

Education Innovation and Research Program – Early-Phase Grant

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Significance

Introduction

Globally, the education sector faces a predicted shortage of 44 million educators by 2030 (UNESCO, 2023), with factors including workload, stress, and burnout contributing to high stress, attrition, and turnover rates for staff. This is mirrored nationally, with schools facing worsening challenges related to recruiting, retaining, and sustaining thriving teacher workforces, exacerbated by the Covid-19 pandemic. Researchers estimate that **in 2023 there were at least 314,134 positions in the United States either unfilled or filled by teachers not fully certified for their role**, representing about 1 in 10 teaching positions nationally (Franco & Patrick, 2023). The national policy response, *Raise the Bar: Eliminate the Educator Shortage* articulates the U.S. government's commitment to stabilizing the profession, enhancing teacher working conditions, leadership opportunities, and diversity in the profession.

The legacy of the pandemic continues to adversely affect teacher and staffing shortages, including shortages of instructional aides and transportation personnel (PSBA, 2024). For example, as of October 2023, there were **more than 2,000 vacant teacher positions in Pennsylvania (PA) and an additional 6,500 people teaching on emergency certificates** (PSBA, 2024). Research on teacher attrition in PA shows that 9,587 teachers left their position in 2023 – a record number and rising rate, while PA certified only 5,101 new teachers in 2022 (Fuller, 2023). Research further illustrates that high rates of teacher attrition disproportionately affect schools serving a higher number of students of color and schools in the poorest districts suggesting that reducing teacher attrition in schools serving a high proportion of students of color would support improvements in the achievement of students of color (Fuller, 2023). The

pandemic also exacerbated **trends toward an older, less experienced, and more unstable teaching workforce—characteristics that are more prevalent in schools located in disadvantaged communities** (Ingersoll et al., 2021).

Introduction to *Project HERO*

In response to these challenges, **the University of Pennsylvania Graduate School of Education (Penn GSE), in partnership with PeopleBench,** proposes *Helping Educator Resilience & Optimism: Workforce Strategy for Wellbeing & Retention*, referred to hereafter as ***Project HERO***, for the EIR early-phase grant opportunity. ***Project HERO* targets an acute need for an accessible, readily scalable, and research-informed workforce strategy that supports school leaders to develop, implement, and monitor the success of organizational approaches for improving teacher resilience and retention.** *Project HERO* seeks to innovate the workforce strategy of schools through a balance of digital tools and professional development that enable school leaders to (a) develop workforce data literacy in relation to teacher wellbeing, resilience, and retention; (b) build knowledge of data-driven workforce planning; and (c) engage in the design, implementation, and monitoring of longitudinal workforce strategy.

Programmatic Significance

Project HERO Addresses Absolute Priorities 1 & 5

The project addresses Absolute Priority 1 in demonstrating a rationale (see Logic Model: Appendix G) and Absolute Priority 5 in aiming to promote equity in student access to educational resources and opportunities through educator recruitment and retention. The overarching project goal is to improve the wellbeing and retention of teachers through delivering an innovative and cohesive workforce strategy that elevates, strengthens, and sustains a resilient educator workforce to better support high-need students.

Project HERO Addresses Competitive Priorities 1 & 2

Project HERO aligns with Competitive Preference Priority 1: Promoting Equity in Student Access to Educational Resources and Opportunities by **partnering with Cheyney University and Delaware State University** (Appendix C: Letters of Support), both Historically Black Colleges and Universities (HBCUs). *Project HERO* will **engage the universities' faculty and alumni to provide advisory and consultative services**, while also **involving students from each university's teacher education programs to support and enhance a diverse pipeline of teachers that reflect the populations they teach** in PA. In addition, the proposal supports this priority by focusing on a teacher shortage that disproportionately affects schools serving large numbers of students of color, students in poverty, and/or students living in rural areas. Further, it aligns with Competitive Preference Priority 2: Addressing the Impact Caused by Covid-19 on Educators and Faculty, by **rigorously estimating the impact of promising new strategies for recruiting, training and retaining teachers** who improve student access to educational opportunities enabling them to reach their full potential.

Project HERO is designed to address a critical gap in research by rigorously evaluating an entrepreneurial approach to an organization-level workforce strategy developed by PeopleBench that supports school leaders to take evidence-informed action to enhance teachers' working conditions, wellbeing, and retention. Aligned with the What Works Clearinghouse (WWC) requirements, **Penn GSE with Quantily, LLC (evaluation partner) will conduct a randomized controlled trial (RCT) to assess the impact of PeopleBench's readily scalable workforce improvement strategy, workforce data and professional learning platform.** *Project HERO* will estimate the impact of this workforce improvement strategy on teacher

wellbeing and resilience, leadership capability development, and teacher retention and career progression in districts across PA (Appendix C: Letters of Support).

National Significance

“Teachers’ working conditions are also students’ learning conditions.”

--Minneapolis teacher, quoted in Podolsky et al. (2019, p. 18)

There is a robust body of research showing the potential of organizational level improvement strategies that improve the professional environment and teachers’ personal resources concurrently **to positively impact the resilience, wellbeing, and retention of teachers and school leaders** (Ainsworth & Oldfield, 2019; Flemming, 2024; Oldfield & Ainsworth, 2022). Working conditions, which include the nature and level of support provided by school leaders, significantly influence teachers’ decisions to remain in the profession, particularly for teachers of color (Marx et al., 2023). When teachers are supported by school leaders, they are less likely to be impacted by stress from job demands, with recent research arguing that “developing intentional systems of care could help provide greater resources for coping and reduce attrition” (Kaiser, 2023, p. 10). Developing school leader capability as a way of enhancing workforce resources addresses gaps in workforce management and human resources knowledge, skills, and practice in schools.

Staff in school settings are especially vulnerable to work-related stress. During the pandemic, a Gallup poll of 12,319 U.S. full-time employees, including 1,263 K-12 workers, indicated that 44 percent of employees in K-12 education report feeling “always” or “very often” burned out – the highest rate among U.S. workforce groups (Marken & Agrawal, 2022). Stress and burnout correlate with intentions to leave the profession (Doan et al., 2023) and with staff performance. In turn, low morale and attendance among staff negatively impacts student learning

and achievement, with productivity shown to be significantly lower on days when regular teachers are replaced with substitutes (Herrmann & Rockoff, 2012; Lever et al., 2019).

High turnover rates for teaching staff have similarly direct impacts for student achievement: “students who lose their teacher during the school year have significantly lower test score gains (on average -7.5 percent of a standard deviation unit) than those students whose teachers stay. Moreover, the turnover of other teachers during the year lowers achievement gains” (Henry & Redding, 2020, p. 332). Other research shows that students tend to do worse in years when teacher turnover rates are higher (Ronfeldt et al., 2011) and that “turnover has marked, and lasting, negative consequences for ... student achievement” (Sorensen & Ladd, 2020, p. 1). In addition to the influence on student achievement, teacher turnover is costly (Fuller, 2023); by one estimate, teacher turnover cost taxpayers in the U.S. an estimated \$8.5 billion per in 2016 (Podolsky et al., 2016). In this context, there is benefit in testing approaches that retain teachers in schools and the profession, addressing a challenge of national significance.

Addressing the Challenges

Penn GSE intends to test the efficacy of PeopleBench’s platform to transform educator retention in schools through evidence-informed workforce strategy. Currently, PeopleBench technology, research, and advisory services impact over 4,000 schools, 180,000 staff, and 1.6 million students worldwide. The PeopleBench platform is currently used in 244 schools in the United States, including schools in New York, Vermont, Pennsylvania, South Carolina, Ohio, Texas, Arizona, and California.

An initial mixed method study of the PeopleBench platform and tools conducted by Penn GSE with four PA districts (21 schools, ~14,800 students) in the 2022-2023 school year showed evidence of promise for improving school leaders’ management capacity as well as how school

leaders understood and approached resilience, resulting in shifts in leaders' management capacity. Appendix J.1 offers a summary of this study. It also provided evidence of the usefulness of PeopleBench's Resilience Tracker (Appendix J.2.ii).

PeopleBench is now in the process of finalizing its workforce strategy program that aims to address staff supply and retention challenges by building capacity in schools to improve leader, teacher, and staff working conditions. To this end, PeopleBench is partnering with Penn GSE to pilot, deliver, and rigorously evaluate its workforce strategy program. The integrated digital platform assesses key workforce metrics (including resilience), engages leaders in the up-to-date research on workforce strategy and management, and enables leaders to develop a customized 3-year workforce strategy that closes workforce gaps exacerbated by the Covid-19 pandemic.

Dissemination

Penn GSE is uniquely situated to distribute the findings, models, and recommendations from this work, as it operates at the nexus of education centers, industry networks, and policy makers. Data, findings, and promising practices from *Project HERO* will be shared through education conferences, as well as at annual *Project HERO* convenings that Penn GSE will host in grant years 3-5. These will bring together participants from the Penn Literacy Network, Center for Professional Learning, Center for School Study Councils, Coalition for Educational Equity, and our global educational entrepreneurship ecosystem.

The research will generate insights into educational leadership development, teacher wellbeing and resilience, and workforce retention. These will be submitted to peer reviewed journals, through ERIC for inclusion in the WWC and published as accessible white papers. The project will leverage Penn GSE's broader network to share results with a range of educational

stakeholders to continue conversations and research for **accessible and scalable workforce strategy that enables organization-level action to improve teacher resilience and retention.**

High-Quality Project Design

Workforce Strategy: A Promising New Approach for Workforce Development

Project HERO will implement and meticulously evaluate a novel digital approach to workforce strategy in schools that enables school leaders to:

- (a) advance their workforce data literacy in relation to staff metrics, including turnover, wellbeing and resilience, and retention;
- (b) develop their knowledge of and experience with data-driven strategic workforce planning; and
- (c) design, implement, and monitor locally responsive longitudinal workforce strategy.

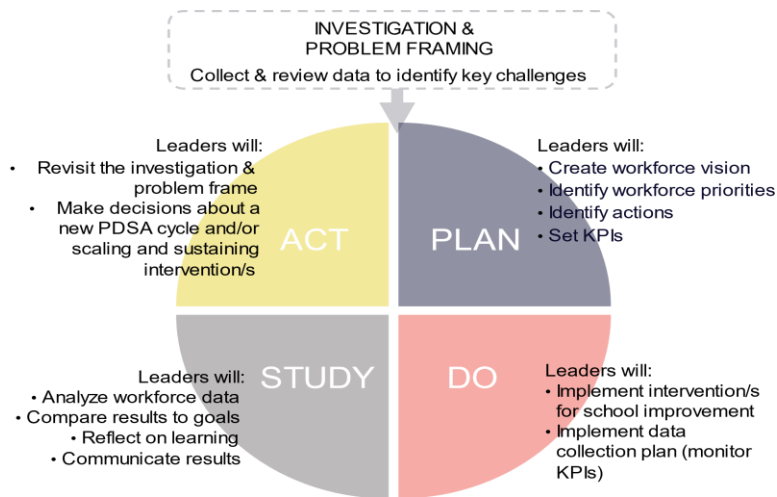
The PeopleBench interventions work with the understanding that school leaders have major influences on staff decisions to remain or leave a school workforce (Marx et al., 2023) and that they are best positioned to modify workforce conditions as warranted in response to staffing challenges. Clear, comprehensive, and cohesive data sets provide visibility of and insight into key challenges. In turn, this allows school leaders to develop responsive strategies, drawing on current research about what is likely to work in various situations and segments of the workforce.

High-Quality Conceptual Framework Underlying the Proposed Research

Project HERO uses inquiry-based improvement cycles to guide and facilitate leaders' development of workforce data literacy and workforce strategies, and to implement them. An inquiry cycle starts with the issue to be addressed, providing a focus to approach the collection and interpretation of data (see Figure 1 below). The Plan–Do–Study–Act (PDSA) Cycle provides a framework for quality improvement of systems that guide an iterative process of using data to

design and test changes to practice intended to achieve a specific outcome (Reed & Card, 2016; Taylor et al., 2014). Widely used in healthcare and adapted for use in Professional Learning Communities to support teachers’ professional development for student instruction (e.g. Regional Educational Laboratory West, 2019), the cycle begins with an initial framing of the investigation area and challenges to be addressed using data. It then provides a structure to guide school leaders through a cycle of engaging with data to design, implement, and monitor workforce strategy interventions that respond to local workforce challenges throughout their involvement in *Project HERO* (see, Figure 1).

Figure 1. *Plan-Do-Study-Act Inquiry Cycle* (Reed & Card, 2016; Taylor et al., 2014)



The five-year grant period will include 6 months of planning, one pilot year, and three years of full-scale interventions and corresponding RTC study (see Table 1). The intervention program targets iterative workforce strategy development to help school leaders deliberately create working conditions that support and improve the retention of educators. Leaders in treatment schools will have access to a range of research-informed interventions that develop capability, guide strategic workforce planning process, and enable responsive implementation. Appendix J.2.i offers an overview of interventions and corresponding evidence base.

Table 1. Program Activities and Intervention Use by Grant Year

Spring 2025

Grant award. Establish relationships with participating pilot schools.

Pilot Period (SY2025-2026)

Participants: 10 Treatment/10 Control Schools

RCT Study Year 1 (SY26-27)

Inquiry Cycle

Participants: 44 Treatment/44 Control Schools

Leaders in treatment schools will develop their Workforce Dashboard, consolidating workforce data (i.e. staffing data collected from district payroll/human resource software with data from publicly available sources) along with Workforce Diagnostics (Resilience Tracker and Culture Tracker).

These activities are supported by online professional learning (completing three 1-hour core learning modules in the Workforce Learning Hub) and participating in four 90-minute Professional Learning Community (PLC) sessions.

Investigation & Problem Framing - Leaders will:

- Collect / review data
- Identify key challenges
- Develop knowledge (Learning Hub and PLCs)

RCT Study Year 2 (SY27-28):

Inquiry Cycle

Participants: 44 Treatment/44 Control Schools

School leaders use their Workforce Dashboard and Diagnostics, incorporating these in their Workforce Strategy Builder. These inform the design of a context-responsive workforce vision, identify their key staffing priorities, select intervention options, and set Key Performance Indicators (KPIs) to monitor progress longitudinally. Additionally, the program team will collect response strategies and promising practices.

These activities are supported by online professional learning (completing three, 1 hour learning modules in the Workforce Learning Hub) and participating in four 90-minute Professional Learning Community (PLC) sessions.

Plan - Leaders will:

- Design workforce vision, priorities, actions & KPIs
- Develop knowledge (Learning Hub and PLCs)

Do - Leaders will:

- Implement intervention/s for school improvement & KPI monitoring

Leaders use the Implementation Planner to support responsive workforce action.

RCT Study Year 3 (SY28-29)

Inquiry Cycle

Participants: 44 Treatment/44 Control Schools

Study - Leaders will:

School leaders regularly engage with their Workforce Dashboard and Diagnostics. They continue to recalibrate regularly to Workforce Strategy Builder to set a context-responsive workforce vision, identify their key staffing priorities, select intervention options, and set Key Performance Indicators (KPIs) to monitor progress longitudinally.

- Analyze workforce data
- Compare results to goals
- Reflect on learning
- Revisit the investigation & problem frame

These activities are supported by online professional learning (completing three, 1 hour learning modules in the Workforce Learning Hub) and participating in four, 90-minute Professional Learning Community (PLC) sessions.

Act - Leaders will:
Make decisions about a new Inquiry Cycle or scaling and sustaining interventions

Leaders use the Implementation Planner to support responsive workforce action.

Fall 2029

Finalization of study results. Preparations for publication and external communication.

The suite of PeopleBench **interventions (Appendix J.2) support workforce strategy at scale while retaining and enabling localized, responsive workforce solutions** through providing leaders with a platform that allows them to **select their workforce priorities and longitudinal action in response to nuances in their workforce data**. Together, the intervention suite constitutes an innovative approach to management practices that replace the status quo by supporting school leaders to see the benefit of workforce strategy to deploy resources and support staff deliberately; articulate improvements in their data-informed workforce decision-making capability; enhance their knowledge and skills to support and sustain staff resilience at the organizational level; improve their data literacy of workforce metrics; and develop their

knowledge, understanding, and self-efficacy of effective interventions and approaches to staff resilience and retention. These interventions will be evaluated annually using a self-reported survey developed during the implementation study to capture principal experiences along with responses to Workforce Learning Hub quizzes.

Participant Recruitment

Active recruiting and selection of schools and leaders to participate in the study is a critical success factor for this project. Penn GSE's existing relationships have led to 19 school districts, including the City of Philadelphia School District, expressing interest in the project (Appendix C: Letters of Support). If funded, participants will be recruited from these 19 districts and through the Penn GSE's extensive existing networks and relationships with district and school leaders if additional schools are needed. Due to the project's focus on a sustained and acute challenge within schools, and with a total number of 54 schools able to participate in the treatment, it is anticipated recruiting targets will be met. In total, 54 Principals, approximately 3400 staff (including >2200 teachers), and approximately 32,200 students will be directly served by the project. Accounting for the benefits available to non-participating schools within participating districts (e.g. sharing of data and research outputs), the impact of the project will reach 354 principals, approximately 210,900 students and approximately 22,600 staff (including >14,800 teachers). Find details on sampling, power calculations, and analysis in Appendix J.5.

Goals, Objectives, and Outcomes

During the project, Penn GSE, in partnership with PeopleBench, will work with school leaders across the sample with the overall goal to improve the wellbeing, resilience, and retention of the staff in participating schools through developing up to 250 leaders' capabilities in workforce strategy. Specific project goals and corresponding measures are below.

Table 2. Objectives and Performance Measures

Objective 1: Identify and train school leaders on best practices in workforce data literacy, workforce development, and management practice.

Performance Measures	Y1	Y2	Y3	Y4	Y5
1. # of principals attending all four PLC sessions each year (Baseline DNE)	NA	8/10	35/44	35/44	35/44
2. % of principals completing core PeopleBench learning modules (workforce data; workforce strategy; strategy implementation) in the first year	NA	100	100	100	100
3. % of principals completing at least 3 elective, relevant learning modules per year on workforce interventions	NA	70	70	80	85
4. % of principals who report they are confident or very confident using workforce data to inform strategy	NA	60	70	80	90
5. # of school leaders (principals + their leadership team colleagues) engaged in PeopleBench learning activities	N/A	10	75	150	250
6. Leader professional learning – % of leaders who are satisfied or very satisfied with PB Learning Modules	NA	60	70	80	90
7. % of staff (respondents to staff survey) who report positive changes in leadership practice throughout program	NA	50	70	80	90

Objective 2: School leaders develop and implement data-informed workforce strategy.

Performance Measures	Y1	Y2	Y3	Y4	Y5
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1. # of leaders engaging regularly (3 times per year) in the platform each year	NA	7/10	26/44	32/44	37/44
2. Strategy development: # of leaders with identified priorities, projects and success measures in their strategy	NA	7/10	26/44	32/44	37/44
3. Strategy development: % of leaders utilizing at least 1 quantitative success measure for each priority in their strategy	NA	60	80	90	100
4. % of leaders who develop an implementation plan utilizing success measure to track progress annually	NA	NA	30	60	80

Objective 3: Improve staff (including teachers) and student experience and retention in PeopleBench schools.

Performance Measures	Y1	Y2	Y3	Y4	Y5
1. # of students learning in participating schools	NA	5,970	32,238	32,880	32,880
2. % increase in teacher attendance from baseline (percent per year) in participating schools (<i>confirmatory outcome</i>)	NA	NA	3%	5%	7%
3. % increase in staff (including teachers) retention (percent per year) in participating schools (<i>confirmatory outcome</i>)	NA	NA	3%	5%	7%
4. % increase in leader (including principals and other roles in school leadership teams) retention (percent per year) in participating schools	NA	NA	3%	5%	7%
5. % of staff (of those invited to participate) who complete the Resilience Tracker and Culture Tracker survey each year	NA	55	60	65	70

6. % increase in student attendance from baseline in participating schools	NA	NA	3%	5%	7%
7. Overall average staff (including educators) resilience score out of 100 on the Resilience Tracker (<i>exploratory outcome</i>)	NA	70	73	76	79
8. # of schools where 70% of staff perceive culture to be positive measured using the Culture Tracker (<i>exploratory outcome</i>)	NA	5/10	30/44	33/44	38/44
9. # of schools with an Employee Net Promoter Score (an indicator of staff satisfaction in the Culture Tracker) greater than 50 (<i>exploratory outcome</i>)	NA	5/10	30/44	33/44	38/44

Note. Year 1 is defined as spring 2025. Year 2 encompasses SY25-26, Year 3 encompasses SY26-27, and so on.

In addition, Penn GSE, PeopleBench, and Quantily will collect data on additional GPRA measures, including the number of high needs students served by the grant, student outcomes in multiple contexts, the cost-effectiveness and cost per student of grant project activities.

Meeting the Needs of the Target Population

The need to serve high need students. The Commonwealth of PA comprises a **highly diverse student population**. Of the districts participating in this project (Appendix C: Letters of Support), **86% of schools are eligible for Title 1 funding** due to the high percentage of low-income families they serve. Further, **in 66% of these schools the majority of enrollments are students of color. The average racial/ethnic profile of these schools is 68% minority subpopulations** (38% Black; 18% Hispanic/Latino; 7% Asian; 5% two or more races). The project **targets improved outcomes for these high need populations by empowering school**

leaders to improve workforce outcomes in schools that serve high-need students, particularly in communities which are socioeconomically disadvantaged.

The need to address learning loss in high need student populations due to teacher turnover. The need for a scalable and sustainable workforce strategy as a mitigator of poor staff outcomes is more acute in this group of districts than in many parts of the country. **Staff turnover - especially teacher turnover - has been increasing in PA since the pandemic.** The number of teachers leaving PA schools hit an all-time high in 2022-23 with new teacher accreditation rates inadequate to address the gaps left by departing teachers (Fuller, 2023).

- Teacher turnover has been shown to have a negative impact on student learning gain, with the negative impacts inequitably influencing schools in areas where students experience high rates of poverty and racial diversity, which are more likely to have higher rates of leader and staff turnover (Henry & Redding, 2020; Ronfeldt et al, 2011; Sorensen & Ladd, 2020).
- In PA, teacher turnover is higher among districts with the poorest students (Fuller, 2023), consistent with national trends which show considerably higher turnover among Title 1 schools than non-Title 1 schools (Carver-Thomas & Darling-Hammond, 2019).
- Teacher turnover is highest in PA schools with the highest proportion of students of color (teacher turnover rates in schools with 90+% students of color were 2.5 times higher than schools with less than 10% students of color) (Fuller, 2023).

***Project HERO* will target the acute need for locally responsive workforce innovations that address teacher turnover and attrition to support schools that serve students of color and students experiencing poverty.** The project will produce **models of promising practice in**

schools with a variety of challenging circumstances and demographics that will be shared and adapted by other schools.

Project HERO meets the need for leaders to support vital aspects of school workforces, including resilience, turnover, and school culture. Research indicates that recruiting and retaining diverse teachers requires a demonstrated commitment from educational leaders (Nevarez et al, 2019). Engaged and active participation by educational leaders can create a powerful multiplier effect, amplifying positive outcomes (Manna, 2015). Further, school cultures play a key role in mediating educator and staff experiences of work. Kozleski and Proffitt (2020) argue that attracting, developing, and retaining teachers of color depends on a re-examination of the cultures that operate in schools. Fuller’s (2023) analysis showed that Black teachers left PA schools at higher rates than other groups. Further, male teachers, already in short supply, exhibited higher turnover rates than female teachers; this was particularly true for male teachers of color.

By participating in *Project HERO*, school leaders will have access to professional learning modules focused on the recruitment and retention of diverse teachers, including teachers of color, and on workforce culture, which is often noted as a mediating factor in teachers’ decisions to leave the profession (Marx et al., 2023). *Project HERO* aims to enhance staff retention through enabling school leaders to generate, interpret, and translate data-informed insights into workforce strategy that addresses the above needs in PA schools.

High Quality Personnel

We have assembled a diverse team that brings extensive expertise and complementary skills for this project, and all three organizations partnered in this proposal are dedicated to hiring practices that promote opportunities for underrepresented groups. For example, half our Penn

GSE team members are people of color and 62.5% are women; PeopleBench is a female-founded and female-led enterprise (100% of Directors and 83% of senior leaders are women), and Quantily, LLC is a registered woman-owned small business where 65% of the workforce is from an underrepresented group. Diversity, Equity and Inclusion Practices for all three organizations is included in Appendix J.3.

The Penn GSE Team

Penn GSE is an established leader in innovative research and educational initiatives. Penn GSE partners with schools, universities, entrepreneurs, policy and changemakers, and communities to expand educational access, especially for those underserved by society. By connecting education leaders across the industry with the shared goal of improving education through innovation, it can facilitate public conversations, host working groups on pressing challenges, honor the change makers who transform teaching and learning, and support equity in education to close achievement gaps. It is thus uniquely qualified to undertake Project HERO.

██████████, EdD, MBA, Vice Dean of Innovative Programs and Partnerships at Penn GSE, will be the Program Director and Principal Investigator on this project overseeing all aspects. ██████████ brings expertise in envisioning and implementing and convergence of business, technology, and education in established, emerging, and public sector environments. He has committed his career to education reform through innovation and impact. ██████████ served as Deputy Secretary of the Pennsylvania Department of Education, where he set strategy, policy, programs, and legislation for over two million students. ██████████ co-founded and led Educurious, a non-profit corporation that provides project-based courses and professional development services to empower and motivate marginalized young people through

transformative learning experiences. [REDACTED] also held senior leadership positions at Pearson and Microsoft.

[REDACTED], PhD, Assistant Professor, Human Development and Quantitative Methods Division at Penn GSE is an expert in educational statistics. [REDACTED] will serve as Co-PI on this project leading the rigorous evaluation of *Project HERO*. Her research projects are at the leading edge of statistical methods in field contexts, including scaling up interventions. Her current projects assess the extent to which generalizations can be made from small studies and they consider the advantages and trade-offs of different estimation approaches in the presence of limited data. Her work has appeared in the *Journal of Educational Effectiveness*, *the Journal of Educational and Behavioral Statistics*, *Psychological Methods*, and *Evaluation Review*.

[REDACTED], PhD, evaluation partner, of Quantily, LLC is a strategic partner to Penn GSE and will serve as a key leader in the evaluation of *Project HERO*. She has conducted numerous mixed-methods grant evaluations, including three early-phase EIR grant awards (2017, 2019, and 2022), FSCS, MSAP, and CSP. She is experienced with both quasi-experimental and experimental designs in education, and emphasizes the importance of data quality, validity, and integrity in her work. [REDACTED] was selected to present to other evaluators during the 2021 EIR conference on, “Complex Evaluations for Complex Program Designs.” Prior to founding Quantily, LLC, [REDACTED] spent ten years at the RAND Corporation, an organization known for producing rigorous research on our nation’s most pressing topics. [REDACTED] started her career with Teach For America as a 4th grade bilingual teacher. [REDACTED] will work closely with Penn GSE to ensure that necessary data is collected and to provide interim analyses to inform the development of the program.

Penn GSE will also be leveraging additional talent with decades of experience across k-12 education leadership, educational research, and technology solutions development, as key personnel included in the following:

- [REDACTED], Director of Growth & Impact, Catalyst, Penn GSE
- [REDACTED], Research Assistant, Catalyst, Penn GSE
- [REDACTED], Director, Center for School Study Councils, Penn GSE
- [REDACTED], Esq., Director, Coalition for Educational Equity, Penn GSE
- [REDACTED], Associate Director, Coalition for Educational Equity, Penn GSE
- [REDACTED], Entrepreneur in Residence, Catalyst, Penn GSE

For curriculum vitae and resumes of all key project personnel, see Appendix B: Resumes of Key Personnel. Curriculum vitae and resume of additional team members are provided in Appendix J.6.

The PeopleBench Team

[REDACTED], CEO, has spent more than two decades leading and managing workforce transformation programs across the government and not-for-profit sectors with a special focus on education workforces and strategic leadership in Australia, Europe and the United States. She has founded two companies: J&G Consulting in 2012 (specializing in not-for-profit workforce and strategic leadership) and PeopleBench in 2017.

[REDACTED], PeopleBench Ambassador, is the former Superintendent of Richland School District Two in Columbia, SC, where he served as the first Black superintendent in the district's 90-plus-year history. [REDACTED] groundbreaking career in education has seen advances in education outcomes and equity—driven by his focus on

collective vision, organizational effectiveness, talent development, and community and partner engagement.

██████████, Vice President of Customer Success, is a former elementary teacher turned education researcher. ██████████ leads the Customer Success team for PeopleBench across the USA. ██████████ commitment to student and educator mental health and wellbeing, alongside her depth of expertise in Federal, State, and District level strategy, reform, and improvement agendas makes her a powerful ally and advisor to education executives seeking to transform their systems of schools, to benefit students and communities across the country.

High Quality Management Plan

Penn GSE will serve as the lead agency and fiscal agent for this proposed *Project HERO* grant project. In this capacity, Penn GSE will assume legal, fiscal, and fiduciary responsibility for managing federal funds in accordance with federal regulations, policies, and guidelines. Penn GSE has a proven track record in successfully managing and executing large, multi-year federal grants. Notable examples include the Center on Standards, Alignment, Instruction and Learning (C-SAIL) funded by the Institute of Education Sciences with an award amount of \$9,999,999.

Additionally, Penn GSE has administered the University of Pennsylvania Predoctoral Training Program in Interdisciplinary Methods for Field-Based Research in Education, which received an award amount of \$4,586,296 from the Institute of Education Sciences. Furthermore, Penn GSE has led the implementation of the Professional Development Supports for Teaching Bioinformatics through Mobile Learning project, supported by the National Science Foundation with an award amount of \$1,036,108. These experiences demonstrate Penn GSE's expertise in managing and delivering impactful educational projects, ensuring effective stewardship of grant

funds, and achieving successful outcomes. Penn GSE’s business office is adept at creating and submitting on-time and factual update reports to funding and philanthropic partners.

The Penn GSE Project Director, [REDACTED], will serve as the leader of the project Management Team (PMT). PeopleBench and Penn GSE will continuously seek feedback from partner districts, participating principals, and evaluators, in monthly meetings, and we will conduct a formal review of the partnership each year to ensure it is functioning to its highest potential and all requirements are being met. The management plan will achieve project objectives on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks. **Project management activities (Table 5) in the following timeline will repeat annually throughout the grant with the exception of items marked with an asterisk (*) that are one-time activities.**

Table 3. *Project Management Activities*

Timeline	Major Project Management Activities	Responsible Parties
Upon notice of funding ~Dec. 2024	Announce notice of EIR award to Penn GSE and project partners*; Project Director (PD) establishes meeting cadence; IRB approval; Contracts with PeopleBench and Quantily are finalized*; establish communication Hub and expectations for routine engagement*	Penn GSE, PeopleBench, Quantily
Jan. 2025	Designate project managers (PMs) from each project partner/school to be responsible for communication, implementation, compliance, and reporting related to <i>Project HERO</i> . All PMs, together with the external evaluators (Penn GSE and Quantily) and the PD, constitute the Project Management Team (PMT).	Penn GSE, PeopleBench, Quantily, School partners, i.e., PMT
Jan. 2025	Meet with key stakeholders and evaluation team to review goals, objectives, activities, timelines, budget, and next steps.	PMT
	<i>Milestone: Project Staffing and Management Team Complete</i>	
Jan. 2025	Establish shared drives/folders to house all activities and data for ease of collaboration*; Establish data collection and reporting procedures, timelines, and methods. *	Penn GSE

Feb. – Mar. 2025	Establish baseline data from which progress will be measured*; Update baseline retention, performance, and demographic information of school partners	School partners; Evaluation team
Mar. 2025; updated annually	Collect and review all documents related to the program intervention, leadership training, communication, etc.	Evaluation team
Apr. – June 2025; annually as schools are introduced	Complete technical integration with school partners and PeopleBench platform; school leaders for 1st pilot cohort login to software platform	PeopleBench
Apr. – June 2025; as needed	Evaluation design docs drafted; Schedule initial site visits to conduct interviews and focus groups with key personnel; Observe online trainings	Evaluation team
Establish August 2025; measurement & discussion ongoing	Establish implementation fidelity measures- collect program data end of each semester for review by PMT to promote discussion on ways to improve fidelity	Evaluation team

Milestone: Project Systems, Baselines, and Targets Established

Monthly	Consult with school teams and project partners/supporters to implement, actualize, and scale the program	Project Director (PD)
Annually	Participate in Annual EIR Conference	PD / Evaluator
Annually beginning Aug. 2025	Manage program related trainings (PLCs and Online modules)	PeopleBench
June 2025, annually	Develop and revisit plan for recruiting and scaling	PMT
May-June, Nov-Dec, first 3 years	Begin iteration and improvement of the learning management and workforce strategy planning technology platforms; prepare to operate at scale	PeopleBench, with support from PMT
Annually in Dec. and June	Complete annual interim financial and management reports for APR; Annual 360 review of project partnerships, communication, and management; share with stakeholders via board meetings; submit formative reports (December each year) interim summative reports (July each year), to include with APR	PMT and Evaluation team
Annually; WWC	Disseminate results of EIR project to US Dept of Ed, regional and local stakeholders and partners through networks and academic and practice based conferences.	PD, PMT, and Evaluation team

submission by Dec. 2029 Convene district partners and project personnel (annually in year 3, 4, and 5).
Submit to ERIC for inclusion in the WWC.

Milestone: Project HERO Complete; Targets Met

We anticipate a start date of January 1, 2025, at which time work will commence. Penn GSE will have direct responsibilities including finalizing district partnerships, program promotion through email communication, securing leader participation in pilot efforts, and gathering demographic and baseline data. Penn GSE will continue these responsibilities throughout the life of the project, continuing to improve communication methods as the program scales.

PeopleBench will manage all other aspects of the program including registration, onboarding, scheduling, providing training, and administrative support. The evaluation team, a subset of the Penn GSE team in partnership with Quantily, LLC, will be in charge of the evaluation of *Project HERO*, as described in the evaluation narrative. This model provides clearly defined roles and responsibilities among the project stakeholders throughout the project.

High Quality Project Evaluation

Producing Evidence of Effectiveness that will meet WWC Standards without Reservations

Penn GSE, in partnership with Quantily, LLC, will execute an impact analysis, implementation analysis, and exploratory analysis of *Project HERO*. The evaluation team does not have a vested interest, financial or otherwise, in PeopleBench – and the evaluation will be implemented independent of program operators, with no approvals required for the publication of results. The evaluation team will seek approval from the University of Pennsylvania's Institutional Review Board (IRB) before the project commences. The evaluation team has significant expertise conducting rigorous grant-funded evaluation designs including multiple

early-phase EIR grants, which have or are on-track to produce research that qualifies for inclusion in the WWC. The research questions that guide the confirmatory impact analysis are:

- RQ1: What is the impact of principal participation in *Project HERO* on teacher retention after three program years?
- RQ2: What is the impact of principal participation in *Project HERO* on teachers' attendance after three program years?

In addition, the quantitative analysis will be complemented by an exploration of workforce retention, and changes in teacher resilience and school organizational culture in treatment versus control schools using the Most Significant Change technique. For more details on the MSC, see Appendix J.5. The qualitative analysis will be guided by the following research questions:

- RQ3: In what ways, if any, has *Project HERO* supported workforce (educator and principal) retention?
- RQ4: What changes, if any, have there been for teacher resilience for those schools participating in *Project HERO*?
- RQ5: How has the organizational culture changed or not for those schools participating in *Project HERO*?

Impact Analysis Design

The evaluation will utilize a cluster randomized controlled trial (RCT) design, where in year 2, at least 88 school leaders across 10 districts will volunteer for inclusion in the randomization (44T/44C). Within the districts, we will stratify by socioeconomic status (SES) and group participating schools into one of three SES strata (low, middle, and high). We then block within the strata by school level (elementary, middle, and high). Randomization will occur at the school level, within districts; 10 districts with three SES strata and blocks for elementary,

middle, and high schools, such that elementary schools are compared to other elementary schools, middle to middle, and so on, within the same district and stratum. These strata and blocks will be accounted for in the econometric model to ensure we are capturing variation due to the treatment within each block and stratum.

Analytic Model

A two-level hierarchical linear model (HLM) will be used to account for correlations of outcomes among teachers in schools. For the outcome of teacher retention, we will use a generalized HLM with a logit link to estimate treatment impacts. Block by treatment interactions will be utilized to estimate treatment effects for each block. Similar analyses will be conducted within strata. Then, an overall average treatment effect will be calculated that is weighted by the number of teachers in each block. Within blocks, this two-level model with block by treatment interactions is likely to yield more precise estimates and can allow us to assess for variation in treatment effects across blocks. For the estimate of teacher attendance, in addition to demographic variables (age, race/ethnicity, gender), we will use years of experience, type of teaching certification and teacher average daily attendance for the year prior as baseline measures. For the estimate of teacher retention, we will use years of experience and average teacher retention for the cluster as baseline measures.¹ For the exploratory study, a similar two-level HLM approach will be used to assess treatment impacts on the workforce outcomes of retention, resilience and school organizational culture.

Missing Data. Our team will work to keep missing data to a minimum through data sharing agreements and incentives for teachers. For any variables with missing data, we will assess the degree and pattern of missing data to see whether missing data elements can be

¹ [What Works Clearinghouse Procedures and Standards Handbook, Version 5.0](#), page 56; acceptable baseline measure, accessed 11 July 2024.

inferred from other responses. We will conduct complete-case analysis and apply a maximum likelihood approach for any participant with missing covariate information (Collins, Schafer, & Kam, 2001).²

Power Analysis

We used PowerUp! (Dong & Maynard, 2013) to conduct the power analysis and determine the minimum detectable effect size (MDES) that the proposed study has at least 80% power to detect. The provided table in Appendix J.5: Evaluation Detail provides two scenarios. In both cases, we computed the MDES using a 2-level cluster randomized design in which teachers (Level 1) are nested within schools (Level 2). Based on a sample of 35 schools per condition (after accounting for 20% attrition), 40 FTE teachers per school, and an average intraclass correlation coefficient (ICC) between 0.05 and 0.10, the proposed study has 80% power to detect MDES values between **0.146** and **0.217**. These values are also based on the assumption that both teacher- and school-level covariates are at least 60% predictive of teacher outcomes (Appendix J.5: Evaluation Detail). The proposed MDES values fall within the range of estimated effect sizes observed in educational intervention studies (Weiss et al., 2017; Cook et al., 2015). The table in Appendix J.5: Evaluation Detail provides the MDES for the exploratory analysis on workforce outcomes. Using similar parameters as those in the main study on teacher outcomes, the proposed study has 80% power to detect MDES values between **0.134** and **0.207** for workforce outcomes.

Cross-overs. We expect few principal and teacher crossovers during the three-year intervention period. Cross-overs will be tracked formally and consistent with WWC standards, will still be included in the intent-to-treat estimate.

² [What Works Clearinghouse Procedures and Standards Handbook, Version 5.0](#), page 95; handling missing data, accessed 11 July 2024.

Attrition/Contamination. Because principals volunteer to participate, we expect low principal-level attrition and joiners will not be included in the analysis. We expect minimal contamination to occur between treatment and control principals, as the PeopleBench interventions are run independently of district-level interventions. With respect to teachers, PeopleBench has found that approximately 80% of teachers remained in prior studies and we include this consideration in the power analyses.

Valid/Reliable Measures

All confirmatory outcome measures are based upon valid and reliable information that schools routinely collect about their employees as a contractual obligation (attendance, retention). Additionally, the survey questions that are the foundation for the exploratory study of resilience were externally created, with strong face validity and $\alpha=0.84$ for the 20-item scale (Winwood et al., 2013, p.1207). In the first two years, prior to the RCT, the researchers will independently test the validity/reliability of the PeopleBench-created organizational culture construct. If the PeopleBench construct does not meet WWC thresholds, the researchers will make recommendations for an alternate measure of culture.

Evaluation Formative Feedback and Assessment of Progress Towards Goals

This mixed-methods evaluation will provide detailed interim analyses of principal and teacher experiences, and interim outcomes to understand the barriers to implementation. Implementation data collection methods will include: (1) interviews with program principals and school staff; (2) focus groups and surveys of staff in treatment schools; (3) observations of principal PLCs and trainings; (4) participation in ongoing project meetings; and (5) ongoing literature review of similar programs to uncover best practices to guide the improvement of the program as it progresses. The aim of these activities will be to make data-informed

recommendations for refining the intervention to understand which components of the intervention are most effective, and to identify significant mediating relationships between the intervention and outcomes of interest. Principal interviews will be analyzed using the Most Significant Change (MSC) technique, which provides a participatory structure for analyzing stories of change (Appendix J.5: Evaluation Detail). Specifically, we will identify changes in leadership mindsets—a potential mediating factor, that may result from the treatment.

Transcripts from teacher focus groups will be coded according to a structure designed to provide comparative information among participating teachers and identifying primary and secondary factors and themes that contribute to any differences (Guest et al., 2012). Surveys will be analyzed by subpopulation and will include identification of statistical differences among respondents.

Reporting

The evaluation team and PeopleBench will meet biweekly (or as needed) to discuss developments in the program and emerging findings from the evaluation. Two reports will be produced each year that contain analyses and recommendations designed to create reflection and positive change in the program. The mid-year memo will provide formative feedback from interviews, focus groups, and surveys, and the end-of year-memo will provide an analysis of implementation fidelity and interim outcomes (as described above). In year 5, a summative report will be communicated externally and submitted for inclusion in the WWC. A timeline outlining the evaluation activities by year is included below.

Table 4. Evaluation Activities by Grant Year

Spring 2025	Grant award. Document review. Instrument design. Consent draft and IRB submission. Study design documentation. Interviews with program leaders. Implementation study commences. Recruiting continues
SY25-26	Pilot period commences (10 schools / approx. 400 teachers / 800 workforce). Principal interviews and teacher focus groups / surveys to understand barriers to program delivery. Implementation fidelity analyzed. Recommendations for program improvement. REES entry. Blocked randomized occurs.
SY26-27	RCT Study Year 1 (44 Treatment / 44 Control). Implementation and fidelity analysis continue. Pre/post interim results reviewed.
SY27-28	RCT Study Year 2. Crossovers and contamination are formally measured. Implementation, program fidelity, and interim outcomes analyses continue.
SY28-29	RCT Study Year 3. Outcomes collected. 3-year fidelity assessed. WWC Study drafted. Presentation of findings.
Spring 2029	Finalization of study results. Preparations for publication and external communication.

Project Components, Mediators, and Outcomes

The logic model (Appendix G: Logic Model) clearly articulates the key components of the project (use of workforce strategy builder, online core curriculum, PLC sessions, teacher resiliency training, staff participation in Culture Tracker and Resilience Tracker), the mediators (school leader retention, changes in workforce strategy, school climate/culture, teacher resilience), and the outcomes of interest (workforce and teacher attendance, teacher retention). The extant literature suggests empirical links between resilience, organizational culture, and the outcomes of interest, and we will evaluate these connections in the post-pandemic context of *Project HERO* (Mullen Shields, & Tienken, 2021; Tait, 2008).

Fidelity Analysis

The evaluation team will measure the extent to which the program is meeting key dimensions used to measure implementation fidelity: (1) Adherence, (2) Duration, (3) Quality, (4) Participant responsiveness/engagement, and (5) Program differentiation (Carol we al., 2007, p.2). PeopleBench worked with the evaluation team to develop initial thresholds for each key component (KC) and intervention (Appendix J.2.i). For example, we expect at least 80 percent of district Principals to attend 3 of 4, 90-minute PLC sessions to meet acceptable implementation standards. Similarly, we expect at least 80 percent of Principals to complete 4 of 6, 60-minute learning modules each year. The thresholds presented in Appendix J.5 are initial thresholds, which we expect will increase given feedback from the implementation study. The fidelity analysis will commence in Year 1, with the goal of identifying and mitigating potential variations in program delivery that could impact outcomes. All implementation fidelity data are collected and stored in the PeopleBench platform, and the researchers will be given their own login to have direct data access.