



MLDS CENTER

Maryland Longitudinal Data System

Address 550 West Baltimore Street
Baltimore, MD 21201
Phone 410-706-2085
Email mlds.center@maryland.gov
Website www.MLDSCenter.org

MEMORANDUM

TO: MLDS Governing Board
FROM: Ross Goldstein
DATE: May 21, 2018
SUBJECT: External Researcher and Grant Funded Project

Purpose

The Center received its first application under the new *Policies and Procedures for External Researchers and Grant Funded Projects*. Under the procedures, projects require Governing Board approval.

Background

Project Title

How Do Postsecondary Workforce Readiness Indicators Relate to College Readiness Indicators?

Researcher

Dr. Rachel Durham is the applicant for this external researcher and grant funded project. Dr. Durham is a researcher at the Baltimore Education Research Consortium at the Johns Hopkins University. Dr. Durham has previously served as a “temporary researcher” with the Center. The prior research project was completed by Dr. Durham on behalf of Baltimore's Promise.

Project Summary

This project starts with the premise that state-level college and career readiness has focused primarily on academic readiness for college, with less research on career readiness. Given that a significant number of high school graduates work fulltime right away without enrolling in college (especially in Baltimore City which is the focus of the study) providing information on indicators of readiness for the workforce and/or college would be of value to practitioners and policymakers.

This project seeks to develop indicators of readiness by simultaneously analyzing transitions into college and/or the workforce and identifying readiness factors in high school that relate to persistence in either or both destinations. The study will test whether the same student high school experience variables that indicate college readiness also relate to work readiness, and whether particular indicators are distinctly relevant to workforce readiness.

Grant Funding

On May 1, 2018, Dr. Durham submitted an application to the Spencer Foundation Small Research Grant Program. The requested funding amount was \$39,000, primarily to support her salary. The Center was not asked to and did not provide support for the grant application. If the Spencer Foundation Grant is not received, Dr. Durham plans to seek another funding source to support her work.

Review Process

The project was favorably reviewed by Center staff and was also presented to the Research and Policy Advisory Board at its May 31st meeting. The RPB also favorably reviewed the project proposal and recommended it's referral to the Governing Board for final approval.

Recommendation

I recommend that the Governing Board approve this External Researcher and Grant Funded Project application. The research is cross-sector and is responsive to several of the Governing Board's Research Agenda Questions (see [Research Agenda Questions](#) 2, 19, and 20). Dr. Durham has the requisite expertise and experience to conduct the planned research and has shown the ability to work Center data. Finally, the proposed research addresses an important topic that may provide actionable information for state and local education practitioners and policy makers.

Action

I request the Governing Board's review and approval of Dr. Durham's application for External Researcher and Grant Funded Project.

Attachments

- Application
- Curriculum Vitae for Dr. Durham
- Formal Proposal
- Requested Data

MLDS Center External Research Application

External Research Applicants are required to submit a Research Proposal Summary using this form. The summary covers the most frequently asked questions from the MLDS Governing Board, Research and Policy Advisory Board (RPB), and MLDS Center Staff.

Email address *

rdurham@jhu.edu

Research Applicant Name

Rachel E. Durham

Organization

Baltimore Education Research Consortium @ Johns Hopkins University

Phone Number

410-516-4936

Researcher Information

Please provide information about the Research Applicant's background, other relevant research, and related interests.

Research Applicant Background and Qualifications

Rachel E. Durham is an Assistant Professor in the School of Education at Johns Hopkins University. With a background in the sociology of education and demography, she serves as Director of Evaluation at the Baltimore Education Research Consortium (BERC), which is a research-practice partnership between the Baltimore City Public Schools, Johns Hopkins University, Morgan State University, and other community partners. She is lead researcher on a long-term study of the postsecondary outcomes among Baltimore City Schools students and partners with Family League of Baltimore to lead formative evaluations of community schools and associated out-of-school-time programs. She is interested in the topics of urban education, school reform, and educational inequality.

Does your project include additional Research Applicants?

☐ Yes. If so, please upload CV for all Research Applicants.

☒ No

Proposed Project

Project Title

How Do Postsecondary Workforce Readiness Indicators Relate to College Readiness Indicators?

Abstract or Brief Description

The vast majority of research on high school graduates' readiness for postsecondary destinations focuses on readiness for college, and even the parlance of "college and career readiness" inherently confounds readiness for either pathway. Building on an emergent line of research, and using a data source integrative of high school administrative data, college enrollment and workforce data for sequential cohorts of graduates of Baltimore City Public Schools, the proposed study will focus on explaining graduates' persistence in college and/or the workforce over the first four years after high school. The study will empirically test the extent to which different indicators of readiness are associated with success in college and workforce destinations. The results will provide a foundation to disambiguate and align preparation for different destinations, as well as information for district and school practitioners aiming to improve school-to-work transitions.

Research Project Question

What high school student experience indicators significantly relate to college persistence, what high school indicators significantly relate to persistence in the Maryland workforce, and what is the relative strength of the indicator sets for each destination?

Select the relevant MLDS Research Agenda Questions

- ☐ 1. What is the impact of early childhood education experiences and programs on children's school readiness and K-12 outcomes?
- ☐ 2. Are Maryland students academically prepared to enter postsecondary institutions and complete their programs in a timely manner?
- ☐ 3. What percentage of Maryland high school exiters go on to enroll in Maryland postsecondary education?
- ☐ 4. What percentage of Maryland high school exiters entering college are assessed to need to take developmental courses and in what content areas?
- ☐ 5. Which financial aid programs are most effective in improving access and success (i.e., retention and graduation) for Maryland students?
- ☐ 6. Assess the need for inclusion of online education data.
- ☐ 7. How likely are students placed in developmental courses to persist in postsecondary education and transfer and/or graduate?
- ☐ 8. Are community college students able to transfer within the state to 4-year institutions successfully and without loss of credit?
- ☐ 9. What are the differences in performance, retention, and graduation, including time to degree, of students who initially matriculate at a Maryland community college and transfer to a Maryland 4-year institution versus those who initially matriculate at a Maryland 4-year?
- ☐ 10. What are the differences in performance, retention and graduation, including time to degree, of students beginning in dual enrollment programs, at 2-year institutions and at 4-year institutions?
- ☐ 11. What are the characteristics of 2-year institutions that are allowing

students to persist most effectively and either graduate or transfer?

- ☐ 12. Which 4-year institutions are graduating students most effectively and in the timeliest fashion?
- ☐ 13. What happens to students who start at community colleges and do not go on to 4-year institutions?
- ☐ 14. What are the educational and labor market outcomes for individuals who use federal and state resources to obtain training at community colleges or other postsecondary institutions?
- ☐ 15. What economic value do noncredit community college credentials have in the workplace?
- ☐ 16. Are exiters of Maryland colleges successful in the workforce?
- ☐ 17. Assess STEM post-graduate student state and regional job acceptance and retention.
- ☐ 18. Assess training and retention of early childhood workforce in Maryland.
- ☐ 19. What are the workforce outcomes for Maryland students who earn a high school diploma (via high school graduation or GED®) but do not transition to postsecondary education or training?
- ☒ 20. What are the workforce outcomes for Maryland high school students who complete Career Technical Education coursework, who either enter the workforce directly or also obtain postsecondary education or training?
- ☐ 21. What are the workforce outcomes of Maryland high school non-completers?

Explanation of Cross-Sector

The research is cross-sector, incorporating both education and workforce data, examining the persistence of Baltimore graduates as they move from high school to either college or to work. Preliminary analyses also show that graduates often pursue both college and the workforce simultaneously.

Please describe how the proposed research will inform choices to improve student and workforce outcomes in the State of Maryland. Consider including implications such as broadening the participation of underrepresented groups (e.g. gender, ethnicity, geographic, etc.), enhancing the infrastructure for research and education, and benefiting and/or informing educational policy and practice.

Benefit to the State of Maryland

A benefit that will accrue to the State of Maryland will be the ability to provide information to schools serving high-need populations, which struggle to equitably prepare students for productive young adulthood – both college-bound students and those confronting barriers to enrollment. Clarity about what successful preparation entails for workforce-bound students is crucial. Moreover, measures of work readiness are relevant not only for high school students but for adults of all ages and educational levels. Understanding preparation incongruities informs questions about relationships between individual factors and structural characteristics of the labor force writ large.

Estimated Timeline for the Proposed Project

October 1, 2018 through September 30, 2019

Available Resources

Please provide information on funding for this project. If it is grant funded, please be sure to complete the Grant Application Checklist and upload it as part of this submission.

Proposal was submitted on May 1, 2018 to the Spencer Foundation's Small Research Grant Program

***Note:** Additional information from Grant Notification Checklist is provided below.

Proposed Center Output and Further Development

Please provide a description of the proposed Center Output to be completed as part of this work. Additionally, please provide your plans for further development of the Center output. Be sure to include possible publications and presentations in your description. Further developed work occurs after System access is terminated and may only use aggregate, de-identified data that was developed as part of the Center output.

Description of the proposed Center Output


I will prepare a presentation to share in a MLDS research colloquium, as well as a white paper or research report that can be posted on the MLDS website and/or shared with stakeholders.

Plans for further development


In late summer 2019, I will finalize a research report as well as manuscripts and presentation materials to submit to a peer-reviewed journal and at least one peer-reviewed annual research conference.

Supporting Documents


Curriculum Vitae for Research Applicants

 DurhamRachelCV2...

Formal Research Proposal




 Formal Proposal fo...

Data Request Template

 Data Request Tem...

Grant Application Checklist (If Applicable)

IRB Approval and Completed Trainings

 DOD_Certificate_d... FERPA101_certific... FERPA201_certific...

This form was created inside of Maryland.gov.

Google Forms

Available Resources

A. Grant Funds

- ☐ Yes – grant funds have already been secured for this project
- ☒ Yes – I have applied to receive grant funds for this project
- ☐ Yes - I plan to apply for grant funds for this project
- ☐ No - There are no grant funds and no plans to apply for grant funds in support of this project..

B. If yes to A

1. Provide the name of the grantor:

Spencer Foundation Small Research Grant Program

2. Provide a copy of the RFP or grant program description.

Program description and application requirements are provided on the Spencer Foundation website.
<https://www.spencer.org/small-research-grants>

3. Provide the amount of funds sought/awarded:

I requested \$38,898, nearly all for my own salary/fringe support. Spencer strictly disallows any administrative charges, but I can come up with any MLDS staff costs through another source.

4. Provide the date you applied or plan to apply for the grant:

May 1, 2018

5. Do you need (or anticipate needing) the Center to provide a letter of support for your grant application?

☐ Yes ☒ No

6. If you have not yet been awarded a grant, do you intend do this project grant funds cannot be secured?

☐ Yes

☒ No

Not immediately, but if this application is not funded, I intend to immediately re-apply in the next cycle (applications accepted every 4 months) or talk to another local funder.

C. Please describe any other type of funding you may be using to support this project.

N/A

Rachel E. Durham
Johns Hopkins University
School of Education
Baltimore Education Research Consortium
2701 N Charles St, Suite 300, Baltimore, MD, 21218
+1 (410) 516-4936
rdurham@jhu.edu

EDUCATION

PhD, Pennsylvania State University, 2007
Sociology and Demography (dual title)

MA, Arizona State University, 1999
Sociology

BA, University of Mississippi, 1995
Sociology; Minor: History

PROFESSIONAL EXPERIENCE

Assistant Professor (Research track: July 2014 – Present; Clinical track: August 2013 – July 2014). School of Education, Johns Hopkins University, Baltimore Education Research Consortium.

Postdoctoral Fellow (September 2011 - July 2013). Vienna University of Economics and Business, Vienna Austria.

Assistant Research Scientist (June 2007 - July 2011). Center for Social Organization of Schools, Baltimore Education Research Consortium, Johns Hopkins University.

Research Assistant II (February 2000 - June 2002). Center for Social Organization of Schools, Johns Hopkins University.

AWARDS

AERA Division H Outstanding Publication Award in Assessment and Accountability, American Education Research Association. (April 2015).

AERA Division H Outstanding Publication: Planning, Policy, or Management Research, American Education Research Association. (April 2012).

RESEARCH

Journal Articles Published (*peer reviewed)

Durham, R.E., Shiller, J., Connolly, F. A multifaceted approach to developing relationships. *Phi Delta Kappan*, 99(5), 36-37.

*Durham, R. E., Bell-Ellwanger, J., Connolly, F., Howard Robinson, K., Olson, L., Rone, T. (2015). University-District Partnership Research to Understand College Readiness among Baltimore City Students. *Journal of Education for Students Placed At Risk*, 20(1-2), 120-140.

*Barakat, B. F., Durham, R. E., Guimareas, C. R. (2013). Age Compositional Adjustments for Educational Participation Indicators. *Population*, 68(4), 607-626.

*Barakat, B. F., Durham, R. E. (2013). Dropout Mayors and Graduate Farmers: Educational Fertility Differentials by Occupational Status and Industry in Six European Countries. *Demographic Research*, 28, 1213-1262.

*Bodovski, K., Durham, R. E. (2010). Parental Practices and Achievement of Mexican and Chinese Immigrant Children in the U.S.: Assimilation Patterns? *Research in Comparative and International Education*, 5(2), 156-175.

*Durham, R. E., Farkas, G., Scheffner-Hammer, C., Tomblin, B., Catts, H. (2007). Kindergarten Oral Language Skill: A Key Variable in the Intergenerational Transmission of Socioeconomic Status. *Research in Social Stratification and Mobility*, 25, 294-305.

*Durham, R. E., Sparks, J. S. (2006). Nonmetropolitan Status and Kindergarten's Early Literacy Skills: Is There A Rural Disadvantage? *Rural Sociology*, 71, 625-661.

Book Chapters (*peer reviewed)

*Barakat, B. F., Durham, R. E. (2014). Future Education Trends. In Wolfgang Lutz, William Butz, Samir KC (Eds.), Book Title: World Population and Human Capital in the 21st Century (pp. pp. 397-433). Oxford: Oxford University Press.

*Galindo, C. E., Durham, R. E. (2008). Immigration and Childhood. Encyclopedia of the Life Course and Human Development. Farmington Hills, MA: Gale Publishing.

Sanford-DeRousie, R. E., Durham, R. E. (2008). Processes and Factors Influencing Family Contributions to School Readiness. In Alan Booth, Anne C. Crouter, and Elliot B. Weininger (Eds.), Disparities in School Readiness: How Families Contribute to Transitions into School. New York: Lawrence-Erlbaum.

*Farkas, G., Durham, R. E. (2007). The Role of Tutoring in Standards-Based Reform. In Adam Gamoran (Ed.), *Standards-Based Reform and the Poverty Gap: Lessons for "No Child Left Behind"*. Washington, DC: Brookings Press.

Selected Research Reports

Durham, R.E. (forthcoming, May 2018). *Improving Baltimore Students' Access to College: A Qualitative Study of Two College Bound Delivery Models*. Baltimore, MD: Baltimore Education Research Consortium.

Durham, R.E., Connolly, F. (2018). *Launching into Adulthood: 2009 Graduates of Baltimore City Public Schools*. (Research Brief Series.) Baltimore, MD: Baltimore Education Research Consortium.

Durham, R.E., Connolly, F. (2017). *Strategies for Student Attendance and School Climate in Baltimore's Community Schools*. Baltimore, MD: Baltimore Education Research Consortium.

Durham, R.E., Ruiz, R., Connolly, F. (2017). *Baltimore City Schools College Fact Book*. Baltimore, MD: Baltimore Education Research Consortium.

Durham, R.E. (2016). *Stocks in the Future: An Examination of Participant Outcomes in 2014-15*. Baltimore, MD: Baltimore Education Research Consortium.

Durham, R.E., Connolly, F. (2016). *Baltimore Community Schools: Promise and Progress*. Baltimore, MD: Baltimore Education Research Consortium.

Durham, R.E., Stein, M. Connolly, F. (2015). *College Opportunities and Success: Baltimore City Graduates through the Class of 2014*. Baltimore, MD: Baltimore Education Research Consortium.

Connolly, F., Olson, L., Durham, R.E., Plank, S. (2014). *Indicators of College Readiness: A Comparison of High School and College Measures*. Baltimore, MD: Baltimore Education Research Consortium.

Durham, R.E. (2014). *A Preliminary Examination of Baltimore Ingenuity Student Outcomes: Classes of 2008 and 2013*. Baltimore, MD: Baltimore Education Research Consortium.

Durham, R.E., Bettencourt, A., Connolly, F. (2014). *Measuring School Climate: Using Existing Data Tools on Climate and Effectiveness to Inform School Organizational Health*.

Durham, R.E., Olson, L. (2013). *College Enrollment and Degree Completion for Baltimore City Graduates through the Class of 2012*. Baltimore, MD: Baltimore Education Research Consortium.

Durham, R.E., Westlund, E. (2011). A Descriptive Look at College Enrollment and Degree Completion of Baltimore City Graduates. Baltimore, MD: Baltimore Education Research Consortium.

Durham, R.E., Plank, S. (2010). Maintaining High Achievement in Baltimore: An Examination of the Elementary Grade Trajectories of Four Recent City Schools First Grade Cohorts. Baltimore, MD: Baltimore Education Research Consortium.

Balfanz, R., Durham, R., Plank, S.B. (2008). Lost Days: Patterns and Levels of Chronic Absenteeism among Baltimore City Public School Students, 1999-00 to 2005-06. Baltimore, MD: Baltimore Education Research Consortium.

Plank, S., Durham, R.E., Farley-Ripple, E., Norman, O. E. (2008). "First Grade and Forward: A Seven-Year Examination within the Baltimore City Public School System. Baltimore, MD: Baltimore Education Research Consortium.

Mac Iver, M., Durham, R. E., Plank, S., Farley-Ripple, E., Balfanz, R. (2008). The Challenge of On-Time Arrival: The Seven-Year Paths of Baltimore's Sixth Graders of 1999-2000. Baltimore, MD: Baltimore Education Research Consortium.

Selected Presentations (*peer reviewed)

*Durham, R.E., Connolly, F. (April 14, 2018). College Enrollment and Summer Melt in a Large Urban District: Student and High School Factors. Annual Meetings of the American Educational Research Association, New York, New York.

*Durham, R.E., Connolly, F. (May 1, 2017). College and Career Readiness: Research-Practice Partnerships and the Challenge of District Research Use. Annual Meetings of the American Educational Research Association, San Antonio, TX.

*Durham, R.E., Connolly, F. (May 1, 2017). Growing Community Schools: A City-Wide Effort in Year 3. Annual Meetings of the American Educational Research Association, San Antonio, TX.

*Durham, R.E. (June 2016). Baltimore City's Community School Strategy, Out-of-School Time Programs and Outcomes for Year 3. Maryland State Department of Education Data Summit, MSDE, Ellicott City, MD.

*Durham, R. E. (April 2016). Research and the Nature of the Collaborative Partnership: Insight on What Was Learned. Annual Meetings of American Educational Research Association, Washington, DC.

Durham, R.E., Bell, A.E., (September 2015). "District-Researcher Partnership: The Best of Both Worlds, the Best for Our Students," 20th Annual Meetings of the National College Access Network, Orlando, Florida.

- *Olson, L., Durham, R.E., Connolly, F. (April 2015). September Absences and Their Implications for Year-Long Attendance. Annual Meetings of the American Education Research Association.
- *Barakat, B.F., Durham, R.E., Guimaraes Rodrigues, C. (September 2012). "Levelling the Playing Field' with Age-Standardized Education Indicators". Statistische Woche Wien (Statistics Week in Vienna), Technische Universität Wien (Technical University of Vienna), Vienna, Austria.
- *Barakat, B.F., Durham, R.E. (June 2012). "Dropout Mayors and Graduate Farmers: Educational Fertility Differentials by Occupational Status and Industry in Six European Countries". European Population Conference, European Association for Population Studies, Stockholm, Sweden.
- *Guimarães Rodrigues, C., Durham, R.E., Barakat, B.F. (June 2012). "Educational Expansion in Latin American Countries: Has Educational Attainment Inequality Narrowed?" European Population Conference, European Association for Population Studies, Stockholm, Sweden.
- *Durham, R.E., Barakat, B.F. (April 2012). "Way Past 2015: Critically Debating the Feasibility, Utility, and Interpretation of Long-term Educational Development Projections". Annual Meetings of the Comparative and International Education Society, San Juan, Puerto Rico.
- *Durham, R.E., Condliffe, B., Plank, S. (August 2011). "When Less Is More: High Stakes Accountability and the Institutional Myth of Data-Driven Decision Making". Annual Meeting of the American Sociological Association, American Sociological Association, Las Vegas, NV.
- *Mac Iver, M., Durham, R.E. (April 2011). "Gradual Disengagement: Addressing the Role of Chronic Absenteeism in Graduation Outcomes." Annual Meetings of the American Educational Research Association, American Educational Research Association, New Orleans, LA.
- *Bodovski, K., Durham, R.E. (August 2008). "Parental Practices and the Achievement of Immigrant Children." Annual Meetings of the American Sociological Association, American Sociological Association, Boston, MA.
- *Durham, R.E., Farkas, G. (April 2007). "Minority Language Status, Generation, and the Educational Performance of Immigrant Children." Annual Meetings of the Population Association of America, Population Association of America, New York, NY.

- *Durham, R.E., (March 2006). "Who Are the Language-Minority Students of the Early Childhood Longitudinal Study, Kindergarten Cohort? Demographic Predictors of English Language Acquisition." Annual Meetings of the Population Association of America, Population Association of America, Los Angeles, CA.
- *Sparks (Smith), J., Durham, R.E. (August 2005). "Growth Trajectories of Literacy Skills among Nonmetropolitan Students: Do Early Disadvantages Persist?" Annual Meetings of the Rural Sociological Association, Rural Sociological Association, Tampa, FL.
- *Durham, R.E, Farkas, G. (August 2004). "The Importance of Early Language Skills: An Explanation for Social Class Disparities in Elementary School Performance." Annual Meetings of the American Sociological Association, American Sociological Association, San Francisco, CA.

Invited Presentations

- Durham, R.E., (October 27, 2017). Review of City Schools Graduates: College Applications, Acceptances, and Enrollment for Your High School. College Bound Foundation's Annual Principals' Retreat.
- Durham, R.E., (December 1, 2016). Postsecondary College and Career Outcomes among Baltimore City Schools Graduates. Baltimore's Promise College and Career Network Launch, University of Baltimore.
- Durham, R.E., Connolly, F. (November 4, 2016). Postsecondary College and Workforce Outcomes among Baltimore City Graduates. Maryland Longitudinal Data System Research Colloquium Series. University of Maryland, Baltimore.
- Ruiz, R. and Durham, R.E. (January 27, 2016). District-Researcher Partnership Research and Student Postsecondary Access. College Board Middle States Regional Forum. College Board, Baltimore, MD.
- Durham, R.E. (October 23, 2015). College Access and Degree Completion Outcomes of Baltimore City Graduates through the Class of 2014. College Bound Foundation's Annual Principals' Retreat. College Bound Foundation, Baltimore, MD.
- Durham, R.E. (July 21, 2015). Attendance is Everyone's Job: Sharing What We Know, Where Challenges Remain, and What We Can Do. Family League of Baltimore Summer Training Institute for Community School Coordinators. Baltimore Family League, Baltimore, MD.
- Connolly, F., Durham, R.E. (April 3, 2015). Indicators of College Readiness. Maryland Longitudinal Data System Research Colloquium Series. University of Maryland, Baltimore.

Durham, R.E. (March 14, 2014). What Does Disengagement Look Like? National Association of State Boards of Education Study Group. NASBE, Arlington, VA.

Durham, R.E. Connolly, F., & Stein, M. (January 15, 2014). Finding Balance in District-University Research Partnerships. School of Education Research Colloquia Series. Johns Hopkins University, Baltimore, MD.

Durham, R.E. (May 2010). The Baltimore City Public Schools in the High Stakes Testing Context of NCLB. Invited lecture in graduate education seminar at University of Maryland, Baltimore County.

Durham, R.E. (March 2010). 'We already knew that, but can we move further?' How University Researchers and School Districts Can Translate Research Into Policy and Practice. Annual Meetings of the American Educational Research Association, Denver, CO.

Durham, R.E., Cheng, H.N. (May 2009). Chronic Early Absence: Why Does It Matter? What Could We Do in Baltimore? Baltimore City Attendance Work Group. Baltimore City Public Schools and Baltimore Mayor's Office, Baltimore, MD.

Durham, R.E. (November 2007). The Definition of Tutoring and the Reality of Supplemental Educational Services in the Context of *No Child Left Behind*. Education Policy Forum. IES/AERA, Washington, DC.

Selected Grants, Contracts, and Sponsored Research

Durham, R.E. (Principal Investigator). "OrchKids in Baltimore Study." Baltimore Symphony Orchestra, \$26,749. (Oct. 1, 2017 – Sep 30, 2018).

Durham, R.E. (Principal Investigator). "College Bound Efficacy Study." College Bound Foundation, \$18,600. (Nov 1, 2016 – July 31, 2018).

Durham, R.E. (Principal Investigator). Connolly F., (Key Personnel). Learning Journeys Evaluation." Maryland State Department of Education, \$10,000. (Sept 1, 2016 – August 31, 2017).

Durham, R.E. (Principal Investigator), Connolly, F. (Key Personnel) "Family League Community Resources School Research Study," Sponsored by Family League of Baltimore, (Jan 1, 2016 – June 30, 2017).

Connolly, F. (Principal Investigator), Durham, R. E. (Key Personnel) "Blaustein Foundation Award," Sponsored by Jacob And Hilda Blaustein Foundation, \$50,000.00. (July 1, 2015 - Present).

Connolly, F. (Principal Investigator), Durham, R. E. (Key Personnel), "BERC and Baltimore City Public Schools to Advance Academic Success," Sponsored by Abell Foundation Inc., Foundation, \$55,000.00. (July 1, 2015 - Present).

Connolly, F. (Principal Investigator), Durham, R. E. (Key Personnel) "BERC - College Access and Readiness for Baltimore City Students," Sponsored by Abell Foundation Inc., Foundation, \$95,000.00. (May 1, 2014 - Present).

Durham, R.E. (Principal Investigator). Doctoral Dissertation Research Grant, American Education Research Association. English Oral Language, Generation Status, and the Educational Performance of Immigrant Children, \$15,000 (July 2005-June 2006).

TEACHING

Johns Hopkins University

Doctoral Directed Readings (ED 855.730) Spring 2016, Fall 2017, Spring 2018

SERVICE

School and Departmental Service

Member, Student Academic Affairs Committee (September 2015 - Present).

Interview Panel Member for 5 Graduate Student Candidates. (Jan-Feb 2015; Jan-Feb 2016).

Member, Doctoral Committee. (May 2014 – June 2015).

Member, International Committee. (September 2013 - August 2014).

Data Security Manager, CSOS Restricted-use Data License. (Jun 2007 – Jul 2011; Aug 2013 – Present).

Professional Activities

Maryland High School Task Force, Member. (January 2017 – Present)

Baltimore City Community College Accountability Task Force, Member. (January 2017 – Present)

Director of Evaluation, Baltimore Education Research Consortium (April 2017 – Present)

Research Co-Director, Baltimore Education Research Consortium (August 2013 – April 2017)

Chair of Outstanding Publications Committee, Division H/American Educational Research Association. (April 2016-April 2018).

Co-Chair of Outstanding Publications Committee, Division H/American Educational Research Association. (April 2015-April 2016).

Member of Steering Committee, Baltimore School Climate Collaborative. (August 2015 – Present).

Professional Mentor, American Educational Research Association, Division H. (April 2015 - June 2016).

Assistant Co-Chair of Outstanding Publications, Division H/American Educational Research Association. (April 2014 - April 2015).

Member, Baltimore Attendance Collaborative. (July 2010 – July 2011; August 2013 – July 2015).

Guest Speaker, Maryland State Department of Education. (November 2013; December 2014; September 2016; May 2017).

Member of Steering Committee, Baltimore Neighborhood Indicators Alliance. (October 2013 - Present).

Research Peer Reviews

Reviewer, *American Sociological Review*. (2016 – Present).

Reviewer, *Educational Researcher*. (2016 – Present).

Reviewer, *Journal of Rural Studies*. (2015 – Present).

Reviewer, *Equity and Excellence in Education*. (2014 - Present).

Reviewer, *Journal of Education for Students Placed At Risk*. (October 2013 - Present).

Reviewer, *Sociological Perspectives*. (2011 - Present).

Reviewer, *American Journal of Education*. (January 2010 - Present).

Reviewer, *Elementary School Journal*. (2010 - Present).

Reviewer, *Rural Sociology*. (2007 - Present).

Professional Memberships

American Educational Research Association. (2005 - Present).

American Sociological Association. (2004 - 2013).

Population Association of America. (2004 - 2014).

Comparative and International Education Society. (2011 – 2012).

International Union for the Scientific Study of Population. (2011 – 2013).

Formal Research Proposal to MLDSC

Project Title:

How Do Postsecondary Workforce Readiness Indicators Relate to College Readiness Indicators?

Principal Investigator and Analyst:

Rachel E. Durham, Ph.D.

Baltimore Education Research Consortium

Johns Hopkins University

Date of Submission:

May 8, 2018

Abstract

Project Title: How Do Postsecondary Workforce Readiness Indicators Relate to College Readiness Indicators?

The vast majority of research on high school graduates' readiness for postsecondary destinations focuses on readiness for college, and even the parlance of "college and career readiness" inherently confounds readiness for either pathway. Building on an emergent line of research, and using a data source integrative of high school administrative data, college enrollment and workforce data for sequential cohorts of graduates of Baltimore City Public Schools, the proposed study will focus on explaining graduates' persistence in college and/or the workforce over the first four years after high school. The study will empirically test the extent to which different indicators of readiness are associated with success in college and workforce destinations. The results will provide a foundation to disambiguate and align preparation for different destinations, as well as information for district and school practitioners aiming to improve school-to-work transitions.

Narrative

Project Title: How Do Postsecondary Workforce Readiness Indicators Relate to College Readiness Indicators?

Problem statement

State-level college and career readiness aims have an outsized focus on academic readiness for college (Barnes & Slate, 2013; Symonds, Schwartz & Ferguson, 2011), and similarly, research on postsecondary success primarily focuses on college access and persistence (Conley, 2007; Roderick, Nagaoka & Coca, 2009). These emphases reflect changes in the labor market whereby postsecondary education is increasingly relevant for long-term job stability and gainful earnings (Carnevale, Strohl & Smith, 2009; Carnevale, Rose & Cheah, 2011). However, sizeable shares of high school graduates intend to work fulltime right away without enrolling in college (Ingels & Dalton, 2013; Radford, Fritch, Leu & Duprey, 2018). Further, even students enrolled in college co-identify as both student and worker (Perna, 2010) as financial challenges compel more students to work while enrolled (Ehrenberg & Sherman, 1987; Gleason, 1993). These exigencies suggest that preparation for meaningful activity after high school should be more broadly construed than ‘readiness for college’ (Barnes & Slate, 2013; Gray & Herr, 2006; Symonds et al., 2011), and practitioners could benefit from information about indicators of readiness for both college and the workforce.

Description of the research

The research literature is surprisingly sparse with respect to workforce pathways of high school graduates, or alternatively, what best prepares graduates for mixed (i.e., college and work) pathways. This project will address this gap by simultaneously analyzing transitions into college and/or the workforce and identifying readiness factors in high school that relate to persistence in different destinations. This study will test whether the same student high school experience

variables that indicate college readiness also relate to work readiness, and whether particular indicators are distinctly relevant to workforce readiness.

Brief Review of the Literature. According to the Association of Career and Technical Education (ACTE), career readiness includes proficiency in core academic subjects, technical skills for particular industries, and traits like dependability and critical thinking (ACTE, 2010). The WorkKeys readiness assessment developed by ACT, Inc. (2011) also emphasizes hard and soft skills, especially reading and math proficiency, effective communication, and collaboration. Research on college readiness suggests that students should have academic subject proficiency (Barnes, 2008; Conley, 2007; 2008; Porter & Polikoff, 2012) and certain non-academic dispositions (Conley, 2007; Roderick et al., 2009). Accordingly, states and districts have adopted College and Career Readiness aims (e.g., Common Core State Standards, Next-Generation Science Standards) and assessments to better prepare students for postsecondary educational opportunities.

Differentiation between the ‘college’ and ‘career’ elements of ‘college and career readiness’ is rare, however. Recognizing the increasing importance of postsecondary education for gainful employment, the majority of literature on the transition from high school neglects workforce-bound graduates and focuses on high-school-to-college transitions (Blustein, Juntunen & Worthington, 2000; Gray & Herr, 2006; Worthington & Juntunen, 1997). Yet among a nationally-representative ninth grade cohort, 28% of graduates did not enroll in college during the first three years after high school, and one-third of non-enrollees reported that earning an income took precedence over further education (Radford et al., 2018). Little evidence exists about the stability of workforce-bound students’ employment, though related research suggests

young adults who ‘meander’ (Arnett, 2004) or ‘flounder’ via inconsistent participation in the labor force are at risk for lower lifetime earnings (Krahn, Howard & Galambos, 2012). The U.S. also lacks clear articulation systems between education and work (Kerckhoff, 2000; 2003; Rosenbaum, Kariya, Settersten & Maier, 1990), and as a result, schools have few metrics to inform students about their readiness for work in the same way that students are deemed ready for college (Casner-Lotto & Barrington, 2006; Conley, 2010).

As Achieve (2016) and others emphasize, career and college readiness markers naturally overlap. However, since the primary traditional role of secondary schools is to prepare students for tertiary education, there is “too little recognition of the role of the school in preparing students for citizenship and *employment*” [emphasis added] (Evans, 1968, p. 189, in Schultz and Stern, 2013). Further, 33 out of 37 states with definitions use a single definition that does not differentiate between college and career (Mishkind, 2014). This is unfortunate given the shares of graduates who do not access college (Green & Forster, 2003; Engberg & Wolniak, 2010; Page & Scott-Clayton, 2016), and the high numbers of college students who leave college without completing to enter the workforce (Bound et al., 2010; Goldrick-Rab, 2009).

This study will exploit an opportunity to analyze indicators of readiness for both destinations among a population of low-income high school graduates, who historically move directly into work at higher rates than higher-income peers. Although the term “readiness” in postsecondary contexts is ambiguous (Conley, 2007), for the current study, readiness means preparedness for consistent engagement in productive activity. The results will provide clarity about the extent of overlap between college and work-readiness and identify whether there are distinct metrics of workforce readiness that practitioners should emphasize for students with goals of working fulltime after graduation.

How this project aligns with [MLDS research agenda](#)

This project aligns with (B) Postsecondary Readiness and Access, as well as (D) Workforce Outcomes. The results this project will generate can answer questions of interest to school, district, and state-level practitioners. First, just as student factors in high school relate to on-time graduation and college readiness, they hold promise for understanding employment readiness. The research is cross-sector, incorporating both education and workforce, examining the persistence of Baltimore graduates as they move from high school to either college or to work. Preliminary analyses show that graduates often pursue both college and the workforce simultaneously. A benefit that will accrue to the State of Maryland will be the ability to provide information to schools serving high-need populations, which struggle to equitably prepare students for productive young adulthood -- both college-bound students and those confronting barriers to enrollment. Clarity about what successful preparation entails for workforce-bound students is crucial. Moreover, measures of work readiness are relevant not only for high school students but for adults of all ages and educational levels. Understanding preparation incongruities informs questions about relationships between individual factors and structural characteristics of the labor force writ large.

Research Questions and Methods

Research Questions:

- What high school indicators significantly relate to college persistence?
- What high school indicators significantly relate to persistence in the Maryland workforce?
- What is the relative strength of the indicator sets for each destination?

Hypotheses: Although some overlap between indicators of persistence in work and college is expected, one hypothesis is that the relationship between academic performance and persistence will be stronger for college than work, given the direct applicability of academics to college coursework. A second hypothesis is that student attendance and CTE pathway completion will be more strongly related to employment persistence than for college, since dependably showing up is fundamental to remaining employed, and CTE ostensibly provides industry-specific technical skills.

Data. Individual-level data for graduates of Baltimore City Public Schools (BCPS) would be available for analyses through a data-sharing agreement between the Baltimore Education Research Consortium (BERC) and the Maryland Longitudinal Data System (MLDS). The MLDS holds high school administrative student records from Maryland State Department of Education; college enrollment and degree completion records from Maryland Higher Education Commission and National Student Clearinghouse; and quarterly employment records for non-federal and non-military employees of Maryland employers from the Department of Licensing and Labor Regulations. College enrollment records detail postsecondary entry/departure/degree completion dates, and college institutional characteristics (2-year/4-year, in/out-of-state). Quarterly employment records include NAIC System industry codes, and unique employer IDs and wages earned, per employer each quarter.

Population. The population of interest for the proposed study includes the Baltimore City Schools' graduating cohorts of 2011 through 2013. In preliminary work, the author determined these cohorts' fall-after-high school outcomes. Consistently, about 25% moved directly into work and did not enroll. Approximately 50% enrolled in college, and among these, half also worked while enrolled. Finally, 25% neither enrolled nor worked within six months of

graduation (Durham & Connolly, 2016; 2018). This distribution offers useful variation to examine relationships between high school and postsecondary outcomes. These cohorts were chosen because 16 consecutive quarters (i.e., 4 years) of enrollment and work activity after high school can now be observed, and because these graduates left high school when labor market recovery from the 2009 economic recession is evident (Bureau of Labor Statistics, 2018).

Methods. Analyses will employ multinomial hierarchical general linearized modeling (HGLM), with students nested in graduating high schools. The three cohorts will be pooled, with fixed effects for each year to account for unobserved heterogeneity. The outcome is persistent activity for 16 calendar quarters –four years– categorized by: 1) persistent enrollment in college (or bachelor’s completion), 2) persistent paid employment in the Maryland workforce, 3) persistent enrollment and/or employment, and the reference outcome category will be 4) *inconsistent* enrollment or employment, i.e., at least one quarter with no record of enrollment or employment.

Persistence in college or work for 16 consecutive quarters is but one possible definition of success; however, it is preferable to others (e.g., earning a living wage or completing college courses) because of its parsimony. Persistence captures an essential ingredient of success in early adulthood: engagement in productive activity. Persistence can be determined regardless of postsecondary destination, its meaning generalizes to other geographic locations in a way that wages do not, and it accounts for delayed enrollment in college. The study is an essential first step toward later studies to examine relationships between high school experiences and gainful wages or college-specific outcomes.

Based on prior research, covariates to be tested as indicators of academic readiness include: indicators final high school GPA (3.0 or higher); indicators of combined verbal/math SAT scores (1000 or higher); end-of-course state assessment scores for Algebra, Biology, and

English; completing two-or-more credits in foreign language; completing a math course beyond Algebra II with a B or higher; completing four science courses with grades of B or higher; completing an advanced technology course, and completing specific career and technology education (CTE) pathways. Since the study relies on administrative data, a measure of non-academic readiness is student attendance (percent of days attended in 9th-12th grade). Attendance is a standardized operationalization of student dependability and persistence (Balfanz, Herzog & Mac Iver, 2007), and prior research on this population shows it offers meaningful variation (Mac Iver & Messell, 2012). Other variables demonstrated in prior research to be particularly important to Baltimore graduates' college access will also be modeled, specifically high school type (e.g., CTE academies, alternative placement), socioeconomic and academic school context, student demographics, and service characteristics (e.g., gender, free/reduced-price meal eligibility (FARMS), special education, etc.).

The analyses will proceed in two stages. The first will identify graduates' movement through college and/or employment each quarter over four years to categorize outcomes. (Additional specifications of persistence may also be considered depending on preliminary findings, e.g., persistent enrollment or work in all but one quarter.) The second stage will estimate multinomial HGLMs of outcome categories on covariates a step-wise fashion with key student- and school-level covariates modeled at level 1 and level 2, respectively. Interactions will also be estimated to test whether, e.g., academic proficiency moderates relationships between FARMS and outcomes.

Resources available to the RA

The PI and analyst, Dr. Rachel E. Durham, has over 10 years' experience with quantitative methods and administrative education data. She gained expertise with MLDS data in a pilot study of postsecondary outcomes of Baltimore City graduates through a partnership with Baltimore's Promise (Durham & Connolly, 2016; 2018). Through this initiative, Dr. Durham already serves as an external researcher with the MLDSC. She also holds expertise in college access, and leads several studies via BERC's research-practice partnership with BCPS (Durham, Ruiz & Connolly, 2017; Durham, Bell-Ellwanger, et al., 2015). Given the PI and BCPS's working relationship, the findings can be immediately applied to the district's work to better align students' preparation with destinations after high school. Funding for this research is being sought via a Small Research Grant proposal to the Spencer Foundation, submitted on May 1, 2018. Funding was requested to support 25% of the annual salary and benefits of Dr. Durham for the period October 1, 2018 through September 30, 2019 (see timeline below).

Description of a Center Product

The PI will prepare a presentation to share in a MLDS research colloquium, as well as a white paper or research report that can be posted on the MLDS website and/or shared with stakeholders.

Timeline

Funding from the Spencer Foundation Small Research Grants program would support Dr.

Durham to conduct this research from October 1, 2018 through September 30, 2019.

- October-December 2018
 - During fall 2018, the PI will assemble student and school data (school administrative records, postsecondary enrollment and employment records) to create analytical files.
- January-April 2019
 - During spring 2019, the PI will conduct descriptive and multivariate analyses, determining potential alternative model specifications as needed and according to student outcome patterns and model-data fit.
- May-June 2019
 - In late spring 2019, the PI will finalize the analyses and prepare tables, figures and summaries of findings for review by MLDS (per MLDS external research review requirements).
- July-August 2019
 - During summer 2019, the PI will use results to prepare manuscripts for submission to peer-reviewed journals or academic conferences (AERA, PAA or APPAM), as well as present findings at an MLDSC research colloquium.
- September 2019
 - In late summer 2019, the PI will revise and finalize a research report as well as manuscripts and presentation materials, according to reviewer comments or other feedback from the MLDSC research community or other stakeholders.

References

- ACT, Inc. (2011). WorkKeys assessment suite. Retrieved from <https://www.act.org/content/act/en/products-and-services/workkeys-for-workforce-developers.html>.
- Achieve. (2016). How states are making career readiness count: A 2016 update. Achieve & Advance CTE. Retrieved from <https://www.achieve.org/files/CareerReadiness2016.pdf>.
- Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties*. New York, NY: Oxford University Press.
- Association for Career & Technical Education [ACTE]. (2010). What is 'career-ready'? Alexandria, VA: Author.
- Balfanz, R., Herzog, L., & Mac Iver, D. J. (2007). Preventing student disengagement and keeping students on the graduation path in urban middle-grades schools: Early identification and effective interventions. *Educational Psychologist*, 42(4), 223-235.
- Barnes, W. (2010). College-readiness: The current state of affairs. *Academic Leadership: The Online Journal*, 8(4), 15.
- Barnes, W. B., & Slate, J. R. (2013). College-readiness is not one-size-fits-all. *Current Issues in Education*, 16(1).
- Blustein, D. L., Juntunen, C. L., & Worthington, R. L. (2000). The school-to-work transition: Adjustment challenges of the forgotten half. *Handbook of counseling psychology*, 3, 435-470.
- Bound, J., Lovenheim, M. F., & Turner, S. (2010). Why have college completion rates declined? An analysis of changing student preparation and collegiate resources. *American Economic Journal: Applied Economics*, 2(3), 129-57.
- Bureau of Labor Statistics. (2018). Employment and unemployment rates, Maryland, 2008-2018. Retrieved from <https://data.bls.gov/timeseries/LASST2400000000000003>.
- Carnevale, A. P., Rose, S. J., & Cheah, B. (2013). The college payoff: Education, occupations, lifetime earnings. Georgetown University, Center on Education and the Workforce.
- Carnevale, A. P., Strohl, J., & Smith, N. (2009). Help wanted: Postsecondary education and training required. *New Directions for Community Colleges*, 2009(146), 21-31.
- Casner-Lotto, J., & Barrington, L. (2006). Are they really ready to work? Employers' perspectives on the basic knowledge and applied skills of new entrants to the 21st century U.S. workforce. Washington, DC: Partnership for 21st Century Skills.
- Conley, D. T. (2010). College and career ready: Helping all students succeed beyond high school. John Wiley & Sons.
- Conley, D. T. (2008). *College knowledge: What it really takes for students to succeed and what we can do to get them ready*. John Wiley & Sons.
- Conley, D. T. (2007). Toward a more comprehensive conception of college readiness. Prepared for the Bill & Melinda Gates Foundation. Retrieved from <https://docs.gatesfoundation.org/documents/collegereadinesspaper.pdf>.
- Durham, R. E. & Connolly, F. (2018). Launching into adulthood: 2009 Graduates of Baltimore City Schools. Baltimore, MD: Baltimore Education Research Consortium. <https://baltimore-berc.org/launching-into-adulthood/>

- Durham, R. E., Ruiz, R., Connolly, F. (2017). Baltimore City Schools college fact book. Baltimore, MD: Baltimore Education Research Consortium.
- Durham, R. E., Connolly, F. (2016). Postsecondary college and workforce outcomes among Baltimore city graduates. Presented at the Maryland Longitudinal Data System Research Colloquium Series. University of Maryland, Baltimore.
- Durham, R. E., Bell-Ellwanger, J., Connolly, F., Robinson, K. H., Olson, L. S., & Rone, T. (2015). University–district partnership research to understand college readiness among Baltimore City students. *Journal of Education for Students Placed at Risk*, 20(1-2), 120-140.
- Ehrenberg, R. G., & Sherman, D. R. (1987). Employment while in college, academic achievement, and postcollege outcomes: A summary of results. *Journal of Human Resources*, 22(1), 1-23.
- Engberg, M. E., & Wolniak, G. C. (2010). Examining the effects of high school contexts on postsecondary enrollment. *Research in Higher Education*, 51(2), 132-153.
- Evans, R. N. (1968). School for schooling's sake: The current role of the secondary school in occupational preparation. Presented at The Princeton Manpower Symposium, Princeton, NJ.
- Gleason, P. M. (1993). College student employment, academic progress, and postcollege labor market success. *Journal of Student Financial Aid*, 23(2), 5-14.
- Goldrick-Rab, S. (2010). Challenges and opportunities for improving community college student success. *Review of Educational Research*, 80(3), 437-469.
- Gray, K. C., & Herr, E. L. (2006). *Other ways to win: Creating alternatives for high school graduates*. (3rd edition). Thousand Oaks, CA: Corwin Press.
- Greene, J. P., & Forster, G. (2003). Public high school graduation and college readiness rates in the United States. Education Working Paper No. 3, Center for Civic Innovation.
- Ingels, S. J., & Dalton, B. (2013). High School Longitudinal Study of 2009 (HSLs: 09) First Follow-Up: A First Look at Fall 2009 Ninth-Graders in 2012. NCES 2014-360. National Center for Education Statistics.
- Kerckhoff A. C. (2003) From student to worker. In Mortimer J.T., Shanahan M.J. (Eds.) *Handbook of the Life Course*. Handbooks of Sociology and Social Research, Boston, MA: Springer.
- Kerckhoff, A. C. (2000). Transition from school to work in comparative perspective. Pp. 453-474 in *Handbook of the Sociology of Education*. Springer, Boston, MA.
- Krahn, H. J., Howard, A. L., & Galambos, N. L. (2015). Exploring or floundering? The meaning of employment and educational fluctuations in emerging adulthood. *Youth & Society*, 47(2), 245-266.
- Mac Iver, M. A., & Messell, M. (2012). Predicting high school outcomes in the Baltimore City Public Schools. The Senior Urban Education Research Fellowship Series, Volume VII. Council of the Great City Schools. Retrieved from <https://files.eric.ed.gov/fulltext/ED536739.pdf>.
- Mishkind, A. (2014). Overview: State definitions of college and career readiness. Report prepared for the College & Career Readiness & Success Center at American Institutes for Research, Washington, DC.

- Page, L. C., & Scott-Clayton, J. (2016). Improving college access in the United States: Barriers and policy responses. *Economics of Education Review*, 51, 4-22.
- Perna, L. W. (2010). *Understanding the working college student: New research and its implications for policy and practice*. Stylus Publishing, LLC. PO Box 605, Herndon, VA 20172-0605.
- Porter, A. C., & Polikoff, M. S. (2012). Measuring academic readiness for college. *Educational Policy*, 26(3), 394-417.
- Radford, A. W., Fritch, L. B., Leu, K., & Duprey, M. (2018). High School Longitudinal Study of 2009 (HSLS: 09) Second Follow-Up: A First Look at Fall 2009 Ninth-Graders in 2016. NCES 2018-139. National Center for Education Statistics, IES, U.S. Department of Education.
- Roderick, M., Nagaoka, J., & Coca, V. (2009). College readiness for all: The challenge for urban high schools. *The Future of Children*, 19(1), 185-210.
- Rosenbaum, J. E., Kariya, T., Settersten, R., & Maier, T. (1990). Market and network theories of the transition from high school to work: Their application to industrialized societies. *Annual Review of Sociology*, 16(1), 263-299.
- Schultz, D., & Stern, S. (2013). College and career ready? Perceptions of high school students related to WorkKeys assessments. *Career and Technical Education Research*, 38(2), 157-169.
- Symonds, W. C., Schwartz, R., & Ferguson, R. F. (2011). Pathways to prosperity: Meeting the challenge of preparing young Americans for the 21st century. Retrieved from https://dash.harvard.edu/bitstream/handle/1/4740480/Pathways_to_Prosperty_Feb2011-1.pdf.
- Worthington, R. L., & Juntunen, C. L. (1997). The vocational development of non-college-bound youth: Counseling psychology and the school-to-work transition movement. *The Counseling Psychologist*, 25, 323-363.

Data Source	Item
MSDE	High School Program Completion
MSDE	High School Diploma Type
MSDE	Local Education Agency Identifier
MSDE	Free/Reduced Price Meals, 9-12th grade
MSDE	Homelessness Status
MSDE	Limited English Proficiency Status, 9-12th grade
MSDE	Title I
MSDE	Gender
MSDE	School Type
MSDE	Immigration Status
MSDE	Special Education Service Receipt
MSDE	Cohort Graduation Year
MSDE	Diploma or Credential Award Date
MSDE	Title III Immigrant Status
MSDE	Entry codes, 9-12th
MSDE	Exit codes, 9-12th
MSDE	High School Code (MSDE)
MSDE	HS Graduation Date
MSDE	Birthdate (Only Month and Year)
MSDE	Completion codes (USM, CTE, etc)
MSDE	SAT V+M > 1000
MSDE	final GPA > 3.0
MSDE	Completed math course higher than Alg II, B or higher
MSDE	Completed two courses in foreign language
MSDE	Completed 4 science courses, B or higher
MSDE	Completed advanced tech course
MSDE	CTE CIP codes
MSDE	Annual Days Present, 9th grade
MSDE	Annual Days Present, 10th grade
MSDE	Annual Days Present, 11th grade
MSDE	Annual Days Present, 12th grade
MSDE	Annual Days absent, 9th grade
MSDE	Annual Days absent, 10th grade
MSDE	Annual Days absent, 11th grade
MSDE	Annual Days absent, 12th grade
MSDE	Entry codes, 9-12th
MSDE	Exit codes, 9-12th
MSDE	HSA scores, English
MSDE	HSA scores, Algebra I
MSDE	HSA scores, science/biology
MSDE	HSA scores, government
MSDE	Hispanic Ethnicity
MSDE	Mutli-Race

MSDE	White/Caucasian
MSDE	Black/African-American
MSDE	Asian
MSDE	Amer Ind or Nat Alaskan
MSDE	Nat Hawaiian or Pac Is
MHEC	OPEID
MHEC	Birthdate (Only Month and Year)
MHEC	Hispanic Ethnicity
MHEC	Mutli-Race
MHEC	White/Caucasian
MHEC	Black/African-American
MHEC	Asian
MHEC	Amer Ind or Nat Alaskan
MHEC	Nat Hawaiian or Pac Is
MHEC	Military Status
MHEC	Expected Family Contribution
MHEC	Adjusted Gross Income
MHEC	Parent 1 Highest Grade Level
MHEC	Parent 2 Highest Grade Level
MHEC	Term Attendance
MHEC	Degree Sought (at enrollment)
MHEC	Program Taxonomy (at enrollment)
MHEC	Math Remedial Assessment
MHEC	English Remedial Assessment
MHEC	Reading Remedial Assessment
MHEC	SAT Math Score
MHEC	SAT Verbal Score
MHEC	SAT Writing Score
MHEC	SAT Math Score 2016
MHEC	SAT EBRW Score 2016
MHEC	ACT Math Score
MHEC	ACT English Score
MHEC	ACT Reading Score
MHEC	ACT Science Reading Score
MHEC	ACT Composite Score
MHEC	First Math Grade
MHEC	First English Grade
MHEC	Degree Sought (at graduation)
MHEC	Program Taxonomy (at graduation)
MHEC	Degree Date (at graduation)
MHEC	Entry Term (corresponding to graduation)
MHEC	Entry Year (corresponding to graduation)
MHEC/NSC	Enrollment_begin_date
MHEC/NSC	Enrollment_end_date

MHEC/NSC	College Name
MHEC/NSC	College_branch_code
MHEC/NSC	2-year/4-year
MHEC/NSC	Degree_date
MHEC/NSC	Public/Private
MHEC/NSC	State
MHEC/NSC	Degree_title
DLLR	MLDS unique employer ID
DLLR	NAIC Code
DLLR	Quarterly Wages
DLLR	Calendar Year
DLLR	Calendar Quarter