



MLDS CENTER

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MEMORANDUM

TO: MLDS Governing Board

FROM: Mr. Ross Goldstein, Executive Director
Dr. Angela Henneberger, Research Branch Director
Dr. Ann Kellogg, Director of Reporting Services

DATE: September 5, 2023

SUBJECT: Project Approvals and Updates

Purpose

This agenda item is to update the Board on projects that have been reviewed and approved by the Executive Director under *Project Approval and Management Procedures*; projects that, when necessary, require Board review and approval; and updates on ongoing projects. Please note that in addition to the information presented for each new project, this memorandum also includes the complete project abstract submitted by the researcher for your further information and review.

Projects for Consideration

ERA # 72	Pipelines and Pathways of Maryland CTE Participants
Researcher	Dr. Ting Zhang, University of Baltimore, Jacob France Institute
Overview	<ol style="list-style-type: none"> 1. What are the student- and school- level factors and disparities associated with high school graduates earning CTE-related credentials? 2. What is the probability for different CTE concentrators and completers' career pathways (such as HS-work, HS-college-work, HS-college/work, vs HS-not work in MD)? 3. What are the employment and earnings patterns of former CTE majors over a specific timeframe by different career pathways, controlling for demographic and socioeconomic heterogeneities? 4. What are the factors contributing to employment and earnings outcomes among CTE concentrators and completers over a specific timeframe by different career pathways, controlling for demographic and socioeconomic heterogeneities? (including industry sectors, etc.)
RPB Review	The RPB raised no objections to this project.
Exec. Dir. Determination	Approved - This project is being conducted for the Maryland CTE Committee, which is developing and implementing initiatives to meet the Blueprint goal of 45% of Maryland high school graduates completing a high school level of a registered apprenticeship or another industry-recognized credential. This project falls under the Pipelines and Pathways category of the Research Agenda and will address themes of equity and inclusion. Other considerations include the fact that the project requires cross-sector data; is being conducted by a highly qualified and experienced research team; and provides a value to the state by providing requested

	information to state policy makers.
Board Action	Informational

ERA # 76	High School Completion, Postsecondary, and Labor Force Outcomes Among DJS-Involved Youth
Researcher	Dr. Ann Kellogg, MLDS Center Dr. Shane Hall, DJS
Overview	<ol style="list-style-type: none"> 1. What percentage of DJS-involved youth completed a high school diploma or GED in a given year? 2. Among DJS-involved youth who completed high school, what percentage enroll in postsecondary education? 3. What are the median wages earned by justice-involved youth – high school completers, college enrollees, and others – following their exit from DJS?
RPB Review	The RPB raised no objections to this project.
Exec. Dir. Determination	Approved - This project is being conducted for the Department of Juvenile Services. DJS wants this information to assess positive outcomes for justice involved youth. This project falls under the Educational, Service and Workforce Outcomes category of the Research Agenda and will address themes of <i>Supports and Barriers</i> . Other considerations include the fact that the project requires cross-sector data; is being conducted by MLDS Center staff along with DJS staff; and provides a value to the state by providing requested information to state policy makers.
Board Action	Informational

ERA # 77	College Students Who Have Children - Demographics, transfer, persistence and completion
Researcher	Dr. Erica Hernandez, Bowie State University
Overview	<ol style="list-style-type: none"> 1. How are measures of postsecondary enrollment and completion of potential student-parents different from their non-parenting peers? 2. Do postsecondary potential student-parents have more indicators of poverty than their non-parenting peers? 3. How do postsecondary potential student-parents differ from their non-parenting peers in their wages during school, and how does completing a postsecondary program impact their wages?
RPB Review	The RPB raised no objections to the project. Dr. Emily Dow, MHEC, noted that this information would be responsive to a required report that MHEC must submit at the request of the General Assembly..
Exec. Dir.	Approved - This project falls under the Educational, Service and Workforce

Determination	Outcomes category of the Research Agenda and will address themes of <i>Equity and Inclusion</i> . Other considerations include the fact that the project requires cross-sector data; is being conducted by a qualified Maryland researcher; and provides a value to the state by providing important information to state policy makers on an under-studied population.
Board Action	Informational

ERA # 79	Staying Power: Estimating K-12 schools' contribution to student success based on students' subsequent grades
Researcher	Dr. Jing Liu, University of Maryland, College Park, College of Education
Overview	<ol style="list-style-type: none"> 1. To what extent do elementary, middle, and high schools vary in their "GPA value-added" – that is, in their effects on students' GPAs in 6th grade, 9th grade, and freshman year in college, respectively? 2. On average, how much does a given elementary, middle, or high school's GPA value-added vary over time? And how much does their stability improve by averaging across 2-3 school years? 3. To what extent do a school's observable demographic characteristics predict its GPA value-added? 4. To what extent does GPA value-added predict other outcomes of interest such as achievement, advanced course-taking, high school graduation, and college enrollment, persistence to second year of college, and degree completion?
RPB	The RPB raised no objections to this project
Exec. Dir. Determination	This project falls under the Educational, Service and Workforce Outcomes category of the Research Agenda and will address themes of <i>Social Determinants</i> . Other considerations include the fact that the project requires cross-sector data; is being conducted by a member of the MLDS Center Research Branch, and provides value to the state by providing requested information to state policy makers.
Board Action	Informational

ERA # 80	Equitable Indicators? An Examination of How Well Early-Warning Measures Distinguish Secondary and Postsecondary Educational Outcomes across District- and School-Level Contexts
Researcher	Juan B. Cortes, PhD Candidate, Johns Hopkins University Dr. Marcia Davis, JHU, College of Education, Advisor
Overview	<ol style="list-style-type: none"> 1. To what extent do measures such as GPAs, attendance rates, test scores, and suspensions, differ in their ability to distinguish students who do and do not

	<p>attain the following outcomes: on-time high school graduation, immediate college enrollment, college persistence, and degree attainment?</p> <ol style="list-style-type: none"> 2. Across the various measures examined, what are the empirically derived optimal thresholds in predicting the various outcomes? 3. Based on these optimal values, how do the various indicators perform in terms of classifier performance measures (true positive rate, false positive rate, positive predictive value, etc.)? 4. To what extent are differences in system-level and school-level indicator performance related to differences in system-level and school-level characteristics? <ul style="list-style-type: none"> o School-level demographics (e.g., aggregate enrollment, demographic composition) o School-level student performance o School-level geographic characteristics (e.g., urbanicity, concentrated disadvantage) o Student-to-staff ratios (human capital) 5. For students who are categorized as early-warning but do meet outcomes (i.e., false positives), what are their characteristics and trajectories? Do these differ across contexts? 6. For students who are categorized as not early warning but do not meet outcomes (i.e., false negatives), what are their characteristics and trajectories? Do these differ across contexts?
RPB Review	The RPB raised no objections to this project
Exec. Dir. Determination	Approved - This project falls under the Educational, Service and Workforce Outcomes category of the Research Agenda and will address themes of <i>Equity and Inclusion</i> and <i>Social Determinants</i> . Other considerations include the fact that the project requires cross-sector data. The project is being conducted by a graduate student pursuing a dissertation with oversight and support from a JHU faculty member. The project will provide valuable insights for the state on the performance of early warning systems.
Board Action	Informational only.

ERA # 34	Long-Term Effects of PBIS Plus: A Randomized Controlled Trial in Maryland Public Elementary Schools (ERA 34)
Researcher	Dr. Angela Henneberger
Update	This project was funded by IES. This 3-year \$1.5 million project began July 1, 2023.

ERA # 62	Using Maryland’s SLDS To Strengthen And Diversify The Teacher Workforce Through High School To Career Pathways
Researcher	Dr. Jane Lincove
Update	This project was resubmitted to the IES State Policy Making research for applications in August 2023.

Project Abstracts

ERA #72 - The Blueprint for Maryland’s Future law builds on the Kirwan Commission goal that every Maryland student have access to opportunities enabling them to be ready for success in college and a rewarding career by the end of high school. One component of this objective is the Blueprint’s goal that 45% of Maryland high school graduates complete the high school level of a registered apprenticeship or another industry-recognized credential. Tasked with developing and implementing the initiatives required to achieve the 45% goal, the Maryland Career and Technical Education (CTE) Committee published a Phase One Initial Implementation Plan¹ to begin the process. The Blueprint and this initial implementation plan specify a number of subgoals, including: *Task 3.4.4(f): CTE Committee shall adopt and, where appropriate, develop and regularly update a comprehensive and cohesive system of occupational skills standards to drive the State’s CTE system starting in FY 23.*

To make recommendations, strive to create a comprehensive, unified system of career progression that seeks to incorporate as much education in a job setting as practical, incorporates education in high school, community college, and other postsecondary occupation programs into a seamless whole that will provide students with credentials at various points that build on previous credentials, and allows a student trained in one career to seamlessly transfer the student’s skills and education to a new career in a different field.

Specifically, our scope of work includes the following two tasks:

- The JFI team will conduct an extensive analysis of the educational and professional pipeline for CTE concentrators and completers. This analysis will focus on examining attributes and disparities in demographics, socioeconomic status, curriculum enrollment and performance, as well as school attributes, along with CTE-related credentials, upon valid data availability.
- The JFI team will conduct a comprehensive follow-up pathway analysis of former CTE concentrators and completers. The primary objective of this analysis is to examine employment and earnings patterns of former CTE concentrators and completers over a specific timeframe, controlling for demographic and socioeconomic heterogeneities and contingent upon the availability of valid data.

By undertaking this thi CTE program completion factor study and the follow-up pathway analysis, the JFI team aims to gain valuable insights into the educational and employment trajectories of individuals who have pursued CTE programs. The findings will contribute to a better understanding of the outcomes and impact of CTE education on students' future prospects.

¹ <http://www.gwdb.maryland.gov/ctecomm/ctecommitteeinitialphaseoneplanmar2023.pdf>

The initial report of the tasks will be completed by December 31, contingent on data access.

The Jacob France Institute (JFI) serves as a leading source of high-quality statistical information and research covering the interaction of business, worker, education, social service, community development, and government investment decisions. Analysis of trends in the location, dynamics of businesses and entrepreneurship, and quality of employment along with continued education and training opportunities and outcomes are of particular importance in our current portfolio of research. We manage and participate in alliances with research partners in other states to further discovery of new information that shapes important business and government policy decisions. In conducting our research, we respect privacy, protect confidentiality and shun partisanship.

ERA #76 - This report will examine the high school completion, postsecondary enrollment, and labor force earnings of youth who have been in the juvenile justice system in Maryland through a descriptive study utilizing three data sets. DJS-involved youth will include youth who have been on probation or who have been in a committed facility, and the outcomes will disaggregate by type of DJS involvement.

The first data set will use a ninth grade cohort to examine high school completion rates. The analysis will ask how many of the youth completed a high school diploma, earned a GED, are still in high school, and how many dropped out of high school. DJS involvement could have occurred before or after the ninth grade year.

To examine postsecondary enrollment, the second data set will examine a cohort of DJS-involved youth who completed high school or earned a GED. Cohort year will be based on the year of earning a high school diploma or GED. Youth's age at the time of high school diploma or GED attainment must be 21 or less. The analysis will ask what portion of the youth enrolled in postsecondary education and if any attained a degree by age 25. Further, the analysis will use workforce data to examine earnings by age 25 by postsecondary degree status.

The third data set will examine labor force outcomes among DJS-involved youth who did not complete a high school diploma or GED by age 21. Cohort year will be the year in which a youth turned 21. The analysis will examine labor force earnings by age 25.

If population sizes permit, results will be disaggregated by race/ethnicity and gender.

ERA #77 - National data indicate that students who have children (student parents) are more likely to be female, to be underrepresented minorities, and to have lower retention and graduation rates than their non-parenting peers, even though their GPA is higher (IWPR, 2020). Student parents also suffer high rates of mental health challenges. In a national survey, 44% of student parents reported feeling overwhelmed often or all the time, 37% reported experiencing multiple anxiety attacks, and 18% considered suicide within the last 30 days (JED, 2021).

In a 2023 survey of student parents at Bowie State University (n = 62), student parents were often low income students who experience financial challenges and food insecurity, despite working full time. In the sample, 71% of undergraduate student parents received Pell grants and 64% of all student parents worked full time while attending school.

While there is national data about the challenges facing student parents when it comes to persistence, completion and mental health, there are currently no statewide studies of Maryland's student parents at the student record level. A complication of this research is that none of Maryland's institutions of higher education currently collect parenting status in a systematic way. To better support Maryland's student parents- in supporting their academic success, evaluating the adequacy of current financial aid, and mental health supports, more data is needed to understand the size of this group and their characteristics.

This project will categorize college students who are determined independent on FAFSA with a family size of two or greater as "potential student parents". Students who are dependent students on FAFSA or independent students with a family size of 1 will be a comparison group of non-parenting peers. There is the potential that some (or many) of the "potential student parents" are actually two adults (married or unmarried couple, or the student and an adult dependent), and there's no way to confirm this data. The FAFSA does ask an additional question about whether the student has a dependent child, but that question is not currently part of MHEC's requested data from institutions. Likewise, there will be some dependent students who have children but are still claimed as a dependent on their own parent's taxes. There will also be independent or dependent students who have a child but do not provide more than half of the support of their child, so they will not be included in the potential student parent group. In addition, some separated or divorced parents will be missed in the family size question if they alternate who claims their child as a dependent. Student parents who did not fill out a FAFSA will not be included in this study at all, since the dependency status and family size comes from FAFSA data. In a recent child care subsidy application at Bowie State, of 42 applications, 38 students filled out FAFSA, 1 was dependent, 1 was independent with a family size of 1 and 35 were independent with family size 2 or greater (23 of 35 had family size of 2). This small sample of student parents shows that 35 of 42 known student parents would be captured by our definition of potential student parents, 2 would be classified as non-parents and 5 would be missing without FAFSA data. Independent students with family size of 2 or greater is not a perfect measure of which students are parents, so this research study will treat the data as preliminary findings about student parents. Even if the potential parent group are not all parents with a child, this group still has some additional family responsibilities beyond an individual student and there may be findings of interest.

There is potential for a bill to be proposed to the Maryland state legislature to request that MHEC collect annual parenting status data from students at institutions of higher education. Systematic annual data collection of parenting status as part of one of the existing data collections would alleviate some of the data concerns for this study- there will be a direct question that does not depend on a student filing FAFSA or fitting the "tax definition" of support for their child. This research project will help inform a potential bill with data on the potential number of student parents in Maryland and the need for better ways of collecting this data.

This project will use FAFSA data and the analysis of poverty indicators and unmet financial need will provide needed data on the administration of federal financial aid for potential student parents in Maryland. If more aid or different types of aid are needed to support student parents to complete their educational goals, this use of federally protected data is justified.

This project will also use MSDE data on FARMS eligibility as a poverty indicator and Labor data to compare wages in school and after graduation / non-graduation for potential student parents vs. non-parents.

ERA #79 - Research suggests that letter grades reflect both students' academic proficiency and "non-cognitive" skills and behaviors that teachers value, such as participation and effort. In fact, studies show that a student's GPA is more predictive of these outcomes than their test scores precisely because GPA is "multi-dimensional." Consistent with prior findings, a recent report conducted by AIR using data from the MLDS Center shows that adding high school GPA to Maryland's College and Career Readiness standard increases the percentage of students correctly classified as college ready or not college ready by 10 percentage points. Yet, despite the strength of these relationships, we know little about how schools contribute to students' GPA growth.

Unlike commonly used student outcomes such as test scores, it is challenging to identify schools' contribution to students' GPA growth for several reasons. First, different schools might have different grading standards, so it is difficult to compare schools with each other; second, and relatedly, ill practices such as grade inflation might result in erroneous attribution of school effects on GPA.

This project plans to overcome these challenges by estimating school value-added by using students' subsequent grades – that is, their grades at the next institution they attend. Specifically, we will examine how an elementary school affects its students' middle school GPA? Similarly, how a middle school affects its students' high school GPAs, and how a high school affects its students' college GPA?

Clearly, there are many challenges to answer these research questions. For example, the schools where students go on to enroll will also have different grading standards (as will the teachers who teach in them). One possible workaround, for example, when estimating elementary schools' performance would be to rely on comparisons between "otherwise similar" students who graduated from different elementary schools but attended the same middle school and enrolled in the same classes? Similarly, we might evaluate middle schools based on "otherwise similar" students' 9th grade GPAs, and evaluate high schools based on "otherwise similar" students' junior year's GPAs in college.

Scholars such as Kirabo Jackson have already used "subsequent" GPA as one of several measures of teachers' and schools' medium-term impacts on non-cognitive outcomes; however, no research to our knowledge directly assesses schools' effects on students' subsequent GPAs.

ERA #80 - Over the past two decades, Early Warning Indicator (EWI) Systems have become widely implemented across the country in the continued effort to increase high school graduation rates (Balfanz & Byrnes, 2019a). The idea is straightforward: by identifying which students are likely to need support early in their high school careers (i.e., 9th grade), schools and systems can provide either student- or group-level interventions that help promote student success. However, the use of these indicators is premised on accurate identification of students that need support so that interventions and resources can be effectively targeted. Without accurate identification, we risk inefficient use of resources and failure to identify students who need support.

The seminal research on EWIs suggested that it was possible to identify students early in their educational trajectory who were either likely or not likely to graduate from high school by utilizing routinely collected administrative data, such as attendance, behavior (e.g., suspensions), and course performance (Allensworth & Easton, 2007; Balfanz et al., 2007; Neild & Balfanz, 2006). EWIs categorize students as either early-warning or not early-warning based on whether students are below or above a specific threshold on a given measure (e.g., GPA). Implementation of these indicators typically occurs using an Early Warning System where reports are distributed to school staff with lists of students and their related early-warning status; school staff can then review those reports to determine the appropriate interventions based on different levels of student need (Balfanz & Byrnes, 2019a). Research

has also started to examine how measures in high school are related to both postsecondary enrollment and degree attainment, framed as indicators of college readiness (Balfanz & Byrnes, 2019b); findings suggest that similar measures like attendance and GPA are predictive of postsecondary outcomes but require students to be above a higher threshold on those measures.

The classifications that EWI indicators provide can be thought of as predictions about a future outcome. In practice, EWI measures will make errors about future outcomes such that some students will be identified as needing support but would have met the outcome without it (referred to as false-positives) and other students will be identified as not being early-warning but will fail to meet the outcome since they needed support (referred to as false-negatives). Research on EWIs from this perspective is limited but it highlights the need to understand how well EWI measures can accurately identify students in need (Bowers et al., 2013).

Consistent with national trends, a key element of the Blueprint for Maryland's Future is the need to quickly identify students in need of support to provide them with the necessary resources early in students' educational trajectories to enable them to succeed in high school and postsecondary education. The notion of equity is made explicit in this legislation, specifying "equitable learning outcomes regardless of a student's family income, race, ethnicity, disability, or other characteristics." However, EWIs, when used, are typically applied somewhat universally across schools within local school systems and across local school systems within states. Yet, for this legislation to achieve its goal of transforming the state's education system into one that is high-performing and world-class, it is necessary to examine the extent to which measures used to assess early warning can effectively and equitably identify students in need of support across local school system and school-level contexts.

The proposed project will examine how student-level measures that are commonly used for EWIs (i.e., attendance rates, suspensions, grade-point-averages, and test scores) vary in their ability to distinguish which students do and do not attain various educational outcomes of interest across local school systems and schools. Various outcomes will be considered, including on-time high school graduation, first-fall college enrollment, college persistence, and degree attainment. The project will also examine the extent to which differences in the ability for EWIs to distinguish educational outcomes are related to differences in the characteristics of local school systems and schools, including student demographic composition, enrollment size, student performance, school geographic contexts, and student-staff ratios.

Finally, the project will examine student characteristics and trajectories for two groups: i) students who are categorized as early-warning but who do end up meeting outcomes (i.e., false positives), and ii) students who are categorized as not early warning but who do not end up meeting outcomes (i.e., false negatives). Examining false positives will provide insight into which students succeed despite being categorized as early warning and what their trajectories through high school look like. Furthermore, there may be differences across contexts that may be related to differential rates of students recovering from an early-warning designation. Examining false negatives is also needed since it can provide insight into the types of students that are typically missed by EWIs but who still required support.

References

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