disclosure is minimal and there is a need for more complete reporting. The new Suppression Policy (see Appendix 1) was approved by the MLDS Center Governing Board at their September 15, 2024 meeting.

G. Published Research

The MLDS Center Research Branch members had seven research papers published in prestigious academic journals.

1. *Education Finance and Policy* published an article by Drs. Jane Arnold Lincove[23], Catherine Mata[24], and Kalena E. Cortes entitled: *A Bridge to Graduation: Post-Secondary Effects of an Alternative Pathway for Students Who Fail High School Exit Exams.*

[23] Jane Lincove, Ph.D. - Investigator with the MLDS Center and Associate Professor of Public Policy at UMBC
[24] Catherine Mata - Received her Ph.D. from the University of Maryland, Baltimore County and is currently a Postdoctoral Research Associate at the Annenberg Institute at Brown University

2. *Research in Higher Education* published a study conducted by Dr. Taylor Delaney - *2-Year or Not 2-Year? The Impact of Starting at Community College on Bachelor's Degree Attainment.*
3. *Journal of Research in Music Education* published two articles:
    a. One by Drs. Ken Elpus[25] and David Miller entitled: *Do declining enrollments predict teacher turnover in music?*; and
    b. On by Dr. David Miller entitled: *Public high school music education in Maryland: Issues of equity in access and uptake*
4. *Journal of Music Teacher Education* published an article by Dr. David Miller entitled: *The Workforce Entry and Teaching Responsibilities of New Music Education Graduates: Evidence From a State Longitudinal Data System*
5. Arts Education Policy Review published an article by Dr. David Miller entiteld: The retention and attrition of early career music teachers: a survival analysis.
6. Drs. Mushonga, Uretsky, Rose, and Henneberger published a study in *Applied Developmental Science: Linking homelessness in secondary school to postsecondary and early labor market outcomes in Maryland using a continuum of risk framework*.

Additionally, national organizations published five briefs and blogposts to highlight research from the MLDS Center Research Branch:

7. The *Brookings Institution* published a blogpost[26] written by Dr. Jing Liu and Dr. David Blazar about their MLDS research on the Computer Science for All initiative in Maryland.
8. The Brookings Institution published a research brief[27] written by Drs. Jane Lincove and Catherine Mata on Maryland's suspension ban.
9. *The Maryland Equity Project* published Dr. David Blazar's research on *Do grow-your-own programs work? Evidence from the Teacher Academy of Maryland*.[28]
10. *The Maryland Equity Project* published Dr. David Blazar's research on *Disparate Pathways for Teachers.*
11. *The Maryland Equity Project* published Dr. Jing Liu's research on *Computer science for all? The impact of high school computer science courses on college majors and earnings*.[29]

Additionally, several research studies from the MLDS Center Research Branch were published on Ed Working Papers:

12. Dr. David Blazar and colleagues: *Disparate Pathways*
13. Dr. David Blazar and colleagues: *Do Grow Your Own Programs Work*
14. Dr. David Blazar and colleagues: *Pathways into the CTE Teaching Profession*
15. Dr. Jane Lincove and colleagues: *The Effects of a Statewide Ban on School Suspensions*
16. Dr. Jing Liu and colleagues: *Computer Science for All*

[25] Ken Elpus, Ph.D. is a Professor of Music Education and Associate Director for Faculty Affairs & Graduate Studies, School of Music, University of Maryland, College Park

[26] https://www.brookings.edu/articles/how-computer-science-for-all-initiatives-affect-students-college-and-career-outcomes/

[27] https://www.brookings.edu/articles/what-are-we-learning-from-school-suspension-bans/

[28] https://education.umd.edu/sites/default/files/uploads/inline-files/MEP%20Brief_Grow%20Your%20Own%20Programs.pdf

[29] https://umd.us12.list-manage.com/track/click?u=17d8362a7b9995cf96b1a0e4f&id=f4157a93f1&e=23d46390a5

Finally, the synthetic data project team collaborated with the SLDS state support team to update the SLDS issue brief on the outcomes of the synthetic data project. The brief can be found at https://slds.ed.gov/#communities/pdc/documents/22743.

H. Grant Funding

The Institute of Education Sciences (U.S. Department of Education) awarded researchers from the MLDS Research Branch one of five new grants under the Using Longitudinal Data to Support State Education Policymaking (ALN 84.305S).[30] The team will receive $966,892 for the 3-year project. The Maryland project, entitled, *Using Maryland SLDS to Strengthen and Diversify the Teacher Workforce through High School to Career Pathways,* will be led by Dr. Jane Lincove. The team includes Dr. Emily Dow, Assistant Secretary for Academic Affairs at the Maryland Higher Education Commission, Dr. Angela Henneberger, and Dr. David Blazar.

Google, LLC awarded Dr. Jing Liu just under $250,000 in unrestricted funds to continue work on the MLDS project: *Access, Impact, and the Computer Science Teacher Pipeline: A Systematic Study on the Expansion of Computer Science Courses in Maryland's High Schools.*

Arnold Ventures awarded Dr. Jing Liu $350,000 to conduct research using the MLDS on, *The Impact of Industrial Credentials on Students' Education and Labor Market Outcomes-Evidence from Microsoft Certifications*.

I. Consulting with Other States

The MLDS Center, which has now been in operation for 11 years, is frequently cited as a model for other states implementing longitudinal data systems. The Center's innovative research, governance structure, data management, and other processes and procedures result in staff of the Center serving as a resource for colleagues in other states.

Louisiana - Mr. Ross Goldstein and Ms. Tejal Cherry[31] provided technical system information and an overview of organizational management for staff from Louisiana who are working on establishing a longitudinal data system.

Washington D.C. - Dr. Ann Kellogg met with representatives from the Office of the State Superintendent of Education in Washington DC on February 21st to answer questions about the development of the Center's dashboard on *Maryland College Graduates Employed as Public School Teachers*.

[30] https://ies.ed.gov/funding/pdf/2025_84305S.pdf
[31] Tejal Cherry, Chief Information Officer for the MLDS Center.

New York - Mr. Ross Goldstein and Ms. Molly Abend met with the New York State Education Department to provide an overview of the MLDS data governance structure.

Iowa - Mr. Ross Goldstein and Ms. Molly Abend met with representatives from Iowa on July 1st to provide insights on data collection policies and procedures.

Virginia - Dr. Ann Kellogg and Ms. Molly Abend met with staff from the Virginia Community College System to provide information on new data collection considerations and processes.

Nebraska - Mr. Ross Goldstein and Ms. Molly Abend met with representatives from a consulting firm that is working to provide information for Nebraska Department of Education's project on data sharing for systems-involved youth.

J. Post Secondary Education Outcome Explorer

During the 2024 Legislative Session, the General Assembly passed Senate Bill 444 (Chapter 64, 2024), entitled, *Maryland Longitudinal Data System Center - Student Information - United States Census Bureau*. The bill allows the MLDS Center Governing Board to authorize the Center to send student information to the U.S. Census Bureau. Providing Maryland college student information to the U.S. Census Bureau for inclusion in the Post Secondary Outcome Explorer (PSEO) would allow Maryland colleges and universities to observe workforce outcomes nationally (compared to the state results that the MLDS Center provides). Prior to the MLDS Center Governing Board making a determination on whether to authorize the Center to send student information to PSEO, the Maryland Higher Education Commission (MHEC) informed the Governing Board that they would provide student data to PSEO and provided the following explanation:

> *At this time, MHEC believes that it is the appropriate agency for preparing the data files and sharing data with PSEO for the following reasons: (1) One of the important benefits derived from being the agency sharing data is PSEO Coalition membership. Members of the PSEO Coalition attend regular meetings with Coalition members and receive technical assistance with collections and data use, and engage with Census staff to influence future directions for data collection and data use, including the development of policy-relevant reports. These opportunities have more direct and immediate value to MHEC as opposed to MLDSC as MLDSC does not establish higher education policy. (2) As the state's higher education authority, MHEC believes it should retain control over the data definitions related to college enrollment and college graduation that will drive the data shared with PSEO. MHEC also believes it should prepare the data files to be shared, share the constructed files, validate the data from PSEO, and serve as the repository for all shared data. The process for preparing the files to be shared is complex and requires many critical decisions, decisions that should be made by the state's higher education authority.*

K. Project Tracking

In response to a request from the Research and Policy Advisory Board, the Research Branch created a project tracking page for the Center's website.[32] The Center has a process for reviewing and managing research projects proposed by the MLDS Center Research Branch and external researchers. All projects must address a Maryland policy question and provide a product (such as a research brief, research paper, or presentation) directly to the Center or one of the partner agencies. The project tracking page is meant to help agencies and the public keep track of all the ongoing projects and their status. The page provides the title of the name of the project, the principal investigator, the status of the project, the type of Center product provided and a link to any relevant articles or publications resulting from the research project.

L. Self Service Portal - Postsecondary Outcomes

Each year, the MLDS Center receives data requests from Maryland colleges and universities on the workforce outcome of their graduates. Instead of fulfilling individual requests, the Center is building a self service portal that will allow the institutions to create their own report based on selected criteria and disaggregations. The portal will be called, MD-CLaWE (Maryland Colleges' Labor Sector and Wage Explorer). A prototype of MD-CLaWE has been demonstrated to the Research and Policy Advisory Board. The MD-CLaWE release date is expected in early 2025.

M. Research Briefs

The Research Branch has established a new template to help researchers present their research findings in a succinct and user friendly format that can be easily consumed by policymakers and practitioners. Research branch members drafted three research briefs for the MLDS Center website:

- *"Grow Your Own" Programs Can Help Expand and Diversify the Teacher Workforce*
- *Diversifying the Teacher Workforce Requires Race-Conscious Approaches that Start Early*
- *The Effects of Maryland's Ban on School Suspensions*

[32]To access the project tracker, use this link https://mldscenter.maryland.gov/ResearchAdministration.html and then select Project Tracking from the left hand menu.

Section 2. List of All Studies Performed by the Center

2.1 Research

A. Machine Learning

Dr. Tracy Sweet and her team at UMCP continue to study applied uses of common machine learning algorithms to MLDS K-12 and postsecondary data. Currently, the research team is using machine learning and MLDS data to study whether student outcomes differ between 4-year college students who take different numbers of credits per semester. This research will help inform higher education policies, such as the 15 to Finish initiative.

B. Understanding Foster Care Students

With the inclusion of child welfare data, researchers now have the opportunity to develop a more complete understanding of the educational processes and educational outcomes for students who are in the state supervised child welfare system (foster care). Specifically, Dr. Terry Shaw will use the MLDS to provide the Department of Human Services (DHS) with a better understanding of foster care student school attendance and absenteeism, disciplinary incidents (e.g., suspensions), presence of enhanced support (e.g., IEP/504 plans), school transitions (stability of school enrollments/school mobility), as well as long-term educational outcomes (e.g., high school graduation rates and college enrollment/persistence/completion), which will help DHS better serve the population of children in foster care.

C. Career and Technical Education

The Blueprint for Maryland's future established a goal that 45% of Maryland high school graduates complete the high school level of a registered apprenticeship or another industry-recognized credential. The Maryland Career and Technical Education (CTE) Committee (under the Governor's Workforce Development Board) is tasked with developing and implementing the initiatives required to achieve the 45% goal. In support of their work, they requested Dr. Ting Zhang to conduct data informed research as follows: (1) An extensive analysis of the educational and professional pipeline for CTE concentrators and completers with a focus on examining attributes and disparities in demographics, socioeconomic status, curriculum enrollment and performance, as well as school attributes, along with CTE-related credentials; and (2) A comprehensive follow-up pathway analysis of former CTE concentrators and completers to examine employment and earnings patterns of former CTE concentrators and completers over a specific timeframe, controlling for demographic and socioeconomic heterogeneities.

D. Early Access to Computing Education

Dr. Meagan Garvin[33], Dr. Jayce Warner[34], and Mr. Cameron McCann[35] are working on a research project designed to investigate the relationship between students' computing experiences in K-12 and higher education within a framework to assess equity across multiple aspects of education. Using the MLDS they are conducting a longitudinal analysis that tracks students and their computing experiences across years, from 6th grade to college. This analysis will help identify which K-12 course taking patterns lead to more participation in computing in higher education and how these relationships differ for distinct groups of students with a specific focus on black women.

E. Grade Variation and Long-term Outcomes

Dr. Nolan Pope[36] and graduate students have been pulling data on middle school and high school students' courses, grades, teacher assignments, and test scores, and linking these students to their later life outcomes including high school graduation, college enrollments, and earnings. This has allowed them to create analytic files for their project on multi-dimensional grade variation and long-term outcomes.

F. Comptroller Data Analysis

The MLDS Center is permitted to send student data to the Maryland Comptroller which matches the student data to tax information and produces aggregate data on the amount of earnings reported by the students. Dr. Bess Rose, MLDS Center Statistician, reviewed the data from the Comptroller and compared the demographics of individuals who have and do not have data from the Maryland Department of Labor. Patterns revealed systematic differences, and Dr. Rose provided a memo to establish internal guidance for research examining labor market outcomes with MLDS data.

G. DJS-Involved Students and Workforce Outcomes

Dr. Henneberger worked with DJS and Dr. Wade Jacobsen and Abbey Potter at UMCP to create research questions focused on examining educational pathways and workforce outcomes for DJS-involved students. Progress has been made on creating analytic data files for defining arrests and defining high school and postsecondary outcomes. Postsecondary outcomes will be examined as a mechanism that may relate to workforce outcomes.

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[33] Meagan Garvin, Ph.D., is the Associate Director of the Computing Education Research and Evaluation Office: Maryland Center for Computing Education (MCCE), University System of Maryland

[34] Jayce Warner, Research and Evaluation Director, Gibson Consulting

[35] Cameron McCann, graduate student, University of Texas, Department of Educational Psychology

[36] Nolan Pope, Ph.D., is an Investigator with the MLDS Center and is an Assistant Professor in the Department of Economics at the University of Maryland.

H. Opportunity Gap and Postsecondary Outcomes

Dr. Frim Ampaw at Morgan State University worked with her graduate student Jerome Anderson to define the opportunity gap for Black students in Maryland. She conducted preliminary analyses examining rates of students taking Algebra 1 by the end of ninth grade and dual enrollment and advanced courses in high school by race and district.

2.2 Dashboards[37]

A. Maryland Public High School Graduates: College and Workforce Outcomes

This series of dashboards examines the college-going patterns of Maryland public high school graduates, whether they obtain a college degree by age 25, and the median quarterly wages for high school graduates with and without a college degree by age 25. Results across the dashboards are available by gender, race, ethnicity and economic status. This year, in addition to adding an additional year of data, the dashboards were expanded to include two additional college enrollment patterns, the rate of variation between the living wage and median quarterly wage, and an additional financial aid fund source, the Maryland Community College Promise Scholarship. The series of dashboards includes:

1. College Enrollment Overview
2. College Enrollment and Degree Trends
3. Median Quarterly Wage Trends
4. College Enrollment by Residency (In-State vs. Out-of-State)
5. College Enrollment by Institution Type
6. College Enrollment, Retention, Degree Attainment and Wages by Financial Aid Source

B. Maryland College Graduates Employed as Public School Teachers

This series of dashboards explores the percentage of bachelor's degree graduates from Maryland 4-year colleges and universities that become employed as novice teachers in Maryland within one year of graduation. The series also includes the time to employment as novice teachers. Finally, the series explores two geographic employment trends: the percentage of novice teachers who graduated from a Maryland 4-year college or university and previously attended a Maryland public K-12 school; and the percentage of novice teachers who graduated from a Maryland 4-year college and are employed as teachers in the same county as the college from which they graduates.

C. Dual Enrollment Dashboards

The Center website provides a comprehensive series of dashboards on *Dual Enrollment Trends of Maryland Public High School Students*. During the 2023 legislative session, the statutorily mandated *Annual Dual Enrollment Report* was eliminated and these dashboards, which must be

[37] https://mldscenter.maryland.gov/Dashboards.html

updated annually, are provided in place of the report. The series of dual enrollment dashboards includes:

1. Statewide dual enrollment trends - this set of dashboards provide dual enrollment rates statewide and by grade level, gender, race/ethnicity, and economic status. The dashboards also explore the type of high school course of study among dual enrollment students and the percentage of dual enrollment students who enroll in college.
2. County dual enrollment trends - this set of dashboards provides dual enrollment trends for the local school system selected by the user. The dashboards include an overview of dual enrollment for the local school system and disaggregations by gender, race and ethnicity, and by grade level. The dashboards also provide college enrollment patterns of dual enrollment students.
3. Dual Enrollment Course Offerings - this new interactive dashboard provides information on dual enrollment courses. Users can select the report year, dual enrollment year, the local school system, and course information. For example, a user can obtain a listing of all 13 CTE related dual enrollment courses (including the course code and title) offered in Baltimore County during the 2022-2023 school year.

D. Homeless Youth and Higher Education Participation

Education Article, § 24-703.1(c), Annotated Code of Maryland, requires the MLDS Center to develop a clear and easy–to–understand graphic data dashboard that is published annually on the Center's website with information regarding the experience homeless youth and how out–of–home placement affected participation in higher education. The dashboard provides information on homeless youth enrollment generally and by in-state versus out-of-state and by institution type. The dashboard[38] also provides the source of financial aid and college graduation rate. Finally the dashboards provide higher education participation by region and disaggregated by race, ethnicity, and gender.

E. Foster Care and Higher Education Participation

Education Article, § 24-703.1(c), Annotated Code of Maryland, also requires the MLDS Center to develop a clear and easy–to–understand graphic data dashboard that is published annually on the Center's website with information regarding the experience foster care youth (specifically youth experiencing out–of–home placement) and how foster care affected participation in higher education. The dashboard[39] provides information on foster care youth enrollment generally and by in-state versus out-of-state and by institution type. The dashboard also

[38] https://mldscenter.maryland.gov/Dashboards.html - select Homeless and Higher Education Participation from the dashboard menu.

[39] https://mldscenter.maryland.gov/Dashboards.html - select Foster Care and Higher Education Participation from the dashboard menu.

provides the source of financial aid and college graduation rate. Finally the dashboards provide higher education participation by region and disaggregated by race, ethnicity, and gender.

2.3 Reports

A. Career Preparation Expansion Act Report

The MLDS Center, in partnership with the Governor's Workforce Development Board, is required by the Career Preparation Expansion Act (see Ed. Art. § 21-206, Annotated Code of Maryland) to produce a report on the following outcomes for high school graduates five years after graduation: wages earned, hours worked per week, and the industry of employment. The 2024 report was completed and submitted to the General Assembly and the Governor and is available on the MLDS Center website.[40]

This year a supplement to the 2021 Report on high school graduates from 2015 was also produced. The 2021 report focused on wages for the 2015 cohort in 2020, at the onset of the economic shutdown due to COVID-19. This is the second supplement to the 2021 report. This supplement focuses on the impact of the economic shutdown by race, ethnicity, gender and economic status.

B. Blueprint Teacher Preparation and Diversity Report

Pursuant to the Blueprint for Maryland's Future, Chapter 33 of 2022 (see Education Article § 5-413, Annotated Code of Maryland), the MLDS Center, in consultation with MSDE and MHEC, is required to produce a report on the progress made in increasing the preparation and diversity of teacher candidates and new teachers in the State as required by the Blueprint for Maryland's Future. The report, entitled, *Annual Report on Progress in Increasing the Preparation and Diversity of Teacher Candidates and New Teachers*, was submitted on time to the Accountability and Implementation Board (AIB), the General Assembly, and the Governor on July 1, 2024. A full copy of the report is available on the MLDS Center website.[41]

C. Free Application for Federal Student Aid (FAFSA) Completion

The Student FAFSA Completion Report (2024) is a requirement under Education Article § 7-212, Annotated Code of Maryland, which requires the MLDS Center to annually produce the report on the submission and completion of the Free Application for Federal Student Aid (FAFSA) by Maryland high school students. Specifically, the MLDS Center is to report, disaggregated by

[40] https://mldscenter.maryland.gov/egov/publications/CenterReports/CareerPreparationExpansionAct/CPEA_2024_final_suppressed.pdf

[41] https://mldscenter.maryland.gov/egov/publications/CenterReports/ProgressinIncreasingthePreparationandDiversityofTeacherCandidatesandNewTeachers/2024_BlueprintTeacherDiversityReport_Final.pdf

county and student characteristics: 1. The number of students who completed and submitted the FAFSA in the immediately preceding school year; 2. The number of students who did not complete and submit the FAFSA in the immediately preceding school year; and 3. The number of students who completed the FAFSA by the deadline for State financial aid. The report was submitted as required and is available on the MLDS Center website.[42]

D. Evidence of Brain Gain in Maryland

The MLDS Center updated and expanded the existing interactive report on Brain Gain in Maryland. Brain gain occurs when students who reside outside of Maryland come to Maryland for college and remain in the workforce after college graduation.

E. Working While in College

The MLDS Center updated and expanded the existing interactive report on *Working While in College*. The report explores the rate at which undergraduates, who are enrolled in college full-time, work and the wages earned. The results are presented by college.

Section 3. Data Determined to be Unnecessary

There were no data elements identified for removal from the System.

Section 4. Proposed or Planned Expansion of Data

All data added to the MLDS are presented to and approved by the MLDS Governing Board and then catalogued in the Center's online data inventory. The data inventory was updated this year to provide better functionality.[43]

This section provides an explanation and listing all of the new data approved by the Governing Board during the 2024 calendar year.

A. Department of Service and Civic Innovation

The Maryland Department of Service and Civic Innovation (DSCI) is a new agency implementing two state funded service streams: Maryland Corps and the Service Year Option. The application portal for the first cohort of Maryland Corps/Service Year Option members opened in August of 2023. The identity-related data elements proposed for addition are below.

1. Unique ID
2. First Name
9. Zip Code
10. Race

[42] https://mldscenter.maryland.gov/CenterReports.html - select Student FAFSA Completion Report from the menu.
[43] https://mldscenter.maryland.gov/DataInventory.html - select "View the MLDS Data Inventory"

3. Preferred Name
4. Last Name
5. Middle Name
6. Date of Birth
7. Address 1
8. Address 2
11. Ethnicity
12. Gender
13. Country of Birth
14. Primary Language
15. Veteran
16. Military Family

B. Maryland Higher Education Commission

The Maryland Higher Education Commission (MHEC) has added new elements to their established data collections: the Enrollment Information System (EIS); the Degree Information System (DIS), and the Financial Aid Information System (FAIS). All of these new elements are optional to report in 2023-2024, but will be required for 2024-2025. The Postsecondary data elements approved for inclusion in the Data Inventory are listed below.

1. IPEDS Degree (DIS)
2. Prison Education Program Degree (DIS)
3. Prison Ed. Program Enrollment (EIS)
4. Last Name (FAIS)
5. First Name (FAIS)
6. Middle Name (FAIS)
7. Generational Suffix (FAIS)
8. Birth Date (FAIS)
9. Student Aid Index (FAIS)

The Maryland Higher Education Commission (MHEC) has added a new element to their established student-level data collections: Degree Information System (DIS), Enrollment Information System (EIS), End of Term System (EOTS), External Credit System (ECS), Financial Aid Information System (FAIS), Maryland Approved Program Completer System (MAPCS), Student Course Registration System (SCRS), Workforce Training Completers System (WTCS), and Workforce Training Registration System (WTRS). The data element, Institution-Assigned Student Identifier, replaces Local Campus Student ID. For 2024-2025 the new element is optional, but will be required in 2025-2026. The MLDS Governing Board approved the inclusion of this data element in the MLDS Data Inventory.

1. Institution-Assigned Student Identifier

MHEC is also adding a data element to the Degree Information System (DIS) collection. The data element, Advanced Standing, indicates a student has advanced standing through coursework or received a degree prior to graduating from high school. For 2024-2025 the new element is optional, but will be required in 2025-2026. The MLDS Governing Board approved the inclusion of this data element in the MLDS Data Inventory.

1. Advanced Standing

C. Maryland State Department of Education

The Maryland State Department of Education (MSDE) collects enrollments and attendance data as part of their September 30th Attendance collection. The following two data elements were

previously approved and collected as part of the standalone Census collection, but now must be approved for inclusion in the September Attendance collection. The MLDS Governing Board approved the inclusion of these data elements in the MLDS Data Inventory.

1. Geolocation ID
2. Maryland Neighborhood Tier (MNT)

D. Department of Public Safety and Correctional Services (DPSCS)

The Division of Correction (DoC) within DPSCS collects data on inmates who have been sentenced to a term of 18 months or longer. The data elements proposed for inclusion are limited to identity of the inmate (for data matching purposes), the inmate's release date, and reason for release. The Governing Board approved the inclusion of the following data elements in the MLDS Data Inventory.

1. State Identification Number
2. Control Number
3. First Name
4. Middle Name
5. Last Name
6. Generational Suffix
7. Social Security Number
8. Date of Birth
9. Release Date
10. Release Reason

The Governing Board also approved the following additional set of data from DPSCS for inclusion in the Data Inventory.

1. Admission Date
2. Number of Prior Incarcerations
3. Type/Category of Offense
4. State of Residence and Commitment

E. External Data

External data are data that are not part of the Center's regular data collections and are being added for a unique study or program evaluation. When the study or evaluation is complete, the data will be removed from the MLDS.

Long-term follow-up of a PBIS RCT: impact on academics, behavior, and juvenile justice involvement

Researchers from the University of Maryland School of Social Work received approval from the MLDS Center Governing Board to add temporary external data to the MLDS to evaluate the long-term impacts of a multi-tiered system of support framework called Positive Behavioral Interventions and Supports (PBIS). The data consist of student-level, staff-level, and school-level elements. The data elements added to the MLDS data inventory include:

Student-level

1. Student Grade Check on Consistency
2. School Membership Changed
3. Group Membership Changed
4. Month of Collection
5. TOCA* - Bullying
6. TOCA* - Victimization

Staff-level

1. Gender Field Number 2
2. Race Field Number 2

*TOCA - Teacher observation of classroom adaptation

School-level

1. Fidelity of Implementation - Expectations Defined
2. Fidelity of Implementation - Behavioral Expectations Taught
3. Fidelity of Implementation - System for Rewards
4. Fidelity of Implementation - Responding to Behavior
5. Fidelity of Implementation - Decision Making
6. Fidelity of Implementation - Management
7. Fidelity of Implementation - District Support

An Evaluation of Intensive High School Mentorship for Youth at Risk of Dropping Out

Researchers from the University of Notre Dame requested the inclusion of temporary external data to the MLDS. The data will facilitate their evaluation of Thread of Baltimore, Maryland's high school mentorship program, an intervention designed to assist underperforming students at risk of dropping out of school. The Governing Board approved the following data elements as temporary additions to the Data Inventory.

1. First Name
2. Last Name
3. Student ID
4. Date of Birth
5. Gender
6. School
7. Year
8. Enrolled
9. Ineligible
10. Lowest Quartile (GPA)
11. Cutoff (recruitment list)
12. Interview
13. Rankf
14. Rankm
15. Selected
16. Recruit Through
17. Contacted
18. Unable to be Contacted
19. Rank
20. Block
21. Block ID
22. Sample

Section 5. Recommendations Made by the Governing Board

1. There are two future requirements that will have important impacts on MLDS data: (1) Education Article § 24-702(c) requires the Center to unlink an individual's workforce record 20 years after that individual's last education record; and (2) the Center's data agreements with data sharing partners requires the Center to dispose of personally identifiable data 20 years after receipt of that data from the data sharing partner. The Governing Board recommends that the MLDS Center undertake a comprehensive study on the consequences of these requirements on Center research and reporting and develop plans for the implementation of the requirements.

2. The Governing Board recommends that the MLDS Center develop strategies to identify and engage new and existing audiences who can shape output and benefit from the analysis and reporting provided by the MLDS Center.

Appendices

Appendix 1 - Suppression Policy for Disclosure Avoidance

Policy Statement – The MLDS Center will balance the mission to provide meaningful information to Maryland stakeholders with the need to protect individuals' privacy.

The MLDS Center provides comprehensive and valuable information to Maryland stakeholders about student outcomes to guide policy while implementing efforts to reduce the risk of inadvertent disclosure of information about individual students and workers.

Background – According to State law (see Ed. Art. § 24-703(h), Annotated Code of Maryland) only authorized staff of the Center may access de-identified data for analyses, research, and reporting. Further, research, reports, and responses to data requests may only contain aggregate data. Finally, data that may be identifiable based on the size or uniqueness of the population under consideration may not be reported in any form by the MLDS Center.

The MLDS Center also ensures compliance with other state and federal laws governing data in the MLDS. This includes compliance with:

1. The federal Family Education Rights and Privacy Act (20 U.S.C. § 1232g; 34 C.F.R Part 99);
2. The Maryland Public Information Act (Maryland Code, §4-101, et seq. of the General Provisions Article); and
3. The Federal-State Unemployment Compensation Program (20 C.F.R. Part 603).

This policy establishes procedures for determining if data "may be identifiable based on the size or uniqueness of the population" and therefore must be suppressed. All aggregated data tables must undergo a suppression review by the MLDS Center Executive Director, or the Executive Director's designee, prior to the data tables being removed from the MLDS. For research and reporting purposes, under no circumstances are de-identified, individual-level data approved for removal from the system. This policy applies to descriptive statistics (e.g., where Ns and percentages are reported). Other statistical output (e.g., regression coefficients, p values) generally do not need to be suppressed.

Suppression Procedures – To ensure compliance with the requirement to suppress data that may be identifiable based on the size or uniqueness of the population under consideration and ensure that information about individual students and workers is not disclosed, the MLDS Center's baseline approach is to suppress any value less than 10. This approach will consider

both actual values and derived values and apply disclosure avoidance techniques (such as complementary suppression and perturbation) necessary to ensure identifiable information is not disclosed. The procedures also allow for a Disclosure Review Advisory Board (DRAB) to relax this standard when the risk of disclosure is minimal and there is a need for more complete reporting.

Appendix 2. Research Briefs

- *"Grow Your Own" Programs Can Help Expand and Diversify the Teacher Workforce*
- *Diversifying the Teacher Workforce Requires Race-Conscious Approaches that Start Early*
- *The Effects of Maryland's Ban on School Suspensions*

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RESEARCH BRIEF

mldscenter.maryland.gov/ November 2024

"Grow-Your-Own" Programs Can Help Expand and Diversify the Teacher Workforce

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Key Takeaways:

- Teacher Academy of Maryland (TAM) participants are primarily Black and White girls.
- TAM increased high school graduation, college enrollment, and the likelihood of teaching in Maryland.
- TAM increased wages relative to other labor-market opportunities.

What We Studied

Local teacher recruitment through "grow-your-own" (GYO) programs is a prominent strategy to address workforce shortages and ensure that incoming teachers resemble, understand, and have strong connections to their communities.[1]

Despite the growing popularity of GYO programs,[2] there is little credible evidence of their effectiveness.[3] We contribute to this gap in the literature by examining the impacts of the **Teacher Academy of Maryland (TAM)**, a GYO program that provides high schoolers with early exposure to teaching through a course-based Career and Technical Education (CTE) sequence. Upon completing four TAM courses and passing a licensure exam, students earn their industry-recognized certificate which makes them immediately eligible to work as an instructional assistant in a public school. Students also can transfer TAM credits to two- or four-year colleges. We examine the effects of TAM on high school graduation, college enrollment, receipt of a BA degree, employment as a teacher, and wages.

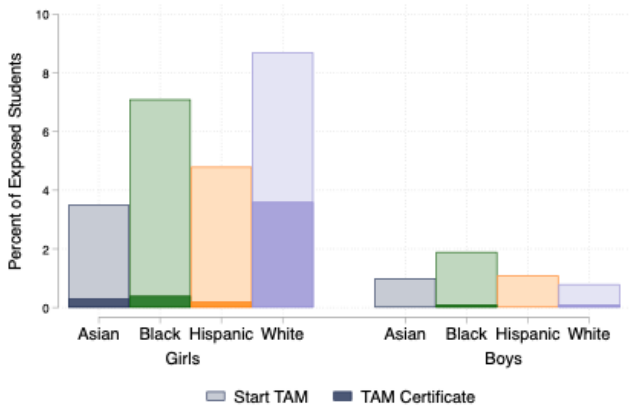
How We Analyzed the Data

We identify program impacts using a difference-in-differences (DD) strategy, which exploits variation across schools in the timing of TAM adoption. We compare students in high schools that newly offered TAM to earlier cohorts of students from the same high school that did not have access to the program. We also compare students in the same cohort but across schools, where one school offered TAM and another did not. Importantly, we observe that, across a range of outcome measures, students exposed to TAM were trending in similar fashion to students not exposed to TAM, which allows us to interpret our DD estimates causally.

What We Discovered

Figure 1 shows demographic characteristics of students who participated in TAM, which is a subset of the students in schools where TAM was available. Our sample includes five cohorts of 9th graders (SY 2008-09 to 2012-13), whom we can follow for ten years, from high school to career. White girls were most likely to start TAM (9%), while rates of participation were slightly lower for Black girls (7%). Roughly one-third of students who started TAM earned a certificate.

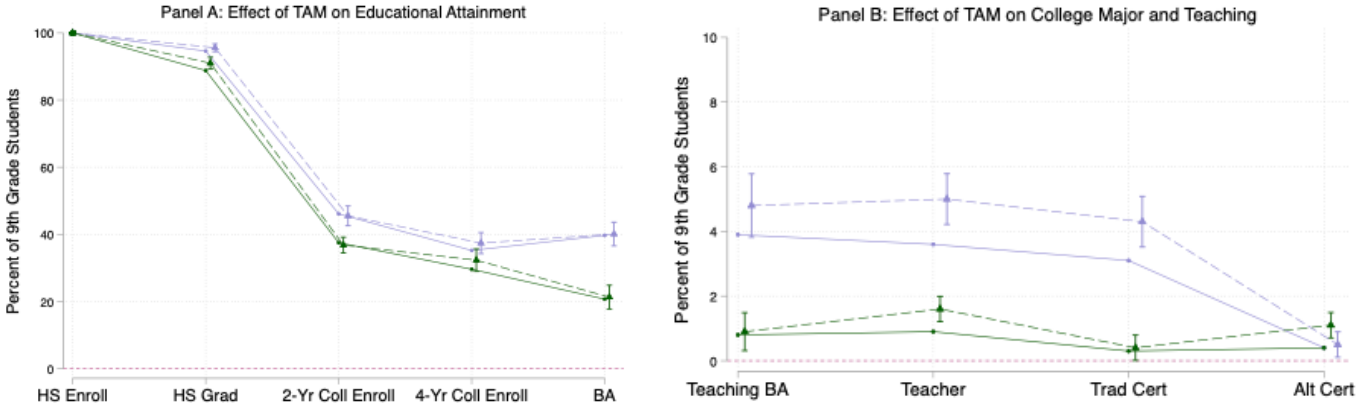
Figure 1. *TAM Takeup and Completion*



We visualize the effects of TAM on Black and White girls in Figure 2, which shows the share of 9th graders in our sample who advanced to various educational attainment (Panel A) and teaching-related (Panel B) milestones. Solid lines represent trends for the control group of students in schools not exposed to TAM. TAM's impacts are represented as dashed lines and triangles, with vertical 95% confidence interval bands. Confidence intervals provide upper and lower bounds for what we might expect if we conducted the same analyses with a different sample. If 95% confidence intervals around TAM's impact estimates do not cross the control-group trend line, we say that the estimate is statistically significant.

Overall, TAM increased high school graduation rates. The impact is largest for Black girls (2.2 percentage point [pp]) but significant for White girls as well (1pp). The effects on two-year college enrollment are negative while the effects for four-year college enrollment are positive. This suggests that TAM potentially shifted college-going from two- to four-year institutions.

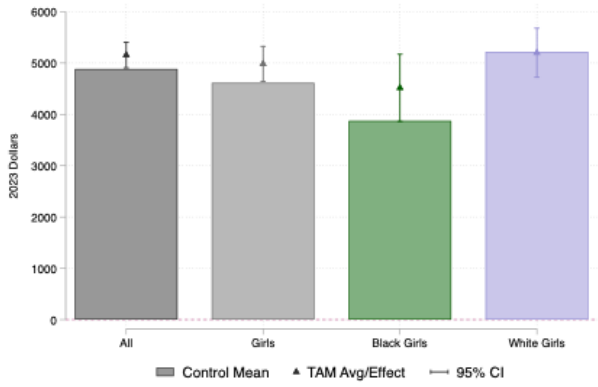
Figure 2. *Impact of TAM on Multiple Stages on the Pathway from High School to Teaching*



Exposure to TAM increased the likelihood that individuals became teachers by 0.6pp. Given that entering teaching is a rare event observed for roughly 1.3% of public high school students, this effect represents a large increase of 47%. However, the effect is larger for White girls (1.4pp) than for Black girls (0.7pp). White girls induced by TAM to become teachers almost all received a BA in teaching and a traditional teaching license. In contrast, we find no effect of TAM on a BA in teaching for Black girls, who instead entered the profession through alternative pathways.

Finally, Figure 3 shows that average wages increased with exposure to TAM, with the largest gains accruing to Black girls (18%). Exposure to TAM did not significantly reduce the average wages of any demographic group. This finding is important given concerns that GYO programs like TAM may cause students to leave more lucrative majors and career pathways for teaching.

Figure 3. *Estimated Effects of TAM on Quarterly Earnings*



Policy Implications

First, adopting TAM resulted in high school students becoming teachers in Maryland public schools at markedly higher rates than their counterparts. Given perennial concerns about teacher shortages[4] and more recent concerns that interest in teaching is rapidly declining[5], GYO programs like TAM can be a fruitful avenue for building pathways into the profession. GYO programs like TAM may also help diversify the profession. Therefore, policy makers should consider expanding TAM into schools and districts with large populations of students of color.

Second, expansion and diversification efforts must also consider potential mechanisms and how these differ between groups. While White girls largely followed the path laid out by the program (i.e., earning a TAM certificate and then a BA in teaching), Black girls followed a different pathway. We hypothesize that TAM likely benefited White girls, who may already have been interested in becoming teachers, by making the process easier vis-a-vis dual-enrollment credits. Black girls may not have been interested in teaching but for the exposure to teaching that they received through TAM.

Third, despite the positive outcomes of TAM for Black and White girls, its uptake remains relatively low among boys, Hispanic, and Asian students. One potential solution may be to increase demographic representation amongst TAM teachers, who are largely White females. Another solution may be to refine the TAM program and curriculum to focus on cultural relevance.[6]

Finally, there is a prevailing perception that teaching is not a financially rewarding career, which can deter potential candidates. However, we find that exposure to TAM did *not* significantly reduce the average earnings of any demographic group, and that it significantly increased earnings for Black women. These findings support other literature noting that employment in education (as well as in government) offer more equitable access to upward mobility for Black and Hispanic individuals than most other job sectors.[7]

Acknowledgements

The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R305A210031 to the University of Maryland, College Park. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education. The research was prepared by

members of the Research Branch of the Maryland Longitudinal Data System Center (MLDSC). The Research Branch would like to thank the entire staff of the MLDSC for their assistance and support.

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Additional Resources

Read the full report, “Do Grow-Your-Own Programs Work? Evidence from the Teacher Academy of Maryland,” here.

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RESEARCH BRIEF

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Diversifying the Teacher Workforce Requires Race-Conscious Approaches that Start Early

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Key Takeaways:

- Early barriers to teaching for students of color require early interventions.
- Alternative teacher preparation routes may address barriers to entry but do not resolve disparities.
- Policy strategies must differentially benefit students of color.

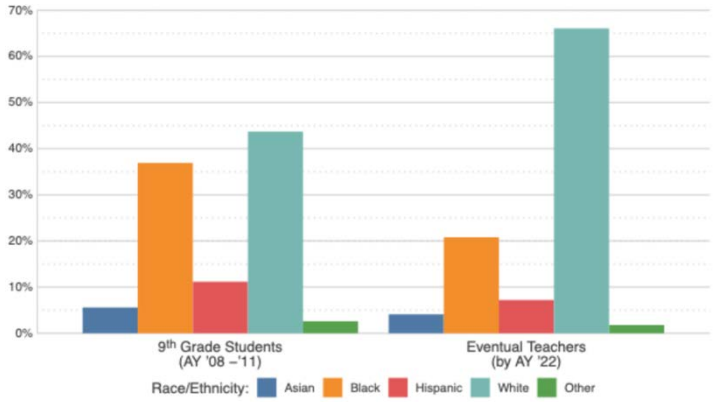
What We Studied

Academics, policymakers, and practitioners agree that we need to address barriers to entry into teaching in order to address teacher shortages and diversify the profession.[1] Research finds that student outcomes are improved when students have teachers of the same race and/or ethnicity.[2] However, as the K-12 student population grows more diverse, the teacher workforce in Maryland remains overwhelmingly White (Figure 1).[4] This leads scholars to suggest that we need to ensure that race is considered when designing teacher recruitment and retention policies.

The mismatch between student and teacher demographics stems in part from "leaks" at multiple stages of the "teacher pipeline,"[5]—or, what we call a "teacher pathway" that implies opportunities for re-entry. In this brief, we present descriptive analyses of teacher recruitment pathways in Maryland to provide benchmarks and potential policy targets for increasing racial/ethnic diversity in the teaching profession.

How We Analyzed the Data

Figure 1. *Demographic Characteristics of Students and Those Who Become Teachers*



Using data on all public-school students in Maryland from the Maryland Longitudinal Data System Center, we follow four cohorts of 9th graders (SY08-09 to SY11-12) over a 12-year period. We capture key stages on the pathway towards becoming a teacher: high school graduation, college enrollment in 2- or 4-year programs, completion of a BA, BA in teaching, and observed teaching in a Maryland public school. For individuals who become teachers, we also observe license type (e.g., "traditional" versus "alternative") and whether they taught in the same district they attended high school.

We start by exploring demographic representation at different stages of the pathway. We also conduct a simulation that asks: How large of an impact does a policy need to have in order to shift teacher demographics meaningfully? What stages of the pathway (i.e., high school graduation, college enrollment, college graduation, college degree in teaching) should these policies target to have the largest downstream effect on entry into teaching?

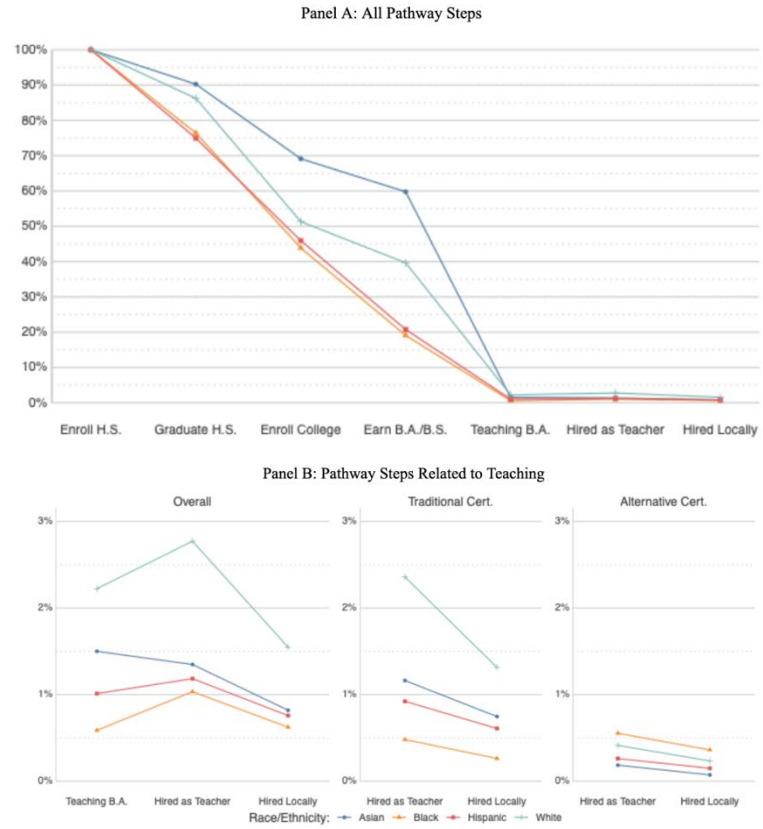
What We Discovered

Figure 2 shows that just 1.8% of 9th grade students go on to become teachers in Maryland public schools within 12 years. Teaching is a particularly rare outcome for Black students (1%), Hispanic students (1.2%), and Asian students (1.4%), compared to White students (2.8%). Figure 2 further shows that Black and Hispanic students face barriers earlier in the pathway, starting in high school, than other students.

Figure 2 also shows that 1.4% of 9th graders become teachers through a traditional undergraduate degree in teacher education, compared to 0.4% of 9th graders who go through an alternative pathway. However, over 50% of the Black 9th graders who go on to become teachers re-enter through an alternative route. At the same time, the transition into teaching through an alternative route does not make up for substantial underrepresentation at earlier stages in the pathway.

Figure 3 plots the racial composition of the teaching force as a function of the size of hypothetical policy shocks, which range from 0% to 30%. The first panel focuses on a

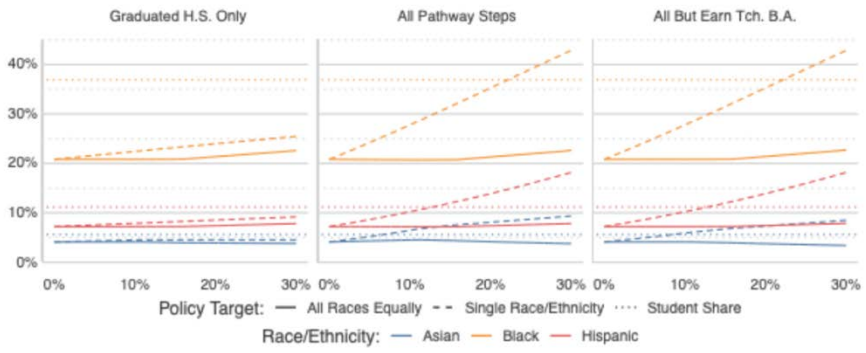
Figure 2. *Share of 9th Graders at Each Stage on the Pathway into Teaching within 12 Years, by Race/Ethnicity*



single-stage policy shock that only targets high school graduation, where we see minimal changes. This is true for other single-stage policy shocks, indicating that any single strategy or approach is likely insufficient to diversify the teacher workforce. The second panel presents multi-stage policy shocks aligned to traditional and alternative certification routes. The figures are largely the same, indicating that there is minimal room to improve demographic representation for students of color by targeting traditional certification routes.

Figure 3 also reports simulated effects of "race-conscious" policies that differentially target or differentially benefit students of color versus "race neutral" policies that benefit all students. Race-neutral policies fall woefully short of achieving a representative teaching force. For example, race-neutral policies that impact all pathway stages by 30% only increase the share of Black teachers by roughly 2 percentage points. Race-conscious policies *can* meaningfully alter teacher demographics, but only when policies simultaneously address multiple pathway stages *and* when each policy demonstrates significant effects. For example, for Black individuals, parity between teachers and students is achieved with approximately 25% increases in all pathway stages.

Figure 3. *Simulated Effects of Policy Shocks on Shifting Teacher Demographics*



Policy Implications

Our simulations suggest that increasing Asian, Black, and Hispanic students' high school graduation, college enrollment and completion, and teacher-entry rates by upwards of 30% would yield a representative teaching force in Maryland. Various interventions have the potential to make substantial

progress towards these goals. For example, providing more **equal access to effective and diverse teachers** would get us well on our way to the 30% benchmark. Having at least one Black teacher between kindergarten and third grade increases high school graduation and college enrollment rates by 13% and 19%, respectively.[6] While increasing access to same-race teachers for Black students requires that we have more Black teachers to begin with, classroom assignment and teacher retention policies could increase the odds that students of color experience same-race/ethnicity teachers at least once in elementary and middle school.

Additionally, school inputs, practices, and behaviors could be targeted that benefit all students but disproportionately benefit Black and Hispanic students. For example, substantially decreasing student **absences** would increase high school graduation and college enrollment rates by about 40%.[7] Additionally, random assignment to a **small classroom** in elementary school increased Black students' college enrollment rates by about 20%.[8]

Evidence from **urban teacher residency** and **grow-your-own** programs is promising too. For example, the Teacher Academy of Maryland (TAM) grow-your-own program increased Black girls' entry into teaching by 80% and White girls' by 39%.[9] Similarly, urban teacher residency graduates tend to be about twice as racially diverse as other novice entrants, and in some cities, these programs contribute 25% or even 50% of the incoming novice teacher cohort.[10]

Acknowledgements

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Additional Resources

Read the full report, “Disparate Pathways: Understanding Racial Disparities in Teaching,” here.

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RESEARCH BRIEF

mldscenter.maryland.gov/ November, 2024

The Effects of Maryland's Ban on School Suspensions

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Key Takeaways:

- Maryland's ban on suspensions in early grades significantly reduced the number, probability, and duration of suspensions but did not eliminate them entirely.
- Despite the overall reduction in suspensions, racial, economic, and gender disparities in suspension rates persisted, and gaps widened for students with disabilities.
- The limited impact of the suspension ban suggests that strategies addressing the root causes of disciplinary disparities are necessary to eliminate inequities fully.

What We Studied

Beginning in the fall of 2017, Maryland severely restricted the use of out-of-school suspensions in grades PK-2. The policy presented a valuable opportunity to examine the effects of state-level discipline policies for several reasons. First, the Maryland ban is very broad. It applies to all public schools in the state, and compared to other state bans, it bans the use of suspensions with only a few exceptions in cases of an imminent threat of violence.[1] Second, the ban offered an opportunity to test whether policymakers can eliminate inequities in suspensions simply by restricting suspensions for all.[2] Finally, the ban focuses on early primary grades, which provided an opportunity to assess whether grade-specific suspension restrictions can have schoolwide impacts. For example, do schools adopt alternative practices or voluntarily apply the suspension ban at the school level in ways that may positively impact students in upper grades?[3]

How We Analyzed the Data

Our objective was to measure the effects of the suspension ban on student discipline outcomes (e.g., number and frequency of different discipline events) and access to classroom instruction (e.g., absenteeism before and after the ban). We considered multiple ways that Maryland's implementation could affect schools and students in both treated (i.e., experiencing the suspension ban; grades K-2) and untreated (i.e., no suspension ban; grades 3-5) grades. We considered the possibility of three potential effects based on the timing of a student's initial exposure to the policy change:

1. *Direct effect*: students in grades PK-2 when the ban took effect were *directly* affected by the policy, with the intended effect of nearly eliminating suspensions at these grade levels.
2. *Indirect effect*: the suspension ban in PK-2 may lead to indirect reductions in suspensions by encouraging classroom approaches that prevent disruptive behaviors altogether. Additionally, although grades 3-5 are not directly affected by the ban, changes in administrative practices and alternative discipline strategies introduced schoolwide could influence disciplinary responses across all grades, leading to a more consistent reduction in suspensions.
3. *Follow-up effect*: if the absence of suspensions in early grades leads to meaningful changes in student behavior, students who are subject to the ban might experience follow-up effects as they age out of treated grades. For example, if schools respond by emphasizing conflict resolution skills in treated grades, treated students might have better behavior when they reach third grade than they would have had in the absence of the ban.

To estimate both the *direct* and *indirect* effects of the ban, we employ a comparative interrupted time series model that allows us to compare trends in outcomes over time for both grades subject to the ban (K-2) and grades not subject to the ban (3-5). Because the ban is experienced differently across grades, we estimate unique pre- and post-ban outcomes by grade level. We also employ an event study analysis to estimate the *follow-up* effects in the second year of the ban and for the grade 3 cohort that aged out of the suspension ban during the study period.

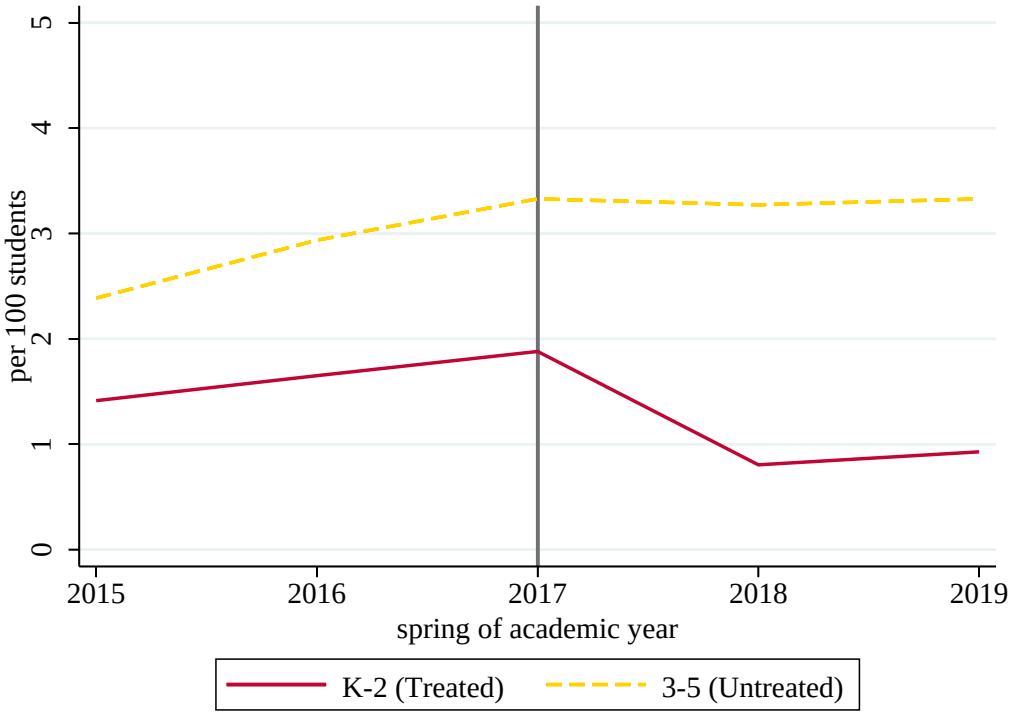
What We Discovered

The state ban substantially reduced, but did not eliminate, suspensions in treated grades.

We found that the probability, number, and duration of suspensions declined substantially and significantly in all three grades subject to the ban (K-2; see Figure 1). In second grade, for example, the number of suspension events decreased by 60% after the ban, while suspension days were reduced by 64%.

Figure 1. Probability of getting suspended in Maryland elementary grades before and after the K-2 suspension ban

Suspension rate per 100 students



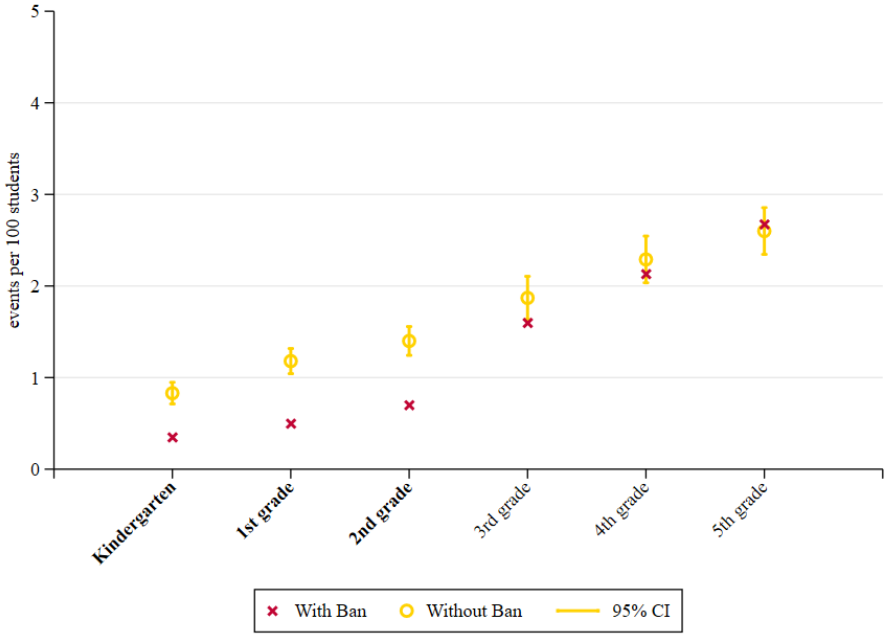
Source: Lincove, Jane Arnold, Catherine Mata, and Kalena E. Cortes. (2024). The Effects of a Statewide Ban on School Suspensions. (EdWorkingPaper: 24-1004).

The ban resulted in progressively smaller reductions in suspension rates in grades not covered by it, with no significant effects by fifth grade.

We estimated the effect of the ban for each grade level and found only smaller declines in the probability, number, and duration of suspensions in grades 4 and 5 after the ban (see Figure 2). If any schoolwide effects occurred, they were seen only in grade 3 where the

number and duration of suspensions are significantly lower than it would have been without the ban.

Figure 2. Probability of suspension with and without the ban, by elementary grade



Source: Lincove, Jane Arnold, Catherine Mata, and Kalena E. Cortes. (2024). The Effects of a Statewide Ban on School Suspensions. (EdWorkingPaper: 24-1004).

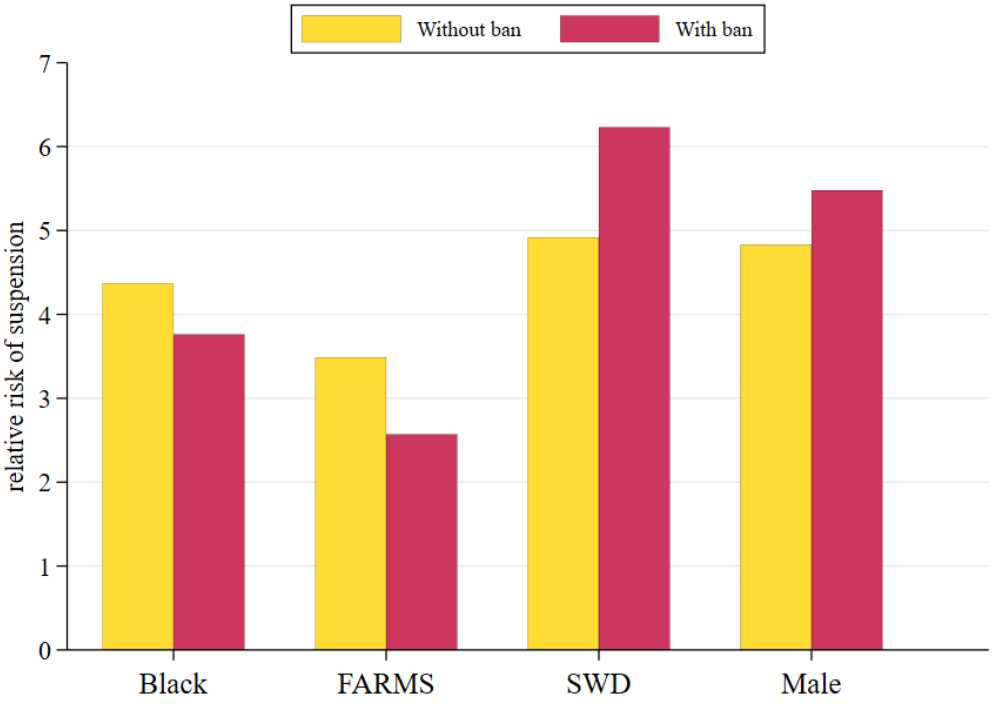
While all student subgroups experienced significant declines in frequencies and suspension rates, disparities by race, income, and gender persisted, and gaps related to disability status widened.

We find that the suspension ban significantly reduced the probability, number, and duration of suspensions in K-2 grades for Black, male, economically disadvantaged, and students with disabilities (SWDs), with no increases in the use of violent codes or in-school suspensions. However, these reductions were not large enough to eliminate the disproportionate use of suspensions for certain groups (see Figure 3).

Despite the reduction in suspensions, Black students continue to be suspended more frequently than white students, male students more than female students, and economically disadvantaged students more than their non-economically disadvantaged peers. While SWDs saw a decline in their chances of being suspended, suspension rates of students without disabilities declined as well. As a result, disparities between SWDs and their non-disabled peers widened after the ban. For example, before the ban, SWDs were suspended

five times more often than their peers. After the ban, this rate increased to six times more often.

Figure 3. Disproportionality in Suspension Rates in Grades K-2



Source: Lincove, Jane Arnold, Catherine Mata, and Kalena E. Cortes. (2024). The Effects of a Statewide Ban on School Suspensions. (EdWorkingPaper: 24-1004).

Policy and Practice Implications

Maryland's strategy to reduce the use of exclusionary discipline was broad by including all schools in the state, but also narrow in its focus on early primary grades, where suspension rates were already relatively low. Further, Maryland provided a narrow but notable exception for cases where students are perceived to be a threat to other students or the school. We find promising evidence regarding the direct goals of the policy of banning out-of-school suspensions in grades K-2. Maryland's ban substantially reduced but did not fully eliminate the use of out-of-school suspensions in targeted grades only. The magnitude of reductions is typically a reduction of 60 percent or more in the suspension rates both overall and for groups that have been historically more likely to be suspended.

The Maryland policy also lets us investigate whether restricting suspensions at lower grade levels sparks schoolwide changes in suspension practices. Our results suggest that

policymakers aiming to reduce suspensions across all grades will need to extend their focus beyond just the early grades. We observe progressively smaller reductions in suspension rates in grades not covered by the ban, with no significant effects by fifth grade. This suggests limited schoolwide impacts if a policy only changes school practices in some grades while maintaining business-as-usual practices in other grades.

Finally, it is unsurprising that the ban failed to eliminate disproportionalities in suspensions and even exacerbated some inequities, particularly for students with disabilities. The ban is a broad policy that does not take aim at any of the underlying causes of discipline disparities. To effectively eliminate entrenched disparities, schools will likely need to attend to the multitude of reasons why some student groups are disciplined at higher rates than others. For example, schools might need to address factors that contribute to educator biases in referrals and suspensions, rather than simply implementing a race-neutral strategy and hoping it will reduce racial inequalities.

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Additional Resources

For a comprehensive analysis of the ban's impact, including the decrease in the use of violent codes in grades K-2 and the finding that in-school suspensions were already rare before the ban and did not increase afterward, please see the full report, “The Effects of a Statewide Ban on School Suspensions,” available at https://edworkingpapers.com/ai24-1004