MLDS CENTER
Maryland Longitudinal Data System

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MEMORANDUM

TO: MLDS Governing Board

FROM: Dr. Angela Henneberger
Research Branch Director and Assistant Research Professor, University of Maryland
School of Social Work and Ross Goldstein, Executive Director

DATE: June 2, 2023

SUBJECT: External Researcher and Grant Funded Projects

Purpose
The purpose of this agenda item is to update the Board on:
1. A State Longitudinal Data System (SLDS) - State Policymaking Grant submission to the Institute of Education Sciences (IES), U.S. Department of Education; and
2. An external research project that was favorably reviewed by the Research and Policy Advisory Board and approved by the Executive Director.

Project 1: Using Maryland's SLDS To Strengthen And Diversify The Teacher Workforce Through High School To Career Pathways
The MLDS research branch (Dr. Lincove at UMBC, Dr. Blazar at UMCP, and Dr. Henneberger at UMB) partnered with MHEC to submit an application to the Institute of Education Sciences (IES) for their *Using Longitudinal Data to Support State Policymaking* grant competition. The project proposed using MLDS data to inform state and local strategies and decisions regarding expanding and diversifying the teacher pipeline. Our objective is to use the MLDS to provide policymakers and stakeholders with a comprehensive and detailed understanding of where the existing teacher workforce came from, the potential expansions in the teacher pipeline, and common points of leakage or blockage where potential teachers exit that pipeline.

Update: This submission narrowly missed the cutoff point for IES funding by a half point, highlighting the strength of the proposal. The group plans to make edits based on reviewer's comments and resubmit for the next round of applications requested.

Action: Informational only.

Project 2: Access, Impact, and the Computer Science Teacher Pipeline: A Systematic Study on the Expansion of Computer Science Courses in Maryland's High Schools
Dr. Jing Liu, Research Branch Member and Assistant Professor at UMCP, proposed a project examining the access and impact of computer science coursework and the computer science teacher pipeline.

Abstract: The growing role of computing in almost every aspect of our modern life requires that citizens be equipped with foundational computational knowledge and skills. Additionally, employment in computer and information technology is expected to grow by about 15 percent over the next decade (BLS, 2022), so preparing the next generation of students to work in these fast-growing fields is of critical importance. Given this need, school systems are working to expand CS course access in K-12 classrooms.

MD is a current leader in this effort, requiring all public high schools to offer CS courses by the 2021-2022 school year (MCCE, 2022). Although this development is promising, there are challenges in ensuring equitable access in the CS course expansion and sufficient supply of teachers for CS courses. This project will assess who benefits from the expansion of CS courses, the effects of access to CS courses on students' short- and long-run outcomes, and how to ensure that CS classrooms are staffed with CS teachers. This work will present new quantitative evidence on CS course access, impacts, and teacher labor supply and inform policymakers about equitable and effective delivery of CS education.

Research Questions:
1. How do the temporal changes of access to CS courses in MD's high schools vary across student income, racial, ethnic, and geographic groups?
2. What is the impact of taking a CS course on students' high school outcomes (advanced course-taking, grades, and high school graduation); college enrollment and field of study with a focus on CS/STEM; college persistence and field of study; college graduation and degree field; workforce earnings and industry?
3. How does the certification pathway, certification subject area, and experience of MD CS teachers compare to the broader population of MD teachers, and how has it evolved over time as CS course offerings have expanded? How do characteristics of CS teachers, such as their teaching experience and content knowledge in CS, mediate the impact of CS courses on students?

Action: Informational only.