

**Teaching Academies**

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## Significance

Building on 30 years of experience driving educational improvement in the Boston Public Schools (BPS), BPE (formerly the Boston Plan for Excellence) is pleased to apply to the i3 Development competition under **Absolute Priority #2 (a), Improving Low-Performing Schools: Changing elements of the school's organizational design to improve instruction by differentiating staff roles and extending and enhancing instructional time**, using the evidence standard of **strong theory**. We propose to develop an innovative PreK-12 pathway of Teaching Academies to serve as a replicable model for improving low-performing schools.

BPE's mission is to *drive exceptional outcomes for all students by developing great teachers and great schools*. Throughout our history, we have focused on fulfilling a basic promise of our democracy: that every child should have access to a free, quality public education. For 11 years, the Boston Teacher Residency (BTR), a program of BPE and BPS, has worked to improve the most important school-based factor in educational inequity: quality teachers (Rivkin et al., 2005; Wright et al., 1997). BTR's groundbreaking model, praised by President Obama (White House, 2009), moves teacher preparation from the college classroom to the K-12 school. We have prepared over 500 BPS teachers and serve as BPS's single-largest pipeline of new teachers; over one in five BPS new hires in recent years has been a BTR graduate. See Appendix C for results.

**Meeting a National Need.** On the 2013 NAEP test, just 36% of urban fourth graders achieved proficiency in math, and 30% met this benchmark in reading. The black-white achievement gap persists at over 25 points (on the 500-point scale) in both subjects (U.S. Department of Education, 2014). 58% of BPS schools are "low performing" (Level 3-5) as defined by the state. The quality of education is a powerful driver of a child's life chances, but the disparities in school quality that exist between schools in Boston, and in many cities, are

significant, persistent, and shameful. BTR has demonstrated a model for supporting the human capital needs of the hardest-to-staff schools. It has also taught us a sobering lesson: while great teachers are absolutely *necessary* to achieve transformative results at scale, they are not *sufficient*. The challenge of improving urban schools has been framed too narrowly around ensuring access to high quality individual teachers. We are not going to support all children to achieve at high levels by preparing one super-teacher at a time. Extensive research, most notably by Dr. Anthony Bryk in his book *Organizing Schools for Improvement*, confirms that for educators to dramatically improve student learning, they must have coherent systems which align curriculum, instructional practices, materials, assessment, professional development, and use of time. In his study of 300 Chicago elementary schools, Bryk concludes that while no single element has sufficient impact on improved student learning, the elements in combination are correlated with significant effects (Bryk et al., 2010). See Appendix D. Hassrick et al., conclude that the low rate of third grade reading proficiency "is not a problem that a collection of independently operating teachers can solve no matter how motivated they are." The authors claim that it "is an extraordinarily challenging engineering problem" which demands a "sustained, collaborative effort and a school-wide instructional system" (Hassrick et al., 2011).

**Need for Specialization and Coordination of Educator Roles.** Students need a great deal from teachers, and we ask teachers to be expert at everything. We do not staff hospitals only with general practitioners and expect them to meet every patient's medical needs. Rather, the hospital *system* coordinates the efforts of specialized professionals to serve patients. Similarly, we need to transition the way schools are structured to leverage the various skills and expertise of all the adults in the school community in a coordinated manner centered around student learning. This project shifts the unit of change from individual teachers to a system of teaching.

**Advancing the Field with a Novel Approach.** We will generate and evaluate a solution to one of the most persistent educational challenges of our time – significant achievement gaps for students in low-performing schools. BPE has embarked on a strategy to create *a network of neighborhood-based, PreK-12 Teaching Academies: schools which provide access to ambitious teaching to drive high levels of student achievement and serve as a rich training ground for new teachers.* We are creating the Teaching Academy model to redesign how human capital is organized, deployed, and continuously improved in service of student learning.

Teaching Academies are modeled after the best teaching hospitals, which provide exemplary care for patients and a premier training ground for new doctors. In our model teacher preparation and school improvement are mutually beneficial and reinforcing. Teaching Academies run counter to the dominant system of teacher training, which separates the college from the K-12 school, separates theory and practice, and results in a pre-service system that can detract from student learning efforts at placement schools. Like hospitals, Teaching Academies provide specialized roles for pre-service teachers, called "residents," which advance the mission of the school while equipping residents with essential professional skills. Residents are integrated into the life of the school from day one so that they make significant contributions to students.

Just as teaching hospitals rely on coordinated teams of professionals with differentiated roles—nurses, supervisors, interns, residents, and attending physicians—Teaching Academies are structured around teams of individuals with different expertise and experience levels who work and learn together to ensure outstanding outcomes for all students. The best teaching hospitals have structures for coordination that allow these teams to maximize time and improve outcomes. Applying that approach to schools necessitates differentiated, integrated roles and new structures to maximize instructional time and the impact of all adults in the school community.

**Improving Low-Performing Schools.** In 2012, BPE worked with a powerful community organization (the Dudley Street Neighborhood Initiative), to launch the first Teaching Academy, the Dudley Street Neighborhood Charter School, reopening a PreK-5 BPS school closed for underperformance. Recently, BPS's Superintendent asked BPE to manage the Dearborn School, a chronically underperforming secondary school in the same neighborhood, beginning in September, 2015. BPE Teaching Academies are state-designated "Horace Mann" *in-district* charter schools; each constitutes its own LEA while remaining a part of the sending district, BPS. As an integral part of the BPS and state school reform strategies, in-district charters are designed to serve Boston by: (1) restarting low-performing schools to transform the educational quality available to underserved families; and (2) innovating and sharing practices in the district.

Teaching Academies serve high-need students in Boston's Circle of Promise, which has a high concentration of low-performing schools. The chart below demonstrates the demographics and achievement rates at the two turnaround schools and the two Teaching Academies.

School	Emerson	Dudley Lower	Dearborn	Dudley Upper
<b>Status</b>	Closed for under-performance	Teaching Academy, reopening of Emerson	MA Level 4 (Turnaround)	Planned Teaching Academy, restart of Dearborn
<b>Number of Students</b>	250	177, SY13-14 325, SY16-17	258	675 at full size
<b>Grade Levels</b>	PK-5	PK-2, SY13-14 PK-5, SY16-17	6-9	6-11, SY15-16 6-12, SY16-17
<b>% Proficient/Advanced in Reading / ELA</b>	15% (2011 MCAS)	72% (2014 STEP)*	35% (2013 MCAS)	n/a
<b>% Proficient/Advanced in Math</b>	16% (2011 MCAS)	68% (2014 AMC)*	24% (2013 MCAS)	n/a
<b>% Free/Reduced Lunch</b>	94%	81%	86%	Est.: 85%
<b>% African American or Latino</b>	94%	97%	91%	Est.: 90%
*Dudley does not yet have students in MCAS-tested grades; other standardized tests are used.				

**Theory of Action.** *If Teaching Academies create differentiated, specialized staff roles and coordinate them in an instructional system focused on student achievement, then we will be able to maximize existing and additional time to provide **ambitious instruction** to every student. We define ambitious instruction as "rigorous instruction that consistently engages all students." This will result in significantly improved achievement and college and career readiness for high-need students.* To ensure a world-class education for all students, we must establish a successful, replicable model which redesigns the fundamentals of schooling—staff, structures, and time—around student learning for the 21<sup>st</sup> century. See Appendix D for evidence of strong theory.

**Expected Impact and Outcomes.** The goals of our four-year project are to: (1) Transform low-performing schools into a PreK-12 pathway of Teaching Academies which use innovative staffing and scheduling strategies to achieve ambitious student learning goals; (2) Train 120 new, highly-effective teachers within Teaching Academies; and (3) Research, document, and disseminate a model that holds great promise for the future of both teacher preparation and successful urban schooling. By 2018, Teaching Academies will be serving 1,000 students and training 40 teachers per year. In addition to studying the impact of the Teaching Academy model on student achievement using a rigorous research design, the project aims to achieve specific and measurable student achievement and teacher effectiveness targets. See Project Design.

**Feasibility of National Expansion.** Teaching Academies are an innovative and replicable approach to improving student achievement in low-performing schools nationwide. Importantly, the Teaching Academy model repurposes existing resources in urban districts: pre-service teachers from local teacher preparation programs, teachers with varying skills and levels of experience, instructional coaches, professional development providers, nonprofit partners, and AmeriCorps programs such as City Year working to support their schools. Too often, these

resources are not coordinated or used strategically, and the existing structures of schools and adult roles make it difficult to maximize these resources to advance student achievement. We will remove this barrier and document and disseminate the model to pave the way for replication.

BPE is well-positioned to scale success through dissemination and has a track record of doing so. In response to requests to replicate BTR in other cities, we collaborated with the Boettcher Teacher Residency and the Academy for Urban School Leadership to launch Urban Teacher Residency United (UTRU). UTRU supports the development of residency programs and disseminates the best practices of BTR and other programs. In the last decade, with our support, over 20 residency programs have been established nationwide, and many traditional teacher preparation programs are shifting to a clinical model. The federal Teacher Quality Partnership program was created to replicate residency programs showing early success, including ours.

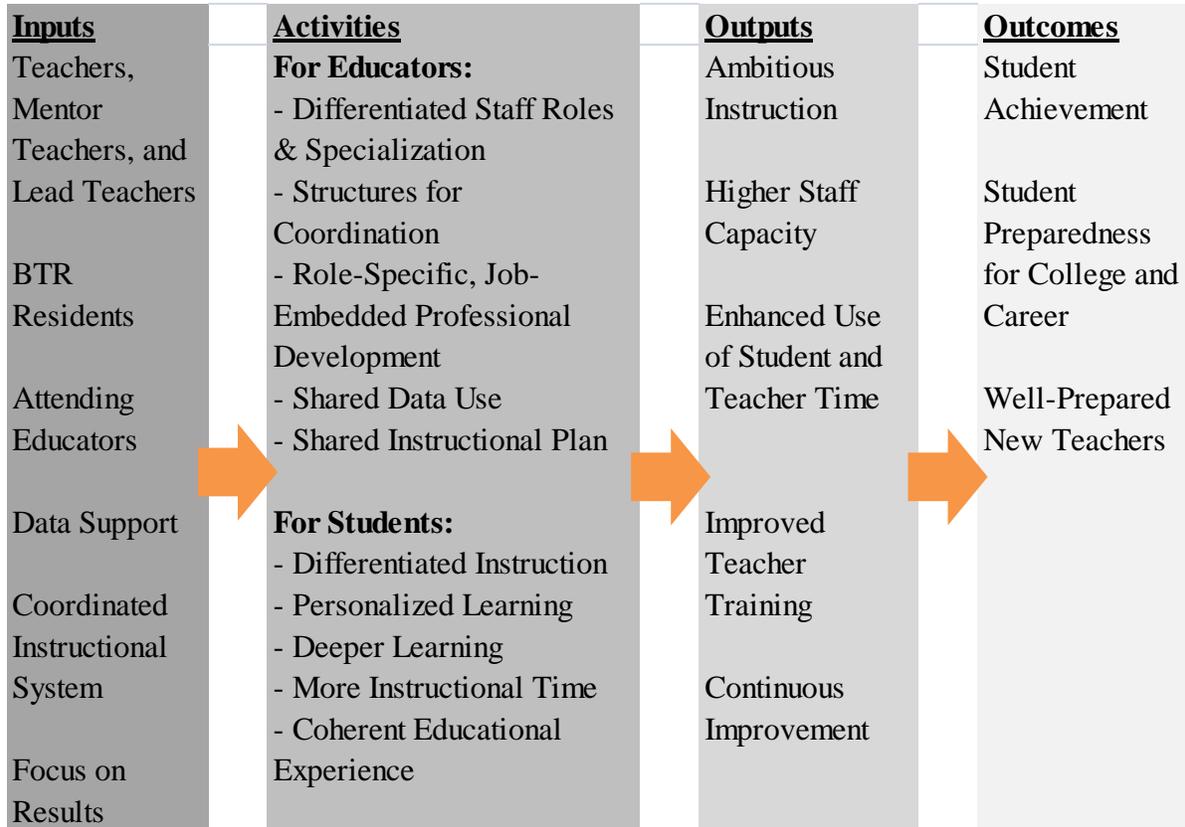
**Record of Improving Student Achievement.** In the school's first two years, the first class of students at the Dudley Street School increased their rate of grade-level reading proficiency from 14% when they joined us for the start of first grade to 56% at the end of second grade, with another 14% just one "step" behind according to UChicago's STEP assessment. 72% of Dudley Street School students are now reading on grade level, and 79% of students made at least one year of growth in SY 2013-14. These gains are significant when considering the fact that just one in three BPS third graders score Proficient/Advanced on the English language arts MCAS test. See Appendix C for detailed results from the Dudley Street School and BTR.

### **Project Design**

**Goals.** Teaching Academies break free from the traditional structural constraints in order to accelerate and deepen student learning. Our goals are to: (1) Transform low-performing schools into a PreK-12 Pathway of Teaching Academies which use innovative staffing and scheduling

strategies to achieve ambitious student learning goals. (2) Train 120 new, highly-effective teachers for BPS within the Academies. (3) Research, document, and disseminate a model that holds great promise for the future of both teacher preparation and urban schooling.

The logic model below illustrates the Teaching Academy model. If we carry out the activities and meet the performance targets that follow, we will determine the project successful.



**Goal 1: Transform low-performing schools.** Our objective is for all students to achieve high levels of preparedness for career and college. Our performance targets are: (1) At least 85% of students at the lower school read, write, and do math at grade level. (2) An increasing portion of students at the upper school, beginning at 70%, make one year of growth each year in math and English language arts.

**Transforming Schools Activity 1: Differentiated and Specialized Staff Roles.** We employ flexible staffing and student grouping that maximizes teacher expertise and use of time to ensure

that the *right* teachers teach the *right* students the *right* content and skills, at the *right* time. This leads to higher staff capacity and ambitious instruction in every classroom.

Teaching Academy staff are organized in teams in which every member is responsible for the success of all students. These teams include the following roles: **Attending Educators** ensure strategic, coherent delivery of quality instruction in a specific content area school-wide by all adults. They lead targeted professional development for teachers and residents. This role merges the roles of instructional coach, director of instruction, and clinical teacher educator to join student achievement and teacher preparation goals. **Attending Educators for Special Populations** guide and track the progress of students with special needs and English language learners and develop the ability of staff to effectively serve these students. **Lead Teachers** teach students and lead grade-level teams' efforts to ensure that every student is achieving proficiency. **Mentor Teachers**, who may also be Lead Teachers, teach students and mentor residents. They are skilled, experienced teachers who have demonstrated the ability to raise student achievement and to mentor novice teachers. **Teachers** have full responsibility for students but do not yet mentor residents. Teachers have demonstrated an early ability to raise student achievement but are considered in the induction phase of their career. **Principals** provide instructional leadership, align resources strategically, and ensure coherence among instructional, operational, and student support staff. **BTR Residents** take on increasing responsibility throughout the year, providing additional support to both students and teachers. **Expanded Learning Time (ELT) Corps Members** arrive late morning and serve through the afternoon to ensure coherence between the academic and extended day. ELT corps members, who are largely from the community, are full-time AmeriCorps members building professional and service-leadership skills. They lead extended day programs, promote student engagement, and tutor high-need students.

**Instructional Coherence.** Teaching Academies use a teamed approach with public practice. The key to differentiated staffing is that each adult is trained and organized to carry out a part of an instructional guidance system (IGS). The IGS which Bryk et al. (2010) linked with gains in student learning is a coordinated set of explicit goals, content, tools, and practices for ambitious teaching. Key elements include a commitment to teaching for understanding, common language, a common and ambitious curriculum, common high-leverage instructional practices and routines, learning tasks and assessments designed to provide feedback to inform instruction, strategic use of time, and targeted professional development. Student achievement depends heavily on the coherence and instructional management of schools; "The practices and routines of instruction [must be] shared, rather than being purely matters of individual choice" (Bryk et al., 2010).

The IGS is a mechanism to coordinate staff, time, and other resources to ensure that students are on course for college and career. Differentiated teams make data-based decisions about student and teacher learning. Students and families understand expectations and are engaged in working towards student learning goals. The system reduces variability from classroom to classroom, provides a common language and framework about student learning, and ensures shared accountability for results. It also leads to more efficient use of time by matching students with adults strategically, and improving instruction across the school.

**Increased Adult-Student Ratio.** Teaching Academies take advantage of the additional trained and organized adults to enable differentiated instruction, small group instruction, one-to-one support during and beyond class time, and a healthy school climate and culture.

**Differentiated Instruction and Personalized Learning.** Teaching Academies track and support every unique learner to reach ambitious goals. We implement a **competency-based delivery model**, with a learning plan for each student which builds on individual strengths and

maps the pathway to postsecondary success. The schools are flexible with time, people, and technology so that students can be matched with the resource they need when they need it.

Our differentiated and specialized staffing model, along with regular analysis of data, makes it possible to truly personalize learning for students. Our classes serve students in an inclusive environment that allows for mixed ability grouping and strategic team instruction, to ensure high levels of differentiation. For example, reading block occurs at a consistent time throughout the building and is delivered using common practices in every classroom, allowing students to be grouped strategically according their literacy needs and teacher expertise. If a group of students are struggling to multiply fractions, for example, and one teacher is particularly expert at teaching this skill, the students can work with that teacher. In our inclusion model, teams of dual-certified and specialized teachers collaborate to ensure that instruction for special needs students and English language learners is appropriately differentiated in the least restrictive classroom environment. Under the direction of teachers, residents and ELT corps members provide additional support so that all learners can meet our high expectations.

**Teacher Collaboration and Improvement.** Our model provides teachers with the tools, supports, and resources to drive student learning. Teaching Academies are schools where practices are tested, studied, and improved upon. Instructional staff work together to continuously determine what is working and what needs improvement, and establish a shared instructional plan. Collaboration and job-embedded professional development are key elements of the IGS and are supported by the Attending Educators and Lead Teachers. Like their students, all teachers pursue individualized learning plans informed by data.

**Deeper Learning.** Our work is grounded in common principles of instruction: (1) Teachers must know students as individuals and as learners. (2) Students are sense makers. (3) Teachers

must design instruction for *all* students to do complex thinking and work. (4) High cognitive demand teaching requires knowledge of content and of how students learn and interact with content. (5) The measure of good teaching is student learning. Student learning gains are greatest in classrooms in which instructional tasks consistently encourage high-level student thinking and reasoning, and least in classrooms in which instructional tasks are consistently procedural in nature (Silver et al., 1995). Teachers need to elicit, assess, and respond to student thinking. Thus, student understanding, academic discourse, and writing are at the core of our work.

Furthermore, students regularly engage in authentic, project-based, hands-on learning within and beyond the school walls. We engage local employers to provide workplace learning opportunities for secondary students. This approach builds students' capacity to collaborate, innovate, and apply academic skills and concepts to real world problems (Organisation for Economic Cooperation and Development, 2010; Symonds et al., 2011). To prepare students for college and career, we integrate our Common Core-aligned curriculum with 21<sup>st</sup> skills including creativity, critical thinking, problem solving, communication, and collaboration.

***Transforming Schools Activity 2: Enhanced and Extended Time.*** Teaching Academies create a smarter, more effective schedule for children and adults.

Enhanced use of student time. The use of *more adults* (matched appropriately with students to maximize resources), along with *an instructional system* (featuring coherent, consistent, quality instruction), and *targeted instruction* (informed by timely analysis), ensures that a student's time in school is maximized for rigorous and relevant learning. The fluidity of our competency-based delivery model, wherein the schedule and student grouping are flexible, enables students to spend extra time on content until they master it. All students apply new knowledge to authentic tasks; high school students participate in work-based learning.

Extended time. Students participate in a nine-hour school day and have the option to attend 20 days of summer school. Both strategies have proven effective in schools serving students who are performing below grade level (Chenoweth, K. 2007; Mass 2020, 2005). The 90-minute extended day block, including academic and non-academic activities, is driven by the ELT corps.

Better use of teacher time. Staff work staggered schedules to ensure that students are always working with trained adults. This reduces teacher burnout and conserves resources. For example, ELT corps members provide high quality afternoon programming while teachers focus on data-informed instructional planning. Students are matched strategically with adults who can meet their learning needs while educators engage in work matched to their skill level. We place a premium on ensuring that teachers have adequate time to collaborate, review assessment data, refine lesson planning, and address problems of practice. Each school year begins with a summer institute, and there is one day scheduled for data review and targeted professional development after each formative assessment cycle. Teachers and residents are also released for three hours per week for team level work, as well as two hours per week for whole-school work. During these time blocks, students work with other adults (other teachers, ELT corps members, or mentors at workplace apprenticeships). Finally, professional learning is structured into the Teaching Academy design. Residents and novice teachers are routinely exposed to strong teachers. The job descriptions of senior faculty include mentoring residents and novice teachers.

***Transforming Schools Activity 3: Data Systems and Continuous Improvement.*** A central feature of Teaching Academies is systemized data use that informs the use of people and time so that teachers have clear and regular ways to use resources and adapt practices in order to improve. BPE is a leader in school data use; on a recent survey, 91% of educators evaluated their partnership with BPE's Data Services team as effective or highly effective. A BPE data analyst

keeps all data in a centralized system which is utilized by all Teaching Academy staff. Our assessment system enables schools to check for understanding daily, monitor progress toward goals, diagnose learning challenges, evaluate interventions, plan instruction, engage students and families, and inform professional development. As a result, Teaching Academy staff see results quickly and make data-based decisions about changes in student grouping, scheduling, and pedagogy. Empowered with specific information about students' learning targets, parents can also support their children to succeed and ELT corps members can tailor extended learning time activities to student needs. See Management Plan and Project Evaluation for more information on continuous improvement and evaluation of implementation and outcomes.

**Goal 2: Train 120 new, highly-effective teachers.** Our performance targets are as follows:

(1) Prepare 40 new teachers per year, half of whom are people of color (120 total over three years). (2) 100% of i3-supported BTR graduates demonstrate the ability to teach effectively, as evidenced by high-stakes performance assessments and student achievement data. (3) At least 90% of novice BTR graduates will be rated Proficient or Exemplary on the summative rating under the state's educator evaluation system, which incorporates student achievement.

***Teacher Preparation Activity 1: Improved Teacher Training.*** BTR residents work with mentor teachers every day for an entire school year and complete thirteen months of masters-level coursework. All residents commit to teach in Boston for three years after graduation, and many work together in schools, forming a critical mass of like-minded professionals committed to better outcomes for students. Residents earn an Initial Teacher License in their primary content area, credit toward licensure in special education and ESL (with the option of completing the license in the following year), and a Master's in Education. Teaching Academies promote collaboration, evidence-based decision-making, and other practices that are crucial to student

learning (Gallimore, et al., 2009). In Teaching Academies, residents learn not just from one mentor teacher but from the school-wide practices that drive improvement. They acquire the theory, skills, and habits of continuous learning to enact ambitious teaching practices effectively from the moment they become teachers of record in other BPS schools.

**Measuring Resident Effectiveness.** We have analyzed the key practices and outcomes of great teachers, created action-oriented and normed rubrics for planning, teaching, and assessing, tied all coursework and coaching to the rubrics, and established high-stakes performance assessments to measure residents' ability to enact key practices and produce key outcomes. The program is designed to ensure that every graduate meets our quality standards; if a resident fails to demonstrate competence, s/he does not continue in the program.

**Integration of Theory and Practice.** One of the greatest strengths of Teaching Academies for the goal of high-quality teacher preparation is the tight coherence and alignment of theory and practice. We have combined two former residency job roles (course instructor and site director) and one former school role (director of instruction) into one, called the Attending Educator (AE). AEs direct the work of school-based content teams, and also teach resident methods courses and provide school-based coaching to residents. They develop residents' skills within the context of the work of the school and enable an alignment of coursework and practicum. Courses draw on residents' daily work along with the history and theory behind relevant practices. In a typical learning cycle, the resident learns about a particular practice from the AE, observes her mentor enacting it, plans a lesson utilizing the practice, rehearses it and collects feedback, executes it in the classroom, analyzes what students learned, and debriefs with the mentor and/or AE. Through coursework and field-based activities, residents learn to be both "assessment literate and data wise." We support residents to: (a) Access and analyze assessment

data for diverse learners; (b) Use data to plan and adapt instruction; and (c) Share data effectively to improve decision-making. Residents collect and analyze data throughout the year as they learn to take an evidence-based approach to teaching.

***Teacher Preparation Activity 2: Resident Contributions to Student Learning.*** In a Teaching Academy, residents are part of the human capital solution, serving critical roles for academic improvement. They help to provide differentiated instruction, individual support, and small group support for students. They learn and lead the school's common instructional practices. They track and analyze student work with teachers and seek to understand whether students achieved the instructional objectives. Over the year, they increasingly help teachers with planning, teaching, and assessing, expanding staff capacity to ensure every lesson is high quality and meets the needs of every student.

***Teacher Preparation Activity 3: Continuous Improvement.*** We collect data on new teachers throughout the process, from recruitment through preparation, placement, induction, and retention. We track effectiveness through performance assessments for residents as well as external evaluations of graduates and feed learnings back into our program. Much of what we learned in the past decade led us to design the model proposed here. See Appendix C for results.

**Goal 3: Research, document, and disseminate.** Our objective is to document and disseminate lessons learned about how to use innovative staffing and scheduling strategies to drive change in low-performing schools. We will commission external evaluations on both outcomes and implementation, and make their reports widely available. We will also create a practitioner-friendly version of the reports which details the design components of the Teaching Academy model. BPE has a strong history of dissemination. Over the last two years, we have presented at 35 national conferences, hosted twenty learning visits from other organizations,

participated in several networks (including UTRU, 100Kin10, and the Core Practices Consortium), ran two networks (Boston Teacher Residency Partnership and Boston School Data Network), and shared our learnings widely in print and electronic form. We disseminate ambitious teaching practices across BPS as BTR graduates are hired by other schools (at a placement rate of over 90%). The doors to our schools are always open; we invite education leaders to observe and learn from the work in action. We also plan to disseminate our learning from this project free of charge through the reports, presentations at national conferences, network meetings, a BTR graduate symposium, newsletters, and i3 communities of practice.

**Compliance.** We will adhere to all regulations in the Elementary and Secondary Education Act, Individuals with Disabilities in Education Act, Rehabilitation Act of 1973, Americans with Disabilities Act, and all other applicable legislation. We prohibit all discrimination.

**Risks and Mitigation Strategies.** First, this project radically changes the roles of "teacher," "student teacher," "director of instruction," and "instructional coach." We plan to reorganize the work of these individuals and shift the expectations and habits of educators. It is difficult work, but we have a track record of implementing these shifts, both at the lower school and with BTR mentor teachers. Second, BTR graduates could struggle to replicate best practices in less coherent school environments. However, we provide induction support, and an increasing number of BPS schools are autonomous (32% today) and/or have many BTR graduates (who now make up nearly 10% of BPS's teaching force) on staff. In particular, turnaround schools are hiring graduates at high rates (See Appendix C) to help improve schools. In addition, many classrooms have a second adult (a paraprofessional, pre-service teacher, special education or reading specialist, or volunteer). The ability to make the best possible use of every adult in the classroom is a key teaching skill, even in the most traditional of schools.

Third, the project may be viewed by potential replication sites as resource-intensive and unsustainable. However, while the start-up and research phase of the work requires additional resources, the implementation phase should not. Many schools already have teachers, pre-service teachers, directors of instruction, instructional coaches, volunteers, and a cadre of partners running various programs. However, these staff and partners typically are not organized into a coherent system; most schools are patchworks of uncoordinated individuals from a variety of organizations. And, most schools have veteran teachers doing work that more junior staff could do, which would free up teachers to do higher-level work and provide critical learning experiences for more junior staff.

### Management Plan and Personnel

**Timeline, Activities, Responsibilities, and Milestones.** The chart below summarizes the project timeline, activities, responsibilities, and milestones. Metrics and performance targets are listed in Project Design. If awarded the grant, we look forward to submitting a more detailed management plan within 100 days of the award.

<b>Period</b>	<b>Activities</b> See detail in Project Design and Project Evaluation.	<b>Responsibilities</b> See detail in budget narrative.	<b>Milestones</b> See detail in Project Design, Evaluation.
<b>Goal 1: Transform Schools</b>			
Planning Period	<ul style="list-style-type: none"> <li>- Complete plan for secondary school as well as expansion of elementary school to serve grades four and five.</li> <li>- Develop data system and operations plan for secondary school.</li> <li>- Analyze student data to plan curriculum and instruction.</li> <li>- Hire staff.</li> <li>- Recruit and select ELT members.</li> <li>- Recruit neighborhood students.</li> </ul> (Note: Some planning activities are repeated annually.)	Chief Program Officer (CPO), Principals, Attending Educators (AEs), Director of Strategic Data Services, Director of Operations	700 students enrolled (75% FRPL) and staff hired. Final secondary school plan approved by the State. Instructional roles are differentiated and clear.
SY 2015-16	- Expand schools and instructional	CPO, Principals,	Serve 700

	<p>systems within them to serve 4<sup>th</sup> and 11<sup>th</sup> grades.</p> <ul style="list-style-type: none"> <li>- Enact differentiated and specialized staff roles.</li> <li>- Enhance and extend instructional time.</li> <li>- Implement data systems and continuous improvement.</li> </ul>	with support from AEs, Teachers, BTR Residents, ELT Members, and Manager of Strategic Data Services	students in PK-4, 6-11. Student achievement goals are met.
SY 2016-17	<ul style="list-style-type: none"> <li>- Expand schools and instructional systems within them to serve 5<sup>th</sup> and 12<sup>th</sup> grades, completing PK-12 pathway.</li> <li>- Enact differentiated and specialized staff roles.</li> <li>- Enhance and extend instructional time.</li> <li>- Implement data systems and continuous improvement.</li> </ul>	CPO, Principals, with support from AEs, Teachers, BTR Residents, ELT Members, and Manager of Strategic Data Services	Serve 1,000 students in PK-12. Student achievement goals are met.
SY 2017-18	<ul style="list-style-type: none"> <li>- Enact differentiated and specialized staff roles.</li> <li>- Enhance and extend instructional time.</li> <li>- Implement data systems and continuous improvement.</li> </ul>	CPO and school Principals, with support from AEs, Teachers, BTR Residents, ELT Members, and Manager of Strategic Data Services	Serve 1,000 students in PK-12. Student achievement goals are met.
<b>Goal 2: Prepare Teachers</b>			
Planning Period	<ul style="list-style-type: none"> <li>- Recruit and select BTR residents and mentor teachers.</li> <li>- Revise elements of coursework and practicum to capitalize on Teaching Academy model.</li> <li>- Document and communicate the role of a BTR resident in a Teaching Academy school.</li> </ul> <p>(Note: Some planning activities are repeated annually.)</p>	CPO, AEs	Teacher teams have a plan for both supporting resident learning and utilizing residents to advance student learning.
SY 2015-16 SY 2016-17 SY 2017-18	<ul style="list-style-type: none"> <li>- Residents prepared to teach via rigorous and integrated coursework and practicum experiences.</li> <li>- Residents play key role in classroom instruction and student support.</li> <li>- Residents assessed to ensure effectiveness.</li> </ul>	CPO, AEs (with support from Mentor Teachers)	40 residents are prepared each year. Residents contribute to student learning.
<b>Goal 3: Research and Disseminate</b>			

Planning Period	<ul style="list-style-type: none"> <li>- Contract with external evaluator.</li> <li>- Write detailed plan for documentation and evaluation.</li> <li>- Submit research plan for IRB review and approval (or to verify exempt status).</li> <li>- Design implementation measures and specify thresholds for acceptable implementation.</li> <li>- Submit research and data requests to BPS and/or Massachusetts Department of Elementary and Secondary Education.</li> </ul>	Chief Improvement Officer, with support from Research Assistant	Contract is signed. Detailed plan is written within 100 days of grant award.
SY 2015-16	<ul style="list-style-type: none"> <li>- Document and evaluate.</li> <li>- Update evaluation plan.</li> <li>- Use early results and feedback for continuous improvement.</li> </ul>	Chief Improvement Officer, with support from Research Assistant	Evaluation shows fidelity of implementation.
SY 2016-17	<ul style="list-style-type: none"> <li>- Document and evaluate.</li> <li>- Update evaluation plan.</li> <li>- Present at conferences.</li> <li>- Use results and feedback for continuous improvement.</li> </ul>	CPO, Executive Director, Chief Improvement Officer, Research Assistant	Results demonstrate we are on track to achieving our goals.
SY 2017-18	<ul style="list-style-type: none"> <li>- Document and evaluate.</li> <li>- Use results and feedback for continuous improvement.</li> <li>- Present at conferences.</li> <li>- Create and disseminate final reports detailing the model and findings of Implementation and Outcomes studies.</li> </ul>	CPO, Executive Director, Chief Advancement Officer, Chief Improvement Officer, Research Assistant	Results demonstrate we achieved our goals. Reports are disseminated nationwide.

**Past i3 Performance.** With support from a 2010 i3 grant, BPE partnered with BPS to help improve Boston's lowest performing schools. So far, we have prepared 152 high quality teachers for turnaround schools, strengthened school leadership, shifted school structures to create conditions for success, and served 6,000 students. See Appendix C for detail.

**Capacity to Implement.** As a result of multi-million dollar federal and private grants, BPE has built its capacity to implement and manage a project of this size and scope. BPE is financially stable, has met private matching requirements, and has systems which meet the

standards in 34 CFR part 74 and 2 CFR part 170. We have a track record of achieving results (See Appendix C) and sharing our work with a broad local and national network.

**Project Director, Role of Key Partners, and Qualified Personnel.** This project will be led by BPE's Chief Program Officer in close partnership with elementary and secondary school principals and a team of AEs. BPE will lead and manage the project and provide capacity around data, research, operations, and instruction. Simon Hess, BPE's Chief Program Officer, will serve as the Project Director and is the current Project Director for two large federal grants. Prior to 2011, he was the CEO of Civitas Schools, a Chicago-based charter school organization. Previously, Mr. Hess served as the principal of Gordon Tech High School in Chicago and was a BPS administrator and teacher for eight years. He holds an MEd from Harvard University and an MBA from Northwestern University. He is supervised by Executive Director Jesse Solomon, who founded BTR in 2003 after teaching in Boston for over a decade. He has led BPE since 2011. Christine Landry is the Founding Principal at the Dudley Street School and is responsible for implementing an alternative school model. She began her career as a Teach for America member in Baton Rouge. She was then a founding educator, literacy specialist, and principal at two elementary schools in Oakland. We seek to hire a similarly accomplished upper school principal. The AEs are experienced teachers, teacher leaders, and teacher educators who have a track record of advancing student and adult learning within their content area. They work as a team to adopt and refine BTR's approach and expertise within the context of Teaching Academies. See resumes in Appendix F and detailed job roles in the Budget Narrative.

**Feedback and Continuous Improvement.** BPE's Office of Improvement is charged with driving continuous improvement via innovation, better execution, and research. It collects and analyzes multiple types of formative and summative data to identify areas in need of

improvement. During the planning year, we will establish a tight feedback loop among all key stakeholders to ensure the project is implemented with fidelity and achieving desired outcomes. To evaluate successes and challenges, we will analyze interim reports from the external evaluator as well as our own data. Regular reports and working sessions between research and instructional staff as well as daily use of fine-grained data by staff will enable continuous improvement.

**Evidence of Broad Support.** BPE and the Dudley Street School have established support from stakeholders from students, parents, educators, policymakers, and funders. See Letters of Support in Appendix G. Over 700 students entered the lottery for 48 seats this spring. On our recent family survey, *all* respondents agreed that the "school is a good place to learn," that it "prepares my child for the future," and that their "child is getting a quality education at this school." During the July 16, 2014 meeting of the BPS School Committee, Superintendent McDonough communicated clear support: "We have a sense of urgency for our students at the Dearborn...By expanding our existing and successful partnership with the Dudley Street School, and harnessing the expertise within BPS, we have an opportunity." BPE has a strong fundraising track record and capacity to cultivate support from private funders. Last year, the Barr Foundation invested in BPE's strategy with a six-year, \$5M grant. BPE has also secured multi-year grants from public and private sources. Our Board of Trustees is committed to helping to raise the match needed to carry out this project, and to sustain it beyond the term of the grant.

### **Project Evaluation**

BPE will contract with an independent evaluator to assess the impact of the project on student learning as well as collect implementation data to inform program development and continuous improvement. The **Outcomes Study** will explore the following research questions:

- (1) What are the impacts of attending a Teaching Academy on student performance on the state

standardized test in math and English language arts? (2) How does student performance on standardized tests vary by students' exposure to various components of the Teaching Academy model? The **Implementation Study** will collect both qualitative and quantitative data to address the following research questions: (1) To what extent are staff enacting differentiated roles and coordinating their work in the service of students? (2) To what extent are students receiving differentiated and expanded learning opportunities? (3) What factors enable or constrain implementation of the Teaching Academy model?

**The Outcomes Study** will have two components, a randomized control trial and a descriptive (non-causal) quantitative analysis that addresses variation within our schools.

1. Evaluating Impact on Student Test Scores: To address Outcomes Study Question 1, the evaluators will use a multiple-cohort, individual-level longitudinal randomized control trial to estimate the impact of attending a Teaching Academy on student test scores. The annual admissions lotteries for our first Teaching Academy have been substantially oversubscribed (SY12-13: 280 applicants for 132 seats; SY13-14: 425 for 48 seats; SY14-15: 726 for 48 seats). We anticipate that the lotteries for the second Teaching Academy will also be oversubscribed given the high demand for high quality seats. As a Development grantee, we are most interested in estimating the impact of treatment-on-treated (TOT) rather than intent-to-treat (ITT). While all students will be included in internal data analysis for continuous improvement, only those students subject to random assignment will be included in the evaluator's outcomes study sample; those students who started attending Dearborn School prior to its conversion to a BPE Teaching Academy will not be included in this part of the Outcomes Study.

To answer Question 1, the evaluator will use two-stage least-squares regression to model the impact of attending a Teaching Academy as a function of time spent enrolled in the schools. This

involves first estimating an instrumental variables model in which the lottery outcome is an instrument of years of attendance. The first-stage equation estimates the impact of winning an admissions lottery on years spent attending a Teaching Academy. The second-stage equation estimates the impact of years of enrollment on the student test score outcomes. The analysis will include student-level covariates to improve the precision of the impact estimates, including students' prior test scores and demographic characteristics. In addition, application cohort dummy variables will be included to account for the fact that the probability of gaining a seat from the lottery varies from year to year and by admissions grade level. The models will also be fit without students' prior test scores to both test the sensitivity of results to model specifications, as well as enable the inclusion of third graders into the study sample (the first PARCC-tested grade level). Scores will be standardized to have a mean of zero and standard deviation of one within each subject-grade-year. The following chart describes the sample and effect sizes.

	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>
<b>Tested Grade Levels Admitted via Lottery</b>	4, 6	4, 5, 6, 7	4, 5, 6, 7, 8
<b>Est. Sample Size</b>	Treatment: 110* Control: 160 Total: 270	Treatment: 200 Control: 360 Total: 560	Treatment: 250 Control: 600 Total: 850
<b>Minimum Detectible Effect Size</b>	.34	.24	.19
*Treatment size assumes 30 students persisting to fourth grade at Dudley Lower, and entering classes of 80 sixth graders in the first years of Dudley Upper. It also assumes lottery participation increases as Dudley Upper establishes track record. Calculation of MDES assumes Type I error rate of .05 and power of .80.			

Given the nontrivial level of student mobility in BPS, this study may not meet the What Works Clearinghouse (WWC) standards for evidence without reservations. However, by using available data to examine the analytic sample for baseline equivalence on observable characteristics, we anticipate this study will meet WWC standards with reservations.

2. Exploring Variation in Student Test Score Outcomes within the Teaching Academies: The evaluators will use value-added analysis to explore the extent to which student learning gains vary by exposure to ambitious and well-coordinated instruction, personalized instruction that meets their needs, or extended learning time. We anticipate that the two Teaching Academies, as well as grade-level teams or departments within each school, may vary in the extent to which they are able to implement and leverage key components of the Teaching Academy model to deliver differentiated instruction and expanded learning opportunities. Students may also differ in their summer school attendance (which is optional). This supplementary analysis will utilize data from the Implementation Study as well as other data collected by the schools to explore the relationship between student test score outcomes (from both PARCC as well as other benchmark assessments that the schools administer annually for which there is adequate longitudinal data, such as the UChicago STEP reading assessment) and variation in program implementation or service delivery/take-up.

**The Implementation Study** will document and assess the extent to which BPE is able to implement the core components of the Teaching Academy model. During the planning period, evaluators will work closely with BPE leadership to further specify the core aspects of the model, develop measures of implementation fidelity, and set *a priori* thresholds for acceptable implementation. A set of measures will focus on the extent to which educators enact differentiated roles, coordinate their work, use data, and engage in role-specific professional development. Another set of measures will focus on the students' experiences, and the extent to which they receive differentiated instruction and expanded learning time. Implementation data will be collected from multiple sources (administrative records, school information systems, interviews, field observations using protocols or rubrics, teacher and student surveys). These data

will be used to compute fidelity scores that can be summed up and analyzed for each teacher, classroom team of educators, grade level team or department, and school. These scores will allow the evaluators (and BPE staff) to assess the extent to which implementation is varied across teaching teams. Fidelity scores can also be calculated for students, giving insight into the dosage of Teaching Academy elements that students are receiving.

**Resources and Qualifications of Evaluators.** Our Office of Improvement is led by school organization and teacher quality researcher Dr. Edward Liu and is advised by teacher education researcher Dr. Magdalene Lampert. Dr. Liu and an assistant will devote significant time towards this project (See Budget Narrative). We will seek to contract with an external evaluator who has experience designing and carrying out randomized control trials, mixed-methods implementation research, and evaluations of U.S. Department of Education grants.

**Performance Targets.** We will measure student achievement targets (See Project Design) using standardized assessments, including PARCC in relevant grades and content areas, and UChicago's STEP assessment system for early literacy. We will measure teacher quality using BTR's performance assessment rubric for residents and the new Massachusetts teacher evaluation system, both of which include evidence of student learning. In addition, we will pay close attention to the i3 performance measures by ensuring that the project is implemented with fidelity, provides evidence of promise for improving student outcomes (through the Outcomes Study), provides high-quality implementation data describing the key elements of the project, and achieves a cost per student of less than \$900 at the end of the grant period. The evaluators will provide BPE with annual interim reports to inform program refinement and improvement.

This project evaluation will help us understand the impact of Teaching Academies on improving low-performing schools, which we believe will contribute significantly to the field.