Monthly Report for August 2018
Submitted September 7, 2018

Administration

Managing for Results

Staff completed the Center's Managing for Results (MFR) report that is required to be submitted with the FY 20 budget. The MFR assesses the Center's performance against a variety of measures. In most cases, the Center's performance in FY 18 improved as compared to FY 17.

1. The Center produced 20 new dashboards and other data analyses and summaries for the website. This is an **increase of 3** from last year.
2. The Center's website had 26,587 page views. This is an **increase of 17,101** from last year.
3. Center staff conducted 50 seminars on the use and analysis of longitudinal data. This is an **increase of 25** from last year.
4. The Center received 53 data requests. This is an **increase of 10** from last year.
5. The Center fulfilled 49% of the data requests within 30 days of the request. This is a **28% decrease** from last year. The decrease in performance is due to the Center's policy of accepting a data request even if data for that request is not available (i.e. has not been received). The Center plans to continue to accept data requests even if data is not available, but will not consider the request as active until the data is available.
6. The Center produced 8 new reports. This is an **increase of one** from last year.
7. The Center data were cited five times. This is an **increase of two** from last year.
8. The Center produced 31 written responses to formal requests for information from State policy makers. This is an **increase of 25** from last year.
9. The Center did not have any reports published in scholarly journals. This is the same as prior years. Several papers have recently been submitted to publications and the Center anticipates future publications.

Historically Black Colleges and Universities (HBCUs) Plan

The FY 19 Budget Bill added a new requirement that all agencies using interagency agreements with Maryland universities establish a goal of having at least 5% of the total amount awarded, be awarded to Historically Black Colleges and Universities (HBCUs). MLDS Center has an ongoing agreement with the University of Maryland, School of Social Work and therefore was required to submit a plan to the Department of Budget and Management on how it plans to meet the 5% participation goal over the next three years (FY 19 - 21) and what controls will be implemented to monitor the agency's efforts to achieve the goal.

Three Year Plan

1. In FY 19 - During the first half of this fiscal year, the Research Branch Director and the Executive Director will identify and develop relationships with researchers at HBCUs who have a background in: (a) research relating to the evaluation of student education and/or workforce outcomes; and (b) the technical and statistical expertise necessary to work with the longitudinal data set. During the second half of the year, as the research plan for FY 20 is developed, the

Research Branch Director will identify one or more specific research projects to be conducted by HBCU researchers.

2. FY 20 – The MLDS Center anticipates that it will substantially achieve the 5% goal. The process to identify additional HBCU researchers will continue to ensure future year research needs can be met by additional HBCU researchers.

3. FY 21 – The MLDS Center will fully meet or exceed the 5% goal.

Controls to Monitor Agency Efforts

1. At the December Governing Board meeting, the MLDS Center Executive Director and Research Branch Director will assemble and report to the MLDS Governing Board the compiled list of HBCU researchers and their research interests.

2. At the June Governing Board meeting, the MLDS Center Executive Director and Research Branch Director will identify research priorities that will be assigned to HBCU researchers and the approximate percentage of the research budget that will be used to fund that research.

Meetings and Conferences

SLDS Employment Outcome Metrics Workgroup

The MLDS Center participated in the second SLDS State Support Team workgroup meeting on August 13th. This work group meeting focused on options for calculating the number of postsecondary graduates employed in a state. Each group shared methodologies for how to answer this question and discussed the advantages and disadvantages to each method. There will be one more meeting of the workgroup later this fall.

Research and Policy Advisory Board Meeting

The Research and Policy Advisory Board (RPB) meeting was held on August 2nd. The Center provided updates on the progress of Output priorities for 2018-2019.   Dr. David Blazar and Dr. Angela Henneberger discussed the IES Research Practitioner Partnerships Grant - *Quantity, Quality, and Diversity in Teaching: Collaborations to Examine the Educator Pipeline in Maryland*.

Ann Kellogg asked attendees whether or not they used the *Standards and Protocols for the Collection and Dissemination of Graduating Student Initial Career Outcomes Information For Undergraduates* outlined by National Association of Colleges and Employers (NACE) for determining career placement for college graduates. Morgan State University and University of Maryland, College Park are both using the standards. The community colleges are not. Ann will follow-up with MICUA colleges and USM to determine if others are following this standard.

Montgomery College Data Summit

Montgomery College is participating in a national community college initiative called *Achieving The Dream,* which requires them to hold an annual data summit as well as workshops throughout the year. Ann Kellogg was asked to give the keynote talk at the fall data summit on August 22nd.   The theme of the data summit was *Student Success Starts on Before Day One.* Ms. Kellogg provided an overview of Center operations and highlighted key projects and new initiatives that utilized community college data. Ms. Kellogg was also asked to attend Montgomery College's strategic planning kick-off meeting in the

afternoon. The meeting convened local business and education stakeholders to discuss how Montgomery College's 2025 strategic plan can be responsive to the community.

Career Preparation Expansion Act of 2017 (SB978)

The Career Preparation Expansion Act of 2017 (SB978), requires the Maryland Longitudinal Data System (MLDS) Center and the Governor's Workforce Development Board (GWDB) to produce a report on employment outcomes for high school graduates five years after graduation, which must be submitted on or before December 1st of each year to the Governor and General Assembly. Ross Goldstein and Ann Kellogg met with Michael DiGiacomo and Grason Wiggins of the GWDB on August 30th to discuss report specifications. The Center presented a series of tables and reporting metrics for discussion. The Center will begin work on pulling data tables for a second meeting later in September.

Data Governance Advisory Board Meeting

The Data Governance Advisory Board (Data GAB) met on August 15th. Data GAB members reviewed the 2018-2019 Data Collection Calendars developed by partner agencies. Data GAB members and Center staff discussed relevant issues from the June Governing Board meeting and potential additions to the Data Inventory. The meeting also consisted of a discussion on the impending decrease in the collection and transmission of social security numbers, especially for K12 students, and the potential impact on the Center's identity resolution processes.

SLDS Workshop: Multi-Agency Strategies for Sharing and Linking Data

Laia Tiderman attended a SLDS Workshop provided by the U.S. Department of Education, SLDS State Support Team on Multi-Agency Strategies for Sharing and Linking Data. Ms. Tiderman presented on the structure and organization of the MLDS Center as an example of a centralized SLDS. Ms. Tiderman had the opportunity to learn about the systems and processes other SLDS use in linking data, as well as, to network with peers in other states. Ms. Tiderman began discussions with the State Support Team and neighboring states on the potential to acquire federal and military employment data.

Center Output

The Center completed and posted a new *Information Brief* highlighting the findings in the MLDS Center research report *Brain Drain in Maryland: Exploring Student Movement from High School to Postsecondary Education and the Workforce*. The Center used GovDelivery, it's email communications management system, to send a blast email out to all of its stakeholders and subscribers to inform them of this new product.

Research Branch

Commission on Innovation and Excellence in Education (Kirwan Commission)

On August 15th, Dr. Bess Rose and Dr. Angela Henneberger presented further findings from the poverty study to the Kirwan Commission. In response to their questions and requests from the previous presentation, they conducted the same analyses for each local school system, and found considerable variation across the state in the roles of student and school poverty. They also conducted a threshold analysis in order to identify the school poverty concentrations at which school poverty most drastically

affects outcomes. Following the presentation to the full commission, Drs. Rose and Henneberger participated in the afternoon meeting of Workgroup #4 and answered their questions about the research findings.

Grants

The research team submitted an application for the Institute of Education Sciences (IES) topic on Research-Practitioner Partnerships in Education Research, focusing on the Maryland teacher pipeline. If funded, this research will help to inform policy makers on critical questions related to the teacher pipeline.

The grant was subject to the Center's *Policy and Procedures for External Researchers and Grant Funded Projects.* Specifically, the researchers submitted an application and formal proposal that was reviewed by MLDS Center staff and the Research and Policy Advisory Board. The materials were also sent to the partner agencies' Assistant Attorneys General and subject matter experts. Due to the August due date, final approval was sought and received from the Governing Board Chairman to proceed with the Center's support of the grant. Nonetheless, the grant will be presented to the Governing Board at the September meeting.

The research team is also preparing a grant application for the Spencer Foundation small research grant award. This project will focus on the risk and protective factors associated with long term academic and career outcomes for students living in poverty and is a follow up to research requests from the Department of Legislative Services and the Commission for Innovation and Excellence in Education.

Research Reports

The research team conducted additional analyses on the relation between student and school level poverty and race and long term academic and career outcomes. Additional analyses included running separate models for each local school system to determine whether results differed, and results did vary by local school system. Additionally, the research team examined relations between poverty, outcomes by student level poverty and school level poverty. Relations varied by student poverty with student usually in poverty faring the worst for most outcomes. Results also varied by school poverty. These results were presented to the Kirwan Commission in August.

A research proposal on the prevalence of mobile students in Maryland schools has been fully drafted. This research project has two main goals: 1) to examine the extent and type of students' mobility within the MLDS data and to investigate the potential impact on statistical inferences if the multiple membership data structure is ignored when fitting a multilevel model to the educational data stored in MLDS. The results of this research have design implications on future studies conducted with Center data. Descriptive statistics of the mobility rates for selected cohorts of students in different educational stages: elementary school, middle school, and high school have been prepared. The results suggested that it is not uncommon for Maryland public school students to transfer to a different school or different schools. For middle school students, the mobility rate can be more than 20% over the course of middle school years. The mobility rate is about 17% for high school students and about 10% for elementary school students over the school years, correspondingly. Further, the mobility rates are higher for FARMS

students than for non-FARMS students.

The research team has performed an analysis in which health CTE completers are matched to other high school completers to limit the observable differences between the groups (namely CTE completers are more likely to be female, FARMS, and have higher GPAs and test scores). In general, results indicate that these students were more likely to enter a 2-year program, with a slight decrease in 4-year enrollment, and that these effects extend to degrees. Interestingly, completing a health CTE increases the likelihood of enrolling in a health major in both types of programs and being employed in a health related field after graduation.

Personnel

The research team held a new researcher training on August 30, 2018. The training included information about the history, mission, and organization of the Center, an overview of confidentiality and privacy laws provided by Dawn O'Croinin, Assistant Attorney General, and an orientation to the research team policies and procedures and use of MLDS data. This training has been documented so it can be easily replicated for new researchers each year. The Research Branch welcomed an additional postdoctoral fellow and 2 graduate students from the University of Maryland College Park, an additional graduate student at the School of Social Work, and a graduate student from the University of Maryland Baltimore County.

Statistics Trainings

Dr. Bess Rose, Statistician with the research team, attended a training entitled Structural Equation Modeling (SEM) and Related Topics, conducted by Dr. Gregory R. Hancock (UMCP). Topics included latent variable path models, two-step SEM, multigroup SEM, latent moderation and nonlinear relations, and power analysis in SEM. The workshop covered theoretical as well as practical considerations in the use of SEM and provided a sample MPlus code.

Dr. Dawnsha Mushonga, Postdoctoral Fellow with the research team, attended a month long statistical training hosted by the Inter-institutional Consortium for Political and Social Research (ICPSR). The trainings included lectures on Matrix Algebra, in addition to three 4-week courses in Longitudinal Analysis, Regression Analysis, and Structural Equation Modeling with Latent Variables. These workshops helped to increase Dr. Mushonga's working knowledge of advanced longitudinal data analyses, the statistical programs, SAS (through Longitudinal Analysis) and STATA (through Structural Equation Modeling), which are often used with longitudinal data, in addition to gaining practice interpreting and writing up results.

Drs. Bess Rose and Dawnsha Mushonga also attended a training workshop on latent growth curve analysis, hosted by the School of Social Work. This workshop focused on estimating growth in latent variables and assessing how they influence each other over time. This workshop discussed measuring single and multiple variables over time, in addition to piecewise growth ("spline") models which are used with non-linear growth which is broken up into segments or knots to estimate changes. These trainings provided additional statistical knowledge to conduct analyses with both observed and latent variables,

interpret results, and assess data-model fit. These trainings also provided resources with syntax files and Mplus output which can be referenced for future use. These methods will be utilized in projects with longitudinal data from the MLDS Center.

Synthetic Data Project

The Synthetic Data Project (SDP) Team had a busy August. First, the team welcomed a new member, Dr. Mark Lachowicz who just completed his Ph.D. at Vanderbilt and joins the team as a PostDoctoral Fellow. Dr. Lachowicz has excellent statistical analytic skills and will take the lead in our new work group testing the research utility of analyses run on the Synthetic Data as compared to the actual data in the MLDS. This is a critical step in this project, which will determine how close analyses on the synthetic data mimic the same analyses on the real data. The other important step is to determine how safe the synthetic data are with respect to disclosure risk to the individuals represented in the real data. That process will begin later this year. Members of the Team have been training Dr. Lachowicz on the synthetic data sets and gold standard data sets (GSDS), getting him oriented to the computer system and software, and getting him settled in with an office in Baltimore. The team is excited to have Dr. Lachowicz on board and look forward to his contributions to the project.

Work continues of the GSDS Data Dictionary and the design and construction of the data warehouse. Star schema code have been developed for the post secondary to workforce data tables and the quality of the original GSDS is being assessed compared to those generated with the new coding. In terms of the synthetic data models, the team has condensed and added detail to the regression/classification tree procedure and continues to refine the synthetic models and procedures.

Finally, the team began disseminating what they have been learning over the first two years of this project to others who have interest or might be working on similar synthetic data efforts. The team presented at the Joint Statistical Meeting of the American Statistical Association and have submitted a manuscript to the Journal of Research on Educational Effectiveness for peer review about the project thus far.

System Management

Tasks

The system management team:
1. Worked with DoIT to create Virtual Private Routing Network (VPRN) to 550 West Baltimore Street so MLDSC users there can be part of direct access to MLDSC Network;
2. Implemented new desktop and started the encryption project with DoIT for the desktops;
3. Completed all processes for new MLDSC research staff including creating Virtual Machines and all related software installation;
4. Completed the yearly review of MLDSC staff members and their security access to the system;
5. Worked with MVA to resume submission of Social Security Numbers, including the information for the period of time that MVA stopped providing SSNs;
6. Worked with MSDE RTTT staff to assist with consolidating and terminating certain portions of the RTTT website;

7. Along with MSDE and DoIT, continued to evaluate different options for continuing the Center's Oracle licensing.
8. Continued to meet monthly to address security issues and complete actions to tighten the Center's security profile, including the ongoing analysis and review of the weekly Intrusion Detection System reports; and
9. Applied all required monthly desktop and server patches.

Data Loads

The system management team:
1. Completed data tables for the Dual Enrollment Report and dashboards with added elements;
2. Completed loading 369,960 MHEC Enrollment Information System records for Winter and Spring 2018 terms (the load included 287,000 new attendance records and 83,000 updates to previously-loaded student clearinghouse records with EIS facts - term credit hours attempted, etc;
3. Completed 15,039 new identities for post-secondary students who did not previously exist in MLDSC data;
4. Completed loading DLLR data files for quarters 1 of 2018;
5. Completed loading DLLR yearly data file for 2017; and
6. Performed ongoing identity resolution for individuals who have multiple system ID's for the same identifier.

Data Requests

MLDS Center received the following data requests in June, July and August:
1. Postsecondary and workforce outcomes for Montgomery County high school graduates (Isaiah Ellis, MHEC);
2. The number of Maryland postsecondary graduates who remain in Maryland (James Palma, Department of Commerce).
3. Five quarter median wages of the December 2016 and May 2017 bachelors recipients from Morgan State University by broad academic program and by NAICS codes (Cheryl Rollins, Morgan State University).
4. High school pathways - information on whether students completed graduation requirements using (a) world language, (b) advanced technical education, or (c) CTE and whether those students enrolled in postsecondary education, and where? (Dara Shaw, MSDE).
5. Data on the postsecondary outcomes of Anne Arundel County Students who take part in the Anne Arundel County Public Schools internship program (Rudy Ruiz, Maryland Business Roundtable and Tammy Diedrich, Anne Arundel County Public Schools).
6. Average high school GPA by county based on average income in county (Daniel Greigg).
7. Percentage of teachers and healthcare professionals from University System of Maryland institutions. (DeWayne Morgan, USM).
8. The number of Maryland Public H.S. graduates enrolled in college (Dara Shaw, MSDE).

MLDS Center completed the following data requests in June, July and August:

1. Postsecondary and workforce outcomes for Montgomery County high school graduates (see #1 above).
2. Morgan State University bachelor recipients (see #3 above).
3. Number of Maryland postsecondary graduates who remain in Maryland (see #2 above).
4. A frequency distribution for high school graduates from Charles, Calvert and St. Mary's Counties enrolling in college (Chad Muntz, USM).
5. High school pathways (see #4 above).
6. The request for average high school GPA by county based on average income in each county (see # 6 above) was not fulfilled because MLDS Center does not include county income data and the remaining portion of the request is single sector (only MSDE K-12 data).
7. Provided a data table of a recent cohort of high school graduates enrolled in college disaggregated by admissions requirements in response to # 8 above.