

Testimony of Matthew G. Kelly
Basic Education Funding Commission
September 12, 2023

Chair Sturla, Chair Phillips-Hill, and members of the Basic Education Funding Commission,

My name is Matthew Kelly. I am a school funding scholar from Penn State,¹ and serve as an expert witness for Petitioners in the school funding litigation, where I spent three days testifying about the inadequacy and inequity of the Commonwealth’s school funding system.

My research concentrates on state education funding policies and their consequences for the distribution of educational resources and opportunities. I earned my PhD in educational policy and the history of education from Stanford University in 2018. I have published widely on school funding policies, including state education funding policies in the Commonwealth. My research has received awards from multiple national and international scholarly organizations, including the National Education Finance Academy. My research on school funding and the uneven distribution of educational resources directly informs my teaching at Penn State where I teach graduate-level courses in school finance and data-based decision making for school leaders. I also attach my curriculum vitae for your consideration.

Overview

I understand that in compliance with the decision of the Commonwealth Court that the Basic Education Funding Commission has set out to develop a school funding system that provides both adequate, equitable school funding, and delivers all children an opportunity to meet state goals and standards. Accordingly, as I did during my testimony at trial, I will use the state’s own data, measures, and definitions from Commonwealth laws and reports to describe three things that those data, measures, and definitions show about the Commonwealth’s current funding system.

First, I will describe the funding difficulties facing the poorest school districts. These districts are not able to provide their students with an adequate opportunity to meet state standards. Second, I will describe how much the districts who are providing an adequate opportunity to their students—defined here as meeting state interim targets for performance—are currently spending. Third, I will describe what this means for all districts and provide an approximation of what each district needs to meet these state interim standards, again based on the state’s definitions and numbers.

Funding Difficulties Facing Low-Wealth Districts

Poorest Districts Need the Most

Differences in each school district’s characteristics and the students it educates—such as the number of students receiving special education services or the number of students learning

¹ I provide my employer for identification purposes, but the testimony here does not reflect any views other than my own.

English—have an impact on costs and the amount of revenue a school district needs to meet state goals. Districts cannot control these costs. These differences in costs and their far-reaching impact on fiscal need and on the ability of school districts to meet state standards are not in question. This is a well-settled area of educational research, education policy in other states, and school funding policy here in the Commonwealth. Together, the Basic Education Funding (BEF) and Special Education Funding (SEF) Formulas account for poverty, acute poverty, concentrated poverty, English Language Learners, charter students, and three tiers of special education students, providing what are called student weights to account for the increased costs. Utilizing these weights, Pennsylvania Department of Education (PDE) data for the most recent year available shows the lowest-wealth districts² are also the highest-need districts. For example, low-income enrollments and English Language Learner enrollments are much higher in the poorest districts of the Commonwealth. The percentage of low-income students for the average district in the poorest quintile of school districts is 65 percent. In contrast, the percentage of low-income students for the average district in the wealthiest quintile is 26 percent.³

Poorest Districts Have the Lowest Capacity to Generate Local Revenue

The poorest districts have the lowest capacity to generate revenue to cover costs without additional assistance from the state. In contrast, districts in the wealthiest quintile continue to face the lowest costs stemming from student-related need and have the greatest capacity to generate revenue on their own.

Poorest Districts Need the Most, and Have the Least to Spend

The poorest school districts in the Commonwealth have the lowest funding levels despite their higher need for additional funding and their lower capacity to generate revenue. For example, the poorest quintile spent ~\$6,230 less per BEF weighted student than the wealthiest quintile in the most recently released data on district-level current expenditures per weighted student.⁴

These funding gaps do not impact all student populations equally. Black and Latinx Pennsylvanians are disparately impacted. For example, the poorest quintile of districts is responsible for approximately 20 percent of the Commonwealth's students. Yet, in 2022-23, 43 percent of all Black and Latinx Pennsylvanians were enrolled in a district in the poorest quintile, compared to only 13 percent in the wealthiest quintile.

² Low-wealth districts are defined here as districts in the bottom wealth quintile. Quintiles were formed by ranking school districts according to their relative wealth and dividing them into five groups so that each quintile was fiscally responsible for roughly 20% of the students in the Commonwealth (based on 2021-22 adjusted ADMs reported in the "2023-24 Estimated Basic Education Funding" file on PDE's website). The MV/PI Aid Ratio from the most recently released Aid Ratios file was used in calculations described here. These patterns do not change when using alternate district wealth measures released by the Commonwealth such as Local Capacity per Weighted Student.

³ Based on the five-year average of Low-Income Enrollment percentages reported in PDE Low-Income Enrollment Files. This pattern is unchanged when we use American Community Survey poverty rates from the most recent Basic Education Funding file. English Language Learner data reported in Basic Education Funding file.

⁴ From PDE estimated Basic Education Funding file for 2023-24

Taxing Effort Does Not Explain these Funding Gaps

These funding gaps are not explained by local tax effort. For example, the average equalized millage rate of districts in the poorest quintile is higher (21.4) than that of districts in the wealthiest quintile (18.1), even while poor districts raise less funding.

While All Students Can Learn, Funding Disparities Limit the Ability of Districts to Meet the Goals the State Has Set for Them

Consistent with the findings of every credible causal study of the relationship between education spending and positive student outcomes, funding disparities have consequences for the ability of school districts to meet the goals the state has set for them. For example, the poorest districts also had the lowest proficiency rates on state PSSA and Keystone exams in 2021 and 2022. Across both 2021 and 2022, these performance gaps between the poorest and wealthiest districts have been consistent and in the range of 26 to 29 percent.

These patterns are consistent with my previous reports and testimony where I illustrated performance gaps using the state's own standards and data. In my previous reports and testimony, I illustrated similar gaps in "on-track measures" used by PDE as early indicators of success: regular attendance and progress for English Language Learners. Gaps also existed in measures of college and career readiness, graduation rates, and school dropout rates.

It is important to emphasize that students from low-income families can succeed when they are given adequate financial resources. Students from low-income families in those wealthy districts with the highest funding levels have substantially higher state standardized test scores, high school graduation rates, rates of entering postsecondary education, and rates of graduating from college degree programs within 6 years, relative to low-income students in the poorest, lowest funded districts.

In sum, the districts with the least amount of taxable wealth:

- have the lowest ability to generate funding at the local level through taxation;
- have the highest student-related costs and greatest need for additional funding according to the state;
- spend the least, despite their need;
- spend the least, despite their higher tax rate on average; and,
- are the furthest from meeting the goals the state has set for them.

New Adequacy Study

During my testimony at trial, I calculated adequate funding using Section 2502.48 of the School Code, the funding formula enacted in 2008 after the costing out study was conducted. As I testified at trial, that formula uses slightly different weights than the current Basic Education Funding Formula (also sometimes referred to as the "Fair Funding Formula"), it does not account for a number of costs (from special education to charter school participation), and it does

not take into account the more rigorous college and career ready standards that students are required to meet today.

Accordingly, for the Commission I set about answering a similar, but slightly different question: using the state's more current weights in both the Fair Funding Formula and Special Education Funding Formula, what is the typical spending needed for a school district to meet the state's goals for high school graduation rates and proficiency on state exams?

This adequacy study was designed to identify how much additional funding, if any, each school district in the Commonwealth would need to be able to give their students an effective opportunity to meet state standards. In generating these estimates, I had the following goals:

- Provide transparent, comprehensive, and reasonable estimates of how much funding each district would need to meet state standards following the empirical standards established for adequacy studies by school funding scholars, and improving upon them wherever possible.
- Utilize weights and costs already utilized by Pennsylvania's current formulas and make those estimates the most conservative possible estimate that can be generated from current state data without violating the empirical standards of the field. This meant identifying a base cost that, in combination with the supplemental weights for student/district factors that increase district costs, would allow me to identify adequacy targets for each district.
- Use the most up-to-date information and data to generate these estimates so lawmakers can be confident that additional areas of financial need excluded from earlier estimates are included now. This meant ensuring my estimates accounted for:
 - Special education costs, which were excluded in the state's previously used adequacy targets, but which can be derived from the Special Education Funding Formula;
 - Charter school stranded costs, which were excluded in the state's previously used adequacy formula under Section 2502.48, but which are acknowledged in the Fair Funding Formula;
 - The dramatic increase in school district share of PSERS payments since the last costing out study was completed;
 - A more accurate data source for students in poverty educated by a school district than the American Community Survey's data for a school district's broader geographical community; and,
 - The current goals the state has set for school districts, as indicated by its current Consolidated State Plan under the Every Student Succeeds Act ("ESSA Plan"), in order to identify model school districts.

Spending in Districts Providing Students with an Adequate Opportunity

Adequacy studies begin by identifying model districts that are currently providing students with an adequate opportunity to meet state standards and identifying how much those districts are spending.⁵ Those model districts and their spending levels can be identified using the state's own data regarding which districts are meeting state standards. Using these criteria, I identified any district that in both of the last two years met the state's interim statewide goals for high school graduation rates and in either of the last two years met the state's interim statewide goals for standardized assessments.

Next, I determined a base cost for each of these model districts, defined as the per student current spending in those districts for a student with no identified needs under either formula. In other words, I examined the effective spending within a district for a student who is not from a low-income family, does not have an English Language Learner designation, does not receive special education services, is not in a charter school, and is not in a sparse district.⁶

Then, because my goal was to achieve the most reasonable estimate of costs, I eliminated spending outliers, removing those districts that were one standard deviation above and below the mean of spending.⁷ I then identified the median cost, and applied it to each district's weights under the Basic Education and Special Education Formulas.

Put differently, I identified what the typical successful Pennsylvania school district is spending relative to its needs, and then applied that target spending across each of the Commonwealth's school districts. Those districts spending less than their targets are those identified as having adequacy shortfalls.

Results

Based on the comparison between current spending for each school district and its adequacy target identified using the state's own data, measures, standards, and goals discussed above, 412 school districts spent less than they needed to meet their adequacy target in the most recently released state funding data.

These districts educated 83 percent of the students in the Commonwealth. They are located across the state in 64 of the Commonwealth's 67 counties. In aggregate, adequacy shortfalls

⁵ A fuller description of the methodology is included in Appendix B.

⁶ As explained in more detail in the Appendix, there are two slight modifications that need to be incorporated to ensure they are empirically sound and consistent with state data, measures, and evidence. The first adjustment uses poverty data collected by the state to provide more reliable poverty counts than the Census's American Community Survey. The second modification adjusts SEF weights to ensure there is no double counting of students and uses their relative costs as defined by the Special Education Funding Commission, to ensure district needs are not artificially lowered. This adjustment avoids artificially increasing the base cost.

⁷ In the Appendix, I explain the fiscal impact of eliminating outliers, so that the Commission can understand what it means to keep every district in an adequacy calculation and perform a simple average, and alternately what it means to eliminate only the high outliers and leave in the low outliers. Under any scenario, the shortfalls remain dramatic.

across districts were \$6,258,438,239, about 20% percent of current expenditures.⁸ The median shortfall across the Commonwealth’s school districts (including those districts without a shortfall) is \$2,572 per Average Daily Member (ADM). 286 districts—57 percent of all the Commonwealth’s school districts—have a shortfall that is greater than \$2,000 per ADM.

The impact on adequacy targets for each cost factor associated with additional need statewide is described in Appendix D.

Moreover, while I have been addressing the importance of adequacy, I must observe that closing the adequacy shortfalls will also significantly address the equity issues which the court identified, where “[s]tudents who reside in school districts with low property values and incomes are deprived of the same opportunities and resources as students who reside in school districts with high property values and incomes.”⁹ A majority of model districts are in the wealthiest quintile. There are 0 model districts in the poorest quintile. Districts in the wealthiest quintile account for only 2 percent of the current adequacy shortfall. Districts in the poorest quintile account for 51 percent of the statewide adequacy shortfall, even though they are only fiscally responsible for 20 percent of students. These are also the districts with the largest shortfalls overall. In other words, addressing adequacy also addresses equity.

Note on the Conservatism of the Estimates and Costs Excluded from the Analysis

Six billion dollars is a significant amount of money. Yet these estimates are in many ways conservative:

First, these shortfalls do not consider district financial need in relation to facilities, including those districts with years’ worth of deferred maintenance.

Second, these shortfalls do not consider need related to Pre-Kindergarten. Including need related to Pre-K will increase these shortfalls. There are an estimated 96,560 Pre-K eligible children currently unserved across the Commonwealth’s school districts. Districts would need an additional \$1,062,160,000, in aggregate, to serve these students.¹⁰

Third, these shortfalls do not consider the increased costs some districts incur because of the higher cost of living in the section of the Commonwealth where they are located.

Fourth, the relative weights the Commonwealth adopted in the Special Education Formula are different than the relative student costs actually identified by the Independent Fiscal Office in the Special Education Funding Commission’s report and used in this report. Using the statutory cost differentials for weights would increase the total shortfall by \$500 million.

⁸ In the interest of transparency, I will provide district by district shortfalls, so that you can see the scope of those shortfalls, along with my data, so that you can replicate my calculations.

⁹ Court Order ¶ 2 (Feb. 7, 2023).

¹⁰ This figure assumes a cost of \$11,000 per Pre-K student, based upon projected funding identified by PDE in its FY 2023-24 Request for Applications Guidance. Estimates of the population of 3- to 4-year-olds unserved by districts are from the Pennsylvania Partnership for Children. For districts where a range is estimated for the percentage of unserved 3- and 4-year-olds, the median of the estimated range is used to identify a count of unserved 3- and 4-year-olds and estimate that district’s costs.

Fifth, the standard used to identify model districts produces a conservative base cost estimate. The state has set goals for improvement for students, called interim targets. These are lower than the state's goals for 2033, and they increase each year. Practically speaking, this means many districts who are meeting interim targets this year and have been used to identify the base cost still must improve if they are going to meet state goals in the years ahead. It is reasonable to assume that districts who are at adequacy under this calculation may indeed need more funding in the future.

Conclusion

The purpose of my study is to answer a specific question: based upon the typical model Pennsylvania school district, what is a reasonable estimate of adequate funding, excluding facilities, Pre-K costs, and any costs of increased state academic goals.¹¹ That number is significant: \$6.2 billion dollars.

I recognize the serious task of the Commission. I am happy to assist in that work however I can. Thank you for your time.

¹¹ There remain additional questions for the Commission to consider, including reasonable times for phase-ins, and the division of these costs between state and local taxpayers.

Appendix A: Application of Formula Weighting Factors to Adequacy Study

There are two modifications that need to be incorporated into the use of weighted totals from the BEF and SEF formulas to ensure they are empirically sound, consistent with state data, and appropriate for this adequacy study.

Poverty Data

In the BEF Formula, poverty weights are applied to an estimated poverty and acute poverty ADM for each school district. While ostensibly a measure of a school district's need, the actual data source is more indirect: an estimate of community-wide acute and nonacute poverty percentages from the 5-year American Community Survey (ACS), multiplied by each district's Average Daily Membership. However, these indirect ACS estimates are highly variable and do not reflect the actual student populations districts educate. In contrast, the state and districts partner to collect information about each enrolled student's low-income status, following data collection and reporting procedures structured and regulated by PDE. Those actual low-income enrollment figures are used by the state to report on everything from loan cancellation to subgroup performance on the PSSAs and Keystones.

This direct data from the state can be used in conjunction with ADM counts and ACS estimates of the acute versus nonacute poverty percentages in each district to provide a more reliable measure of acute and nonacute poverty ADMs to be used with the BEF poverty weights. This adequacy study uses this additional information on poverty from the state when applying BEF weights for poverty, acute poverty, and concentrated poverty. These calculations are described in the table below.

Appendix Table A1
Steps for Incorporating District-Specific Low-Income Data into Poverty Weighting from Fair Funding Formula

Step 1: Calculate each district's low-income ADMs. To do so, multiply the average of PDE's data for each district's five most recent years' low-income enrollment percentage by its average daily membership.

Step 2: Estimate the share of low-income students who are in acute and (nonacute) poverty for each district.

- a. For the acute share, divide each district's "ACS 5-year Poverty Percent 0-99%" by the sum of its "ACS 5-year Poverty Percent 0-99%" and "ACS 5-year Poverty Percent 100-184%."
- b. For the (nonacute) poverty share, divide each district's "ACS 5-year Poverty Percent 100-184%" by the sum of its "ACS 5-year Poverty Percent 0-99%" and "ACS 5-year Poverty Percent 100-184%."

Step 3: Calculate the acute poverty ADMs of each district and the (nonacute) poverty ADMs of each district.

- a. For the acute poverty ADMs, multiply the result from 2a by each district's low-income ADMs from Step 1.
- b. For the (nonacute) poverty ADMs, multiply the result from 2b by each district's low-income ADMs from Step 1.

Step 4: Identify concentrated poverty districts.

- a. Divide each district's result from Step 3a by its average daily membership.

Step 5: Apply the existing weights.

- a. Multiply the results from Step 3a by 0.6.
- b. Multiply the results from Step 3b by 0.3.
- c. For qualifying districts identified in Step 4 (30% or more), multiply the results from Step 3a by 0.3.

Shortfalls Estimated Using ACS Poverty Data Only

If adequacy targets and shortfalls were calculated with ACS community-wide poverty estimates and did not include low-income student enrollment data collected by the state, aggregate shortfalls would decrease 15 percent and the total number of districts with a shortfall would decline from 412 to 388 districts. 332 districts would experience a decline in their shortfalls in this scenario (at an average decline of \$834), while 83 would experience an increase (at an average increase of \$407). These differences are not felt evenly. Appendix Table A2 illustrates the impact of the change for a sample of those districts who fare worse using the indirect measures from ACS.

Appendix Table A2 Illustration of Using ACS Poverty Data Only			
School District	County	Adequacy Shortfall Per ADM	Adequacy Shortfall Per ADM using ACS
Shade-Central City SD	Somerset	\$ 5,416.02	\$0
Lancaster SD	Lancaster	\$ 4,664.26	\$ 1,144.76
Bristol Township SD	Bucks	\$ 4,020.68	\$ 775.62
Norristown Area SD	Montgomery	\$ 6,916.69	\$ 3,740.33
Interboro SD	Delaware	\$ 2,512.30	\$0
Conemaugh Valley SD	Cambria	\$ 2,869.28	\$ 440.86
Commodore Perry SD	Mercer	\$ 2,373.70	\$0
Salisbury-Elk Lick SD	Somerset	\$ 2,168.74	\$0
Wilkinsburg Borough SD	Allegheny	\$ 2,100.79	\$0

Special Education Weights

The second modification relates to how the SEF formula weights used to adjust for special education-related costs can be used in conjunction with BEF weighted totals. As noted in the most recent report from the Special Education Funding Commission, SEF weights are based on a study of cost differentials. That study identified the additional costs associated with educating students in cost categories 1, 2, and 3, above and beyond general education costs.

The underlying data note the actual increase in costs above and beyond general education costs for students in each category. Those cost differentials are then used to calculate the category 1 weight. Since the cost differentials identified by the IFO for the SEF Commission are based on costs above and beyond general education costs, 1 ADM is included in the SEF weights to account for general education costs. While acceptable for a distribution formula, combining these weights with total weighted ADM counts from the BEF Formula would result in double counting

without adjustment. This is because special education students are already included in the three-year average ADM figure used in the BEF formula.

Second, the School Code as enacted did not credit school districts for the full difference the Special Education Funding Commission identified in the cost of educating high-needs special education students. The Commission’s report, for example, identified that a category 3 student costs approximately 10.37 times that of a general education student, and 6.34 times that of a category 1 special education student. In the School Code, however, that relative weight was changed, and a category 3 student’s assumed costs were reduced to 6.34 times that of a general education student, rather than that of a category 1 student.

In simplest terms, this study seeks to credit school districts for the actual costs of the special education students they are educating. Accordingly, to use the weights from the SEF Commission, in combination with BEF weights, the category 2 and 3 weights should first be expressed as the additional cost of educating students in categories 2 and 3, relative to general education—rather than category 1—students. After subtracting out the base student to avoid double counting, the table below summarizes these adjustments.

Appendix Table A3 Special Education Weighting Factors		
Category	Average Cost used in Calculation of Current SEF Weighting Factors¹²	Recalculated Weights that Can be (a) Combined with BEF Weighted Totals without Double Counting and are (b) Relative to Average General Education Costs
General Education Average	\$ 7,140.00	
Category 1	\$ 11,677.00	0.64
Category 2	\$ 35,920.00	4.03
Category 3	\$ 74,031.00	9.37

While it may seem counterintuitive, because of its impact on the base cost, the practical effect of failing to account for this student need would be to increase adequacy shortfalls across the Commonwealth by approximately \$500 million, to \$6.78 billion.

¹² See *Reconstituted Special Education Funding Commission Report*, December 15, 2021, page 14.

Appendix B: Steps to Replicate Adequacy Study

Adequacy studies begin by identifying model districts that are currently providing students with an adequate opportunity to meet state standards and identifying how much those districts are spending. The premise of this specific study is to accept the Commonwealth's figures for data, standards, and goals, and then identify model districts based upon those same data, standards, and goals.

1. Identify model districts. I started by examining the goals for academic achievement and high school graduation the state established for school districts and submitted to the federal government in its current ESSA Plan.¹³ Using these criteria, it is possible to generate a list of model districts, defined as the districts that met the state's interim targets for high school graduation in both 2021 and 2022, and interim targets for academic achievement in either 2021 or 2022.¹⁴ So long as a district met that criteria, they were considered model districts.

2. Examine spending in model districts. Adequacy studies require researchers to identify a base cost in model districts for the average student who does not require additional funding.¹⁵ Accordingly, I then examined school district spending—current expenditures—within the model districts identified in Step 1, and then normalized that spending according to the state's weighted adjustments from the BEF and SEF Formulas.

There are two slight modifications that need to be incorporated into these weighted adjustments to ensure they are empirically sound and consistent with state data, measures, and evidence. The first adjustment uses additional poverty data collected by the state to provide more reliable poverty counts than the American Community Survey. The BEF poverty weights remain the same, but poverty ADM counts are made consistent with evidence from the state's own data sources. The second modification adapts SEF weights so they can be used with weighted totals from the BEF Formula. Both modifications are discussed in detail in Appendix A.

3. Finalize model district pool and identify base cost. Within the pool of model districts, a subset of districts are unique because they spend substantially more or less (+/- 1 SD) than other model districts. Outliers are expected in most statistical distributions. Consistent with other adequacy studies and the methodological foundation of those studies, model districts were therefore removed if their spending figure was more than 1 SD +/- the mean. From the final pool of model districts, a median base cost was then identified.

¹³ According to the state's ESSA Plan, academic achievement can be assessed by the percentage of students who are proficient or advanced in English Language Arts/Literature, Mathematics/Algebra, and Science standardized tests. According to the ESSA Plan, high school graduation can be assessed by the 4-year cohort graduation rate of a district.

¹⁴ A few of these districts exceeded the interim targets by a large enough amount that they were already meeting the state's long-term 2033 goals as well.

¹⁵ In the Commonwealth, using the state's formulas, this means identifying the cost for a student who is not from a low-income family, does not have an English Language Learner designation, does not receive special education services, is not a charter student, and is not more expensive to educate because of diseconomies of scale associated with the sparsity and size of the district.

4. Identify adequacy target for each school district. The base cost identified in Step 3 can then be used to determine an adequacy target for each school district based on the state's data, measures, and weights. The adequacy target is calculated by multiplying the base amount times the weighted student count as set forth in the current BEF and SEF Formulas with the slight modifications discussed in Appendix A.

5. Calculate adequacy shortfalls. Each district's adequacy target from Step 4 can then be compared with their Current Expenditures to determine how much additional money, if any, they would need so that according to the Commonwealth's own data, their students had the same opportunity to meet state standards as students in the final pool of model districts currently meeting those standards.

Appendix C: Alternate Estimates

As an alternate specification, shortfalls were also calculated using two alternate base cost figures. The first alternate estimate is the most basic: it uses the average spending of all model districts without removing outliers. The second alternate estimate both uses a median figure and eliminates high-spending districts from the model district pool (model districts spending more than 1 standard deviation above the mean), but leaves in the lower spending districts. Results from these alternate specifications are reported alongside the final estimate in Appendix Table C.

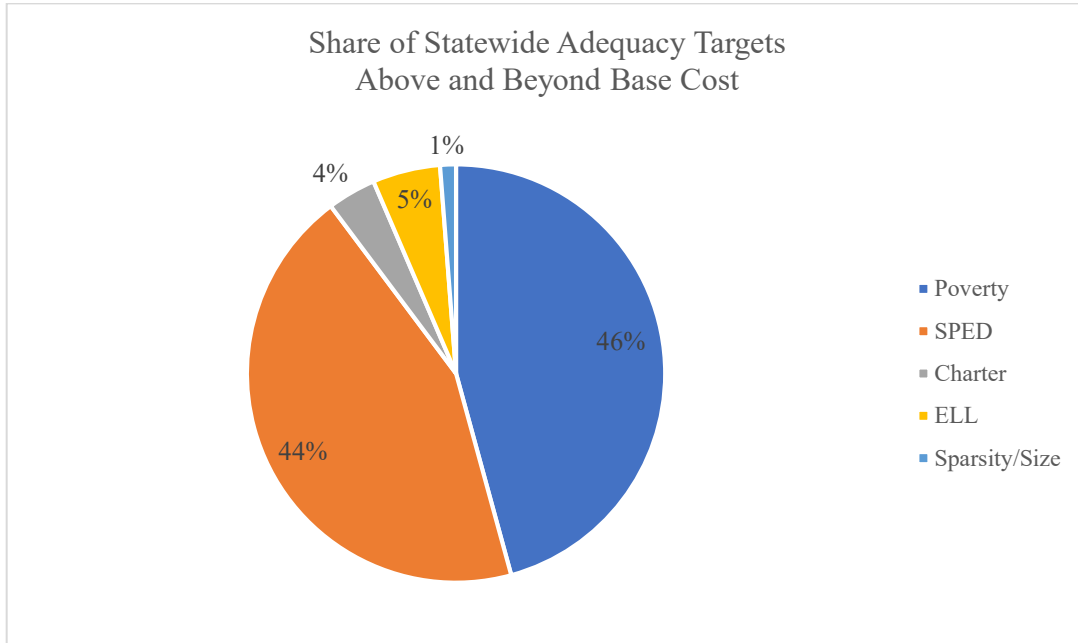
Appendix Table C Alternative Shortfall Estimates						
	Shortfall as % of Current Expenditures	Aggregate Shortfall	Number of Districts with Shortfalls	Median Shortfall Per ADM	Shortfall as % Adequacy Target	Current Expenditures as % Adequacy Target
Alternative Specification: All Model Districts ¹⁶	24%	\$ 7,284,220,290	431	\$3,251	19%	81%
Final Shortfall Calculation: High- and Low-Spending Districts Removed ¹⁷	20%	\$ 6,258,438,239	412	\$2,572	17%	83%
Alternate Specification: High Spending Districts Removed ¹⁸	18%	\$ 5,504,900,200	389	\$2,059	15%	85%

¹⁶ As an illustration of how the full distribution, including the highest and lowest values, would impact the base cost and subsequent shortfalls, these numbers use a base cost derived from the mean spending of all model districts.

¹⁷ As noted above, shortfall calculations identify the median cost for model districts after removing districts that are one standard deviation above and below the model district mean. If the mean was used instead of the median with the same model district pool (districts > 1 SD +/- mean removed), the base cost and subsequent shortfalls would increase.

¹⁸ For illustrative purposes, this alternative calculation shows the outcome of focusing only on lower-spending districts. It uses median spending of model districts after high spending model districts (> 1 SD above the model district mean) are removed from the pool.

Appendix D: Districts and Student Need Characteristics as Share of Adequacy Targets (Above and Beyond Base Costs)¹⁹



¹⁹ Based on the share of the statewide adequacy target attributable to supplements for each student or district characteristic. To represent figures as a share of the statewide total adequacy target above and beyond general education costs, the base cost share of the adequacy target was removed before calculating percentages. Values are rounded to the nearest percent.

Matthew Gardner Kelly
Department of Education Policy Studies
204F Rackley Building
University Park, PA 16802
mgk76@psu.edu

ACADEMIC APPOINTMENTS

The Pennsylvania State University, University Park, PA
Assistant Professor of Education, 2018 - present

EDUCATION

Stanford University, Stanford, CA
Ph.D. in Educational Policy & History of Education, 2018

Stanford University, Stanford, CA
M.A. in History, 2015

Pace University, New York, NY
M.S. in Middle Childhood Education & Teaching Students with Disabilities, 2009

Bard College, Annandale-on-Hudson, NY
B.A. in History, 2007

HONORS & AWARDS

Rabel J. Burdge and Donald R. Field Outstanding Article Award, 2022

NAEd/Spencer Foundation Postdoctoral Fellow, 2021

Distinguished Research & Practice Fellow, National Education Finance Academy, 2021

Pennsylvania Education Policy Fellow, Education Policy and Leadership Center, 2018-2019

History of Education Society Prize (Best Article Published in the Previous Two Years), 2018

Yu-Ly Interdisciplinary Graduate Fellow, Stanford University, 2015 – 2018

Technology for Equity in Learning Opportunities Doctoral Student Research Grant, 2017

Best Paper by a Graduate Student, American Education Research Association, Division F, 2016

Stanford Graduate School of Education Dissertation Support Grant, 2016

Thomas G. and Terry B. Eastman Fellow, Stanford University, 2012

SCHOLARSHIP

Books

Kelly, M.G. (forthcoming, January 2024) *Dividing the Public: School Finance and the Creation of Structural Inequity*. Cornell University Press (Histories of American Education Series).

Refereed Journal Articles (* indicates co-authored with graduate students)

Kelly, M.G., & Farrie, D. (2023). Misrepresented funding gaps in data for some states. *Educational Researcher*, 52 (4), 244-247.

Kelly, M.G. & *Maselli, A (2023). School finance policies, racial disparities, and the educational debt: Egregious evidence from Pennsylvania. *Journal of Education Human Resources*, 41 (3), 514-533.

Kelly, M.G. (2022). How to reform without reforming: School district racial composition and Pennsylvania's "fair" funding formula. *Education and Urban Society*, 54 (9), 1143-1165.

Kelly, M.G., & *Ayata, F. (2022) State of the states 2022: Pennsylvania, *Journal of Education Finance*, 47(5), 327-329.

Jimenez-Castellanos, O., Kelly, M.G. & *Carranza, J.L. (2021). Pre- and post-Serrano: Systemic racism, school funding disparities, and Mexican-American communities. *Education Law & Policy Review*, 6, 49-72.

Kelly, M.G. & Schafft, K. (2021). A "resource curse" for education?: Deepening education disparities in Pennsylvania's shale gas boomtowns. *Society & Natural Resources*, 34 (1), 23-39.

Article Prize:

- Awarded Rabel J. Burdge and Donald R. Field Outstanding Article Award for best article published in in *Society & Natural Resources* in 2021

Kelly, M.G., *Ayata, F., & *Anderson, J. (2021). State of the states 2021: Pennsylvania. *Journal of Education Finance*, 46 (3), 345-347.

*Ayata, F., Kelly, M.G., & *Anderson, J. (2021). State of the states 2021: Vermont. *Journal of Education Finance*, 46 (3), 366-368.

Kelly, M.G. (2020). The curious case of the missing tail: Trends among the top 1% of school districts in the United States, 2000-2015. *Educational Researcher*. 49 (5), 312-320.

Kelly, M.G. (2020). 'Theoretically all children are equal. Practically this can never be so': The history of the district property tax in California and the choice of inequality. *Teachers College Record*, 122 (2), 1-32.

Kelly, M.G., *Ayata, F., & *Anderson, J. (2020). State of the states 2020: Pennsylvania. *Journal of Education Finance*, 45 (3), 364-366.

*Ayata, F., Kelly, M.G., & *Anderson, J. (2020). State of the states 2020: Vermont. *Journal of Education Finance*, 45 (3), 384-385.

Kelly, M.G. (2019). A map is more than just a graph: Geospatial educational research and the importance of historical context. *AERA Open*, 5(1), 1-14.

Kelly, M.G. (2018). The deep and tangled roots of real estate markets, the state, and public education. *Journal of Educational Administration and History*, 50(3), 191-203.

Kelly, M.G. (2016). Schoolmaster's empire: Race, conquest, and the centralization of common schooling in California. *History of Education Quarterly*, 56(3), 445-472.

Article Prize:

- Awarded the History of Education Society Prize for best refereed article published in previous two years

Kelly, M.G. (2014). The mythology of schooling: The historiography of American and European education in comparative perspective. *Paedagogica Historica: International Journal of the History of Education*, 50(6), 756-773.

Reprinted:

- Jeroen J.H. Dekker and Frank Simon, eds. Shaping the History of Education? The First 50 Years of *Paedagogica Historica* (London: Routledge, 2016).

Refereed Book Chapters

Kelly, M.G. (in press). The Myth that Money Does not Matter for Student Outcomes. In David Gamson & Sherman Dorn (Eds.), *What Everyone Gets Wrong About the History of American Education: Myths, Lies, and Falsehoods* (New York: Teachers College Press).

Erickson, A., Leana, C., Esther, C., Hines, M., **Kelly, M.G.** (accepted). History and the Education Policy Imagination. In Cohen-Vogel, L., Scott, J., & Youngs, P. (Eds.), *AERA Handbook of Education Policy Research*

Writing for Popular Audiences

Kelly, M.G. & Schafft, K. (2020, February). Fracking has led to a 'bust' for Pennsylvania school district finances. *The Conversation*.

Kelly, M.G. (March, 2019). Charter school cap efforts gain momentum. *The Conversation*.

Selected Refereed Conference Papers

- Kelly, M. G. (April, 2022). School finance policies and the exploding educational debt: Egregious evidence from Pennsylvania. Paper presented at the Annual National Education Finance Academy Conference (online).
- Kelly, M. G. (November, 2021). Settler colonialism, common school expansion, and early education funding policies in California, 1850-1865. Paper presented at the History of Education Society Annual Meeting, San Diego, CA.
- Kelly, M. G. (November, 2020). Inducing communities to 'help themselves' or preventing 'injustice and inequality': Competing approaches to taxation and funding for common schools, 1820-1860. Paper presented at the History of Education Society Annual Meeting, Virtual.
- Kelly, M. G. (April, 2020). Public school finance, state-sponsored inequalities, and the race for Progressive Era education reform in northern California. Paper presented at the Organization of American Historians Annual Meeting, Washington DC. (conference canceled).
- Kelly, M.G. (2020, April). Shifting state investments and school funding disparities during Pennsylvania's shale gas boom. Paper presented at the American Education Research Association 2020 Annual Meeting, San Francisco, California. (conference canceled).
- Kelly, M.G. (2020, April). Geospatial educational research and the importance of historical context. Paper presented at the American Education Research Association 2020 Annual Meeting, San Francisco, California. (conference canceled).
- Candelaria, C., Shores, K, and Crouch, M., **Kelly, M.** (2020, March). The politics of school finance reform. Paper presented at the American Educational Finance and Policy 2020 Annual Meeting, San Francisco, California.
- Kelly, M. G. (November, 2019). "Everything alive is supposed to grow": Public finance policies, Progressive Era reform, and state-sponsored inequities, History of Education Society Annual Meeting, History of Education Society, Columbus, OH.
- Kelly, M. G., & Ayata, F. (November, 2019). Funding formulas and racial inequities: Evidence from Pennsylvania., University Council on Educational Administration Annual Convention, University Council on Educational Administration, New Orleans, LA.
- Kelly, M.G. & Schafft, K. (2019, June) Shifting State Investments and Rural School Funding Disparities in Pennsylvania's Shale Gas Boomtowns. Paper presented at the 2019 Annual Meetings of the Rural Sociology Society, Richmond, VA.
- Kelly, M.G. & Ayata, F. (2019, April) The implementation of funding formula changes and racially disparate allocations of state aid: Evidence from Pennsylvania. Paper presented at the 2019 Annual National Education Finance Conference, Lake Washington– Renton, WA.

- Kelly, M.G. (2019, April) Long-term trends in school district gerrymandering and a new approach to assessing boundary irregularity. Paper presented at the American Education Research Association 2019 Annual Meeting, Toronto, Canada.
- Kelly, M.G. (2018, November) School finance reform and competing definitions of ‘public’ in California during the 1870s and 1880s. Paper presented at the History of Education Society 2018 Annual Meeting, Albuquerque, NM
- Kelly, M.G. (2017, November) Expertise, taxation, and the choice of inequality. Paper presented at the History of Education Society 2017 Annual Meeting, Little Rock, AR.
- Kelly, M.G. (2017, April) Poor communities, poor schools: Progressive era tax reform and the rise of the district property tax in California. Paper presented at the American Education Research Association 2017 Annual Meeting, San Antonio, TX.
- Kelly, M.G. (2016, April). Competing for inequality: Nineteenth-century ‘market forces’ and unequal schooling in California. Paper presented at the American Education Research Association 2016 Annual Meeting, Washington, D.C.

TEACHING

Pennsylvania State University, Undergraduate

EDLDR 480: Introduction to Educational Leadership
EDTHP 430: History of Education in the United States

Pennsylvania State University, Graduate

EDLDR 540: Technology Applications in Educational Leadership
EDLDR 573: Public School Finance
EDLDR 873: Money and Schools—Perspectives, Finance Policies, and Leadership
EDLDR 841: Data Informed Leadership

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL SERVICE

- Editorial Board, *Review of Educational Research* (November 2022-present)
- Book Review Co-Editor, *American Journal of Education* (2019-present)
- Senior Associate Editor, *American Journal of Education* (2019-present)
- Mentor, Just Education Policy Institute (2023)
- Program Chair, Division F (History), American Educational Research Association (2022)
- Mentoring Chair Division F (History), American Educational Research Association (2021)
- Board of Advisers, National Education Finance Academy (2021-present)
- Board of Trustees (elected), National Education Finance Academy (2021-present)
- Conference Planning Committee, National Education Finance Academy (2020-2022)

- Plenum Representative, University Council for Educational Administration (2019-2021)

Manuscript Reviewer: *AERA Open, American Educational Research Journal, American Journal of Education, Curriculum Inquiry, Educational Policy, Educational Researcher, History of Education Quarterly, Journal of Education Human Resources, Nordic Journal of Educational History, Review of Educational Research, Urban History*