

Reading Recovery: Scaling Up What Works

The Ohio State University

Project Narrative

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A. Need for the Project and Quality of the Project Design

Reading Recovery is a targeted approach to school reform focusing on first grade students experiencing the greatest difficulty learning to read and write, typically the lowest 20% of the class. Our project addresses Absolute Priority 4: Innovations that Turn Around Persistently Low-Performing Schools with priorities given to the unique learning needs of students with disabilities and limited English proficient students (Competitive Preference Priority 7) and rural schools (Competitive Preference Priority 8). The overarching goal of this proposal is intensive, long-term professional development for teachers who will provide one-to-one, short-term, 30-minute lessons each day with first graders to accelerate their learning such that they catch up with their peers and close the achievement gap.

The innovation, Reading Recovery, has gone through a 25-year period of development and validation, producing the largest impacts on student reading skills of any intervention reviewed by the What Works Clearinghouse, making it one of the most promising reading interventions for scale up. Although Reading Recovery has over 20 years of experience working with struggling readers across the U.S., this proposal offers a unique and innovative opportunity to specifically target high-need schools and provide trained Reading Recovery teachers for students in the lowest-achieving schools. In this section, we discuss the need for Reading Recovery and describe the quality of the project design.

- **Objective 1:** Train 15 new teacher leaders in Year 1 to serve underrepresented areas of the U.S. with a high population of schools meeting the criteria for Absolute Priority 4. The teacher leaders will train new Reading Recovery teachers in Years 2-5.

- **Objective 2:** Train 750 new Reading Recovery teachers each year for a total of 3,750 teachers.
- **Objective 3:** Trained Reading Recovery teachers will work with more than 90,000 Reading Recovery students (.5 FTE) and over 400,000 students in classrooms or Title I small group instruction during the other half of their day for a total of nearly 500,000 students.
- **Objective 4:** Conduct a rigorous outside project evaluation including both experimental and qualitative methodologies.
- **Objective 5:** Provide high-quality oversight for the project orchestrating activities across the 16 universities.

The partnership described in this proposal includes 15 universities with Reading Recovery Training Centers and the districts and schools in 40 states within their current networks. Together, we will train 15 new Teacher Leaders and 3,750 new Reading Recovery teachers across the U.S. who will work with approximately 90,000 first graders struggling to learn to read and write over the course of the five-year grant. In the other half of their day, the trained Reading Recovery teachers will work with over 400,000 students, usually in either classroom or small group settings. This existing partnership between universities and school districts is uniquely positioned to immediately scale-up Reading Recovery quickly and efficiently. University of Pennsylvania is the 16th partner and will be conducting the outside evaluation.

Need for Reading Recovery

Low performing students do not suddenly fall behind their classmates when they reach middle school; they have been struggling since their first day at school (Juel, 1988; Vellutino &

Scanlon 2002). Differences in achievement have been documented as early as kindergarten, and in first (Denton & West, 2002) and fourth grade (U.S. Department of Education 2001). By the time struggling readers reach middle school they have been falling behind for five or six years and they have been growing more and more discouraged.

We also know that high-needs students are over-represented in this group of struggling readers (Snow, Burns & Griffin, 1998). The most recent National Assessment of Educational Progress shows that there have been no significant changes in any achievement gap, including those gaps along race/ethnicity and gender lines, and gaps by type of school (Vanneman, Hamilton, Baldwin, Anderson, & Rahman, 2009).

Reading Recovery presents an innovative approach to tackling the problem of struggling readers in that it targets the problem early on, in first grade, when reading problems first become apparent. The goal of the intervention is to take struggling readers at the onset of difficulty and bring them to average levels of reading performance within a 20-week lesson framework. By addressing the problem early we dramatically increase the odds that young students who are struggling in first grade will be average readers in later grades (see Juel, 1988).

Evaluation data show the impact of intervening early with Reading Recovery. In the 2008-2009 national report (McGee, 2010), data were disaggregated to compare the progress of Reading Recovery students who entered the intervention in the fall to three other groups: a random sample of first grade students, an equivalent comparison group of first grade students who did not receive Reading Recovery but were assessed as equally low readers in the fall, and students who entered Reading Recovery in the middle of the year.

As displayed in Figure 1, students selected for Reading Recovery in the fall initially scored well below the random sample of first grade students on a text reading measure, but at a comparable level to the equivalent comparison group of equally low readers. At midyear, however, the fall Reading Recovery students had caught up to the random sample, while the equivalent comparison group not taught by Reading Recovery had fallen further behind their peers.

Students who started their Reading Recovery intervention mid-year made slow progress during the first half of the year while they waited for their turn in the intervention. By the end of the year, however, those students who started in mid-year caught up to the cohort of Reading Recovery students taught first and with the random sample never taught by Reading Recovery. By contrast, the equivalent comparison group of low performing students who never received Reading Recovery made some progress by the end of the year, but they were still far behind their peers (McGee, 2010).

National Reading Recovery evaluation data were also examined to determine the relationship of economic status, race/ethnicity, and early intervention in predicting end-of-first-grade reading achievement (Rodgers, Gómez-Bellengé, & Wang, 2004; Rodgers, Gómez-Bellengé, Wang, & Schulz, 2005). These studies demonstrated that the Reading Recovery intervention is effective across race/ethnic and socio-economic groups and that access to the Reading Recovery intervention reduces the achievement gap among these groups. Regression procedures indicated that the strongest predictor of literacy success in first grade was access to the Reading Recovery intervention. The regression model included economic status as a predictor variable, but race did not contribute to the prediction of success beyond these two main

factors. These results suggest that effective early intervention is a critical component toward providing educational opportunity for all students.

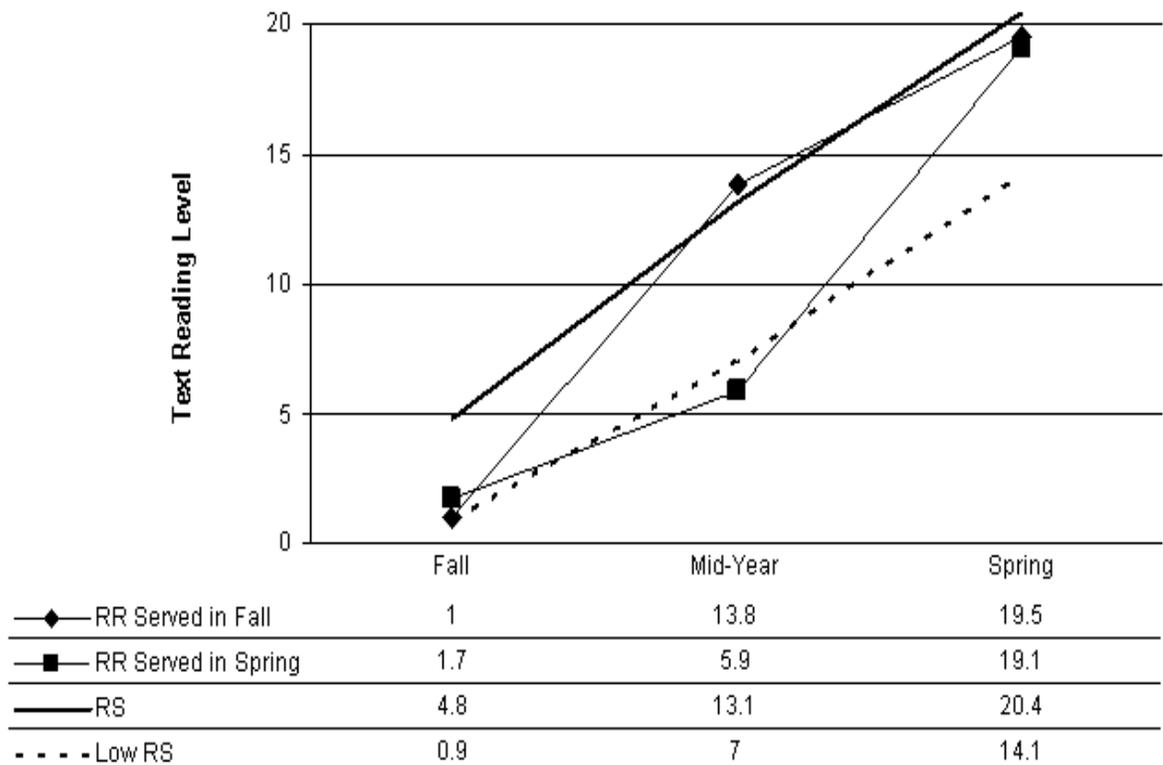


Figure 1. Progress on text level by group and timing of intervention

We cannot draw causal relationships between student progress and the intervention from these examinations of Reading Recovery’s national data set, however, the results from Pinnell, Lyons, Deford, Bryk and Seltzer’s (1994) quasi-experimental study which linked student progress to their involvement in Reading Recovery, leads us to think that Reading Recovery was responsible for the outcomes observed in the national data. These findings underscore the need for intervening early with Reading Recovery to make a difference in students’ reading progress.

What we do know is that we can expect to see an achievement gap opening as early as kindergarten between struggling readers and average performing students. We can also expect to

find that this gap will exist along race/ethnicity, economic, and language lines and that disadvantaged students will be over-represented in the population of struggling readers. It will take more than a superficial fix, such as mandating a phonics program or emphasizing direct teaching, to compensate for the differences that exist between average performing and struggling readers (Bainbridge & Lasley, 2002). An investment in Reading Recovery in which teachers receive specialized preparation and ongoing professional development in order to provide high-quality individual reading instruction to the lowest achieving children, may constitute a comprehensive response to a complex problem.

Even though Reading Recovery has been present in the U.S. educational system for some time, it is not in common use. In 2007-2008, there were 3,755,236 first grade students in the United States (Common Core of Data). If we estimate that 20% of those students were struggling readers we might expect that as many as 751,047 students needed an intensive intervention in 2007-2008 to help them catch up to their peers. By contrast, Reading Recovery reached just 82,165 struggling readers in 2007-2008 (McGee, 2010). The goal of this project is to scale up Reading Recovery so that more students, particularly high-needs students in the lowest-performing schools across the country, will have access to this validated intervention.

Quality of the Design

Four features distinguish the design of Reading Recovery:

1. A network of professional support for teachers and administrators
2. Intensive, daily, one-to-one, 30-minute lessons for children

3. An intensive professional development program through which educators learn to teach children with extreme literacy difficulties
4. A research and evaluation system maintained by the International Data Evaluation Center (IDEC) to continuously monitor results, ensure accountability, and provide information for making implementation decisions

These four features, which have evolved and were refined throughout the course of Reading Recovery's development and validation in the United States, are foundational to Reading Recovery's design. In the remainder of this section we discuss these features in detail and we describe how these features position Reading Recovery extremely well for national scale up.

Reading Recovery is a professional development partnership between universities and school districts. Literacy coaches called "teacher leaders" are prepared at the university to provide training and continuing professional development to teachers. Typically, the teachers are either classroom or Title I teachers who work half time in Reading Recovery and half time in their other role.

Reading Recovery teachers design daily individual 30-minute literacy lessons for children in first grade who are having the greatest difficulty learning to read and write. Children are engaged in writing and reading continuous text, word study, and phonics instruction. There is a standard lesson format but no teacher script. The teacher teaches and prompts the student to use the kinds of strategies that average-achieving students use while reading and writing (Clay, 2005). The goal is to accelerate each student's progress to average levels of reading and writing within 20 weeks. Researchers attribute this faster-than-usual progress to the one-to-one nature of

the instruction, the teacher's professional development, and the instructional components of the Reading Recovery lesson (Pinnell, Lyons, DeFord, Bryk & Seltzer, 1994).

As soon as students meet grade-level expectations and demonstrate that they can continue to learn in the classroom, their lessons are discontinued, and new students begin individual instruction. There are two positive outcomes for students who complete the 20-week intervention:

1. Students meet grade-level expectations in reading and writing and continue to work successfully within their classroom programs. The outcome category for "responders" (about 75% annually) is *discontinued*.
2. The remaining students still having difficulty after a complete intervention are recommended for further evaluation. The outcome category for "non-responders" (about 25% each year) is *recommended*.

Both outcomes are viewed as positive in that diagnostic information on rate of progress and key measures of outcome levels are available to inform decisions about future actions. In this way, Reading Recovery operates as a prescreening tool in schools, identifying students who respond well to early intervention and can catch up to their peers from those who need more long-term support.

Reading Recovery was first implemented in the United States in 1984. Since that time, Reading Recovery has undergone a lengthy period of development and validation in which its design has been tested and retested by various researchers and evidence for its effectiveness established. Every aspect of its design has been subjected to scrutiny including: student outcomes and subsequent performance, impact on retention and referral to special education rates, effect on

home literacy activities, outcomes for English Language Learners, impact on phonemic awareness, impact on the achievement gap, teacher learning and scaffolding within teacher-student interactions (See Schmitt et al. 2005 for a review of the literature).

The lengthy period and extensive record of developing and validating Reading Recovery before scale up is appropriate. Innovations need an extended period of time in use to be tested in order to ensure they meet rigorous feasibility and evidence requirements before scaling up is attempted (Baker, 2007).

The structure and design of Reading Recovery are consistent with a large body of research on how children learn to read and write. The instructional format is based not only on basic research about young children's reading and writing development (Clay, 1966), but also a series of studies conducted in the 1970s and 1980s that included randomized field trials, follow-up studies, replication studies, monitoring studies, and subgroup studies. Numerous other studies have subsequently examined the effectiveness of Reading Recovery for children with literacy difficulties. (See Schmitt, Askew, Fountas, Lyons & Pinnell, 2005 for a review.)

Next, we describe how these design features fit Cohen and Ball's (2007) instructional and implementation strategies for scaling up interventions. Cohen and Ball recommended that innovations offer powerful and ongoing guidance for instruction. The design of Reading Recovery represents an investment in the professional skills of teachers. It builds professional communities and has been widely praised as a model worth emulating (e.g., Herman & Stringfield, 1997). All Reading Recovery professionals—teachers, teacher leaders, and university faculty complete a full academic year of graduate, post-masters or post-doctoral study respectively. Following the initial year of coursework, educators take part in ongoing

professional development sessions which are grounded in the teaching of children, problem-solving issues of practice, and ongoing analysis and reflection on teaching.

Professional development integrates theory and practice. Because Reading Recovery depends on a teacher who can design and deliver individual lessons, the teacher must learn how to observe and record student behaviors and to make moment-by-moment teaching decisions (McEneaney, Lose, & Schwartz, 2006). The teacher must also know how to evaluate teaching decisions to determine subsequent teaching moves. This process takes a high level of skill combined with ongoing study and support from colleagues and a teacher leader.

Each regional teacher-training facility across the country is equipped with a one-way mirror. Live Reading Recovery lessons are taught behind the one-way mirror while the teachers observe, discuss, and analyze the lessons. The teacher leader guides the collaborative inquiry and challenges the teachers to observe closely, provide evidence for developing theories about the student's learning, and to suggest multiple alternative teaching moves in response to their observations of what the student can do independently and what the student needs to learn how to do. Reading Recovery teachers develop effective observational skills and a repertoire of teaching procedures designed to meet the particular needs of individual students. Observing and analyzing live lessons taught behind the one-way mirror provides teachers with a shared example of teaching and learning that they can reflect on and analyze. Teaching lessons behind the one way mirror is an integral part of the training year and continues throughout the teacher's ongoing professional development following the training.

Cohen and Ball (2007) also note that instruction, leadership and school organization may need to be reorganized if changes are to be taken up within a school district. Reading Recovery's design reorganizes the system and introduces new structures. These structures enable the district

to implement the changes and carry them forward more independently without needing continued close involvement of the university (Clay, 1994).

Regional teacher training sites. A regional teacher training site is a new entity within the educational organization; it provides the structure at a district or cross-districts level to provide professional development to the teachers. Several districts may form a consortium to support the costs related to having a teacher leader and a regional training site. The site is usually located at an already-existing professional development space within the school district that acts as the fiscal agent for the site. The training site contains a one-way mirror to observe lessons and space for teachers to have a class meeting. Each regional teacher training site is affiliated with a University Training Center.

University trainers. More than 20 Reading Recovery university training centers (UTCs) provide the organizing structure for states or regions of the country. University trainers are faculty members at the UTC who are responsible for providing initial and ongoing professional development for teacher leaders, supporting a network of Reading Recovery teacher training sites, expanding and strengthening network sites, and ensuring the integrity of Reading Recovery in the region. Two UTCs, The Ohio State University and Texas Woman's University provide the one-year post-doctoral training to prepare university faculty to establish and direct their own UTCs.

Reading Recovery teacher leaders. Teacher leaders are selected by a school district for training. The teacher leader directs the regional teacher training site. Teacher leader candidates must have a master's degree and leadership potential. The candidate attends one of the UTCs for an academic year that includes: (a) teaching four Reading Recovery students daily; (b) actively participating in graduate-level classes; (c) participating in clinical and leadership practica, as

well as seminars in reading, writing, reading difficulties, and adult learning theory; (d) participating in teacher professional development classes and fieldwork at established sites; and (e) preparing their home districts for Reading Recovery implementation. All course work is offered at the post-masters level.

After the initial year of professional development, teacher leaders return to full-time positions in their districts/sites. They continue to teach children daily in Reading Recovery, train Reading Recovery teachers, and provide leadership for site implementation. They oversee data collection on all Reading Recovery children and work with school leadership teams to improve student performance and implementation decisions based on evaluation data. For ongoing learning, teacher leaders participate in regularly scheduled professional development sessions conducted by university trainers. They attend a required national Teacher Leader Institute annually to ensure current knowledge about all aspects of their roles.

Teacher leaders provide Reading Recovery teachers with an academic year of professional development. Teachers receive graduate credit while working with four children individually on a daily basis and actively participating in weekly graduate-level classes at a university. Each teacher-in-training will receive at least four school visits by the teacher leader during the school year.

The teacher leader is a key component in the design because of that person's role in maintaining the fidelity of Reading Recovery (Clay, 1994). According to Clay, the teacher leader is the "agent of redirection" because of her/his pivotal role in redirecting learning across the system; every part of the system has to change, including the child learning, the teacher learning, the system learning, and the community learning. Clay (1994) says that teacher leaders are

redirecting systems because they “teach children, train teachers, educate the local educators, negotiate the implementation of the program, act as advocates for whatever cannot be compromised in the interests of effective results, and talk to the public and media, correcting misconceptions” (p. 127). The teacher leader, therefore, is responsible for orchestrating fundamental changes in the system, the kind of reform where things that really matter are changed, which as Fullan (1993) has noted is so critical for reform to occur.

The role of the teacher leader in redirecting the system does not diminish or take on less importance the longer Reading Recovery has been implemented. Teacher leaders play a pivotal role in ensuring that the design is not pared down by local educational stakeholders who want to implement untested changes to the design.

Reading Recovery teachers. Reading Recovery teacher candidates, most often Title I or classroom teachers, are selected by school district administrators. They must be certified teachers with a record of successful teaching experience with young children. Teachers rarely work in Reading Recovery for the entire day. They work about half the day in the Reading Recovery role and the other part of their day in the Title I or classroom teacher role. The most common combined role in 2008-2009 was Reading Recovery/Classroom teacher or Reading Recovery/Title I teacher (McGee, 2010). National data for 2008–2009 show that Reading Recovery teachers taught an average of 8.1 Reading Recovery students, plus 40.6 children in their other teaching roles (McGee, 2010). These teachers also interacted with other teachers in collaborative and leadership roles, building literacy expertise and capacity for working with struggling readers.

Site coordinators. Because Reading Recovery is a system intervention, each Reading Recovery site has a site coordinator, an administrator who is responsible for placing the innovation into an existing educational system. The role of site coordinator is a new one within the education system. Site coordinators generally are not trained in Reading Recovery, but they are familiar with all aspects of implementation. Working closely alongside Reading Recovery teacher leaders, they serve as leaders for communicating and problem solving within the regional training site. Administrators at the school level work with a school leadership team to problem solve and refine the implementation on their campuses.

Standards and guidelines. Consistent with Cohen and Ball's (2007) recommendation that new professional norms be developed to support the implementation of new instructional practices, Reading Recovery's period of development and validation in the United States has included the development of common professional standards: *Standards and Guidelines of Reading Recovery in the United States, 4th edition* (Reading Recovery Council of North America, 2004). The standards describe norms for operating a regional training site, the roles and responsibilities of teachers, teacher leaders and trainers, and site coordinators. A royalty-free license is issued annually to each regional teacher training site on the basis of following the standards. Standards and the issuance of annual site licenses ensure the internal and external fidelity of Reading Recovery implementation.

Teacher leaders and site coordinators can request a one-year exemption to a standard provided they give a rationale for the variance and include a plan for returning to the standards in the following year. This flexibility allows a feedback loop to investigate any necessary changes to the design. When changes are made to the design, it is a result of research, not pressure to pare down the design.

The design of Reading Recovery includes new educational subsystems which provide continuing technical and professional support, another implementation strategy identified by Cohen and Ball (2007). These structures have evolved over the years that Reading Recovery was being developed and validated, in response to the needs articulated by school and district stakeholders. They provide continuing professional and technical assistance to teacher leaders and site coordinators at the regional training sites.

Reading Recovery Council of North America. RRCNA is a not-for-profit association of Reading Recovery professionals, advocates, and partners. The Council provides a network of opportunities for leadership and professional development. It is an advocate for Reading Recovery throughout North America. The Council provides a wide variety of programs and services, including publications, annual conferences, advocacy, technical assistance, and special institutes. These activities strengthen the implementation of Reading Recovery and provide opportunities for Reading Recovery professionals to collaborate with early literacy advocates and other education professionals.

The International Data Evaluation Center. IDEC operates a web site to enable Reading Recovery teachers and teacher leaders to enter data and download reports and datasets that can be customized for individual schools, districts, regional training sites, university centers, or individual states. A national evaluation report is published annually. IDEC supports 22 Reading Recovery University Training Centers by providing them with standard annual reports as well as data needed to prepare custom reports or engage in research. These reports follow a standard evaluation protocol that includes information about teacher and student demographics, students' progress on standard literacy measures and their progress in relation to five national achievement groups. Data as to the length of time in the program, schools' level of implementation, and

teacher and student absenteeism and their relationship to outcomes, are also provided. The IDEC research director advises 40 university trainers and their staff on research and evaluation issues and collaborates with these universities in research efforts.

The design of Reading Recovery has evolved during its development and validation period in ways that address challenges identified by Cohen and Ball (2007). With the introduction of Reading Recovery to an educational system, new structures, new roles and new relationships are created such that each Reading Recovery teacher is connected to a teacher leader who in turn is connected to a faculty member at a university. The three-tiered structure of implementing Reading Recovery through schools, regional training sites and universities with ongoing professional development for every role, allows the intervention to be implemented with fidelity. It also allows for change to the design in that teachers and teacher leaders who are implementing the innovation can provide feedback to the university innovators who can test the changes in well-designed research projects. Teachers can work with independence at the school level because they are responsible for designing and implementing individual lessons but they are also connected to a wider network through the activities of the Reading Recovery Council of North America and the support offered by the International Data Evaluation Center.

B. Strength of Research, Significance of Effect, and Magnitude of Effect

Reading Recovery is perhaps the most widely researched early literacy intervention in the world. The program has received considerable research emphasis primarily because student assessment and evaluation have been integral program components since its inception in the 1970s. Marie Clay, the program developer, also created the Observation Survey (OS), which consists of six tasks (letter identification, word reading, concepts about print, writing vocabulary,

hearing and recording sounds in words, and text reading level) to diagnose a student's strengths and weaknesses, identify students for services, and to monitor student progress during the intervention. This intense focus on data-driven decision-making facilitated ongoing program evaluation. For more than 20 years in the United States, the International Data Evaluation Center (IDEC) in Columbus, OH, has relied on systematic, empirical methods to collect data on all children served by the intervention (about 90,000 first graders in 2008–2009). Data are also collected on a random sample of grade-level peers to provide a comparison group. Information about implementation factors is also collected to inform local decision makers. This web-based data collection system provides a highly sophisticated system for reporting and aggregating program and school measures of student performance. Besides the continuous data collection and analysis conducted by the IDEC, numerous empirically-driven RR impact studies have been performed. In an extensive meta-analysis of the program, D'Agostino and Murphy (2004) identified 36 empirically-driven impact studies of RR in the United States alone that were conducted between 1986 and 1997. Many more studies of RR that focused on producing estimates of its effectiveness have been conducted since the late 1990s.

A study must be based on a randomized design with a control group, have low attrition, and documented group equivalence to meet the highest evidence standard of the What Works Clearinghouse (WWC, 2008). To meet the evidence standard with reservations, a study can either be based on a randomized design with high attrition but documented group equivalence, or a quasi-experiment with documented group equivalence. Among the 106 RR studies reviewed by the WWC, four were identified that met their strict evidence standards, and one study met the evidence standards with reservations. Baenen et al. (1997) performed a randomized controlled trial of RR in Wake County, NC. Literacy outcomes were assessed at the end of first grade

($n=147$), second grade ($n=147$) and third grade ($n=127$) on students who had been assigned randomly to receive RR in first grade or to serve as control students. Another randomized controlled trial was conducted by Pinnell et al. (1988). The authors assigned students at random to receive RR ($n=38$) or to receive an alternate literacy program (the control condition, $n=53$) in 14 Columbus, Ohio schools. The third study that met the WWC's highest evidence standards involved the random assignment of students to RR ($n=31$) or a comparison condition ($n=48$) in eight Ohio schools (Pinnell, et al., 1994). The final study that met these WWC evidence standards was performed by Schwartz (2005), who randomly assigned students in 14 states to receive RR in the first ($n=37$) or latter ($n=37$) part of the school year. Students who received RR in the latter part of the year served as a comparison group, and program effects were estimated from midyear testing. Iverson and Tunmer (1993) implemented a quasi-experimental design involving 30 school districts in Rhode Island that met the WWC standards with reservations. RR students ($n=32$) were matched based on pretest scores with 32 comparison students who received small group support out of their classrooms.

Taken together, about 700 students in 46 schools throughout the nation participated in the five WWC studies that either met the highest evidence standards or met the evidence standards with reservations. Findings of all five studies were statistically significant and were positive for Reading Recovery. Students who participated in the studies had fall first-grade reading achievement levels that were near or below the 20th percentile, which is the targeted performance level for RR eligibility. Study participants in all likelihood adequately represented the targeted population that will take part in this scale up project—early learners in low-performing schools. Though none of the studies yielded disaggregated effects for ELL students, many study participants likely were ELL because those students are more likely to struggle with English

language skills, and thus, test in the bottom quartile of the distribution. Kelly, Gómez-Bellengé, Chen, and Schulz (2008) examined the performance of 17,792 ELL students from the RR national program evaluation data. They found only a slight difference in the outcome status success rate and performance levels between ELL and native English speakers. The length of interventions did not differ between these groups, nor was it related to rating of oral English proficiency prior to the intervention. Because RR is designed to help students with lower English proficiency, it would be highly unlikely that program effects would not generalize to ELL students.

The studies that met the WWC evidence standards with or without reservation also did not produce effect estimates by school location (urban, suburban, rural), and it is not possible to identify the exact location of schools because they remained anonymous in the studies. Because the 46 schools were in various localities throughout the country, some schools likely served large proportions of rural students. Furthermore, it would not seem sensible to conjecture that rural students would be less likely suited for RR treatment than students in other localities. The RR studies that met the WWC evidence standards with or without reservations not only had high internal validity, but had sufficient external validity that allows for the generalization of effects to the targeted participants in this scale up effort.

Ascertaining the extent of evidence for an intervention and examining the magnitude of program effects on important student outcomes are major purposes of the WWC review process. Impact evidence is reviewed in four critical outcome domains of beginning reading, including Alphabeticity, Reading Fluency, Comprehension, and General Reading Achievement. Within each domain, the WWC categorizes the extent of evidence for an intervention into one of two levels, small and medium to large (WWC, 2008). Domain evidence is considered small if it is based on

only one study, or if it comes from one school, or if the findings are from a total sample of less than 350 students from less than 14 classrooms across all studies. Evidence for a domain is classified as medium to large if it is based on more than one study from more than one school, and it is from a total sample size of 350 students or from at least 14 classrooms. The WWC reports magnitude effects as average percentile points, which can range from -50 to +50. An average percentile point indicates “the difference between the percentile rank of the average student in the intervention condition versus the percentile rank of the average student in the comparison condition” (WWC, 2008).

To date, the WWC has identified and reviewed 170 beginning reading interventions (WWC, April 30, 2010) and determined that 145 of those interventions did not have any studies that met their evidence standards. The evidence for the remaining 25 programs is summarized in Table 1, which includes both the average percentile point and the extent of evidence (marked with a single asterisk if small or two asterisks if medium to large), when available, for each intervention.

As is evident from Table 1, Reading Recovery is the only beginning reading intervention that had evidence in all four domain outcomes, including Alphabeticity, Reading Fluency, Comprehension, and General Reading Achievement. The only other program besides Reading Recovery to have medium to large extent of evidence for General Reading Achievement, which commonly is measured with external standardized reading assessments, was Success for All; however, the average effect for Reading Recovery in that domain was three times the magnitude of the Success for All average effect (32 compared to 10). The Reading Recovery average effect in General Reading Achievement was twice as large as the estimate of the program with the

Table 1. Average percentile points by literacy outcome for beginning reading interventions with WWC reports

Intervention Name	Alphabetics	Reading Fluency	Comprehension	General Reading Achievement
Accelerated Reader	Na	+3*	0**	+16*
Cooperative Integrated Reading and Composition© (CIRC)	Na	na	+4**	na
Corrective Reading	+9*	+11*	+7*	na
Classwide Peer Tutoring©	Na	na	na	+14*
DaisyQuest	+23**	na	Na	na
Early Intervention in Reading (EIR)®	+36*	na	+18*	na
Earobics®	+25*	+15*	Na	na
Failure Free Reading	+1*	+2*	+10*	na
Fast ForWord®	+8*	na	+1*	na
Fluency Formula™	Na	+10*	-11*	na
Kaplan SpellRead	+18*	+9*	+20*	na
Ladders to Literacy	+25**	+26*	+9**	na
Lexia Reading	+11*	+9*	+11*	+9*
Lindamood Phonemic Sequencing (LiPS)®	+17*	na	+6*	na
Little Books	Na	na	Na	+12*
Peer-Assisted Learning Strategies (PALS)©	+19**	+13*	+13*	na
Read Naturally®	Na	+8*	+2*	na
Read, Write & Type!™	+8*	na	+3*	na
Reading Recovery®	+34**	+46*	+14*	+32**
Start Making a Reader Today® (SMART®)	+16*	+17*	+14*	na
Stepping Stones to Literacy	+30*	na	Na	na
Success for All®	+13**	na	+8**	+10**

Voyager Universal Literacy System®	+11**	na	-25*	na
Waterford Early Reading Program	+19*	na	+4*	na
Wilson Reading	+13*	+6*	+7*	na

Note. Average percentile points refer to the difference between the percentile rank of the average treatment student compared to the percentile rank of the average control student. Extent of evidence categorization: *small; **medium to large. Evidence is categorized as small if, for a given outcome domain, it is based on only one study, or from only one school, or from a total sample size of less than 350 and a total of less than 14 classrooms across studies. Evidence is considered medium to large extent for a given domain outcome if it is based on more than one study, and from more than one school, and the total sample size is at least 350 students or from at least 14 classrooms across studies. na = not applicable. (Source: WWC, April 30, 2010)

second largest effect in that domain (Accelerated Reader), and the extent of evidence for that intervention was classified as small.

Only two other interventions besides Reading Recovery had medium to large extent of evidence for more than one outcome domain, but the magnitude of effects for those two programs (Ladders to Literacy and Success for All) were smaller for each domain compared to Reading Recovery. The Alphabetics (+34) and Reading Fluency (+46) effects for Reading Recovery were large, and the effect for comprehension (+14) was rather solid. Averaging the effects across the four domains, Reading Recovery clearly stands out as the beginning reading intervention with the most promise to scale up and effectively reach young children experiencing English-language literacy difficulties.

The effect magnitude in General Reading Achievement for Reading Recovery not only is significant and large, especially compared to other beginning reading interventions, it is vital if

many young children in persistently low-performing schools will have a realistic chance of being successful in school and life. Schools with achievement levels in the bottom of a state's distribution, or schools in Title I corrective action or restructuring contain many first-grade students with literacy skills that place them in the 10th to 30th percentile standing nationally. Improving their literacy skills, which are vital for learning across all academic subjects, to average national levels (i.e., about the 50th percentile) requires an intervention with an effect magnitude of at least +30 percentile points. If an early reader in a persistently low-performing school is provided a reading intervention with an average effect of +10 to +15 points, the child likely will continue to struggle and will remain at risk of falling further behind his or her more advantaged peers in all academic areas. Reading Recovery is the only beginning reading intervention with an effect magnitude in General Reading Achievement as determined by the WWC that provides young children with reading problems an opportunity to catch up and maintain performance levels necessary for school success. The WWC did not review the evidence for Reading Recovery effects beyond first-grade, but D'Agostino and Murphy (2004) in their meta-analysis found that Reading Recovery student achievement gains were sustained into second grade and concluded that "the results seem to indicate a lasting program effect, at least by the end of second grade, on broad reading skills" (p. 35).

C. Experience of the Eligible Applicant

The Reading Recovery network in the U.S. began at The Ohio State University; thus, the Reading Recovery faculty at OSU has over 20 years of experience developing and implementing Reading Recovery, a large and complex intervention, on a national scale. From the first training class of 17 teachers at OSU in 1984, Reading Recovery has grown to serve over 2,000,000 first graders.

Faculty at The Ohio State University have provided consistent leadership at the national level supporting the development of 22 University Training Centers across the U.S., the design of the *Standards and Guidelines of Reading Recovery in the United States, 4th edition* (Reading Recovery Council of North America, 2004), the development of the Reading Recovery Council of North America, and the establishment of the International Data and Evaluation Center as described in Section A of this narrative. Drs. Rodgers, Scharer, and McGee have extensive experience as OSU faculty working with Reading Recovery. As Reading Recovery Trainers, they have a strong understanding of Reading Recovery nationally and internationally as well as the relationships between university faculty, teacher leaders, and teachers across the U.S. They have not only worked to support the implementation of Reading Recovery nationally, they also direct a large literacy initiative composed of other related projects.

Along with Gay Su Pinnell, Professor Emerita at OSU, and one of the OSU professors who first brought Reading Recovery to the U.S., Drs. Rodgers, Scharer, and McGee compose the Faculty Board which directs Literacy Collaborative, a second large and complex literacy project. The Literacy Collaborative project began at OSU in 1994 based on the following question: What can we learn from Reading Recovery that can be applied in classroom contexts? This school reform initiative focuses on training an on-site staff developer and coach called a literacy coordinator who takes graduate coursework at the university for 7 weeks during the training year and begins a new role as a half-time coach the following year. Recent federally-funded research on student achievement in 17 Literacy Collaborative elementary schools documented that K-2 students learned an average of 32% more during the third year of coaching compared with the baseline training year (Biancarosa & Bryk, in press). Since its initial implementation at OSU in 1994, over 2,000 literacy coordinators have been trained across the U.S.

KEEP Books (www.keepbooks.org) is a third project initiated by OSU faculty. KEEP Books are inexpensive little books with interesting stories written to provide K-2 readers with easy-to-read books to take home to “keep.” Over 100 million little books have been sold on a not-for-profit basis since 1995 for as little as 25¢ per book. Typically, teachers introduce students to their KEEP Book as a shared or guided reading and then send the book home for students to collect and reread. There are now 208 different titles and more are being developed each year.

A fourth, more recent initiative, closely related to Reading Recovery, is Literacy Lessons professional development designed specifically for special education teachers or teachers of English language learners (ELL). The goal is to provide expert literacy training to special education and ELL teachers that they can use to design and deliver individualized instruction to their population of struggling readers. This is our latest initiative. We have been piloting this strategy for the last four years in 5 school districts in Ohio.

Working with Schools to Improve Student Achievement

OSU has a 25-year history working with a network of districts in Ohio. In 2007-2008, for example, OSU faculty worked with 18 teacher leaders who supported Reading Recovery teachers in 123 districts across the state. Through ongoing professional development and targeted intensive work with particular sites, we constantly strive to raise the rate of students successfully completing their series of lessons and reaching average reading levels. These efforts have had an important impact on the number of students retained or referred in districts served. Lyons and Beaver (1995) tracked referral rates to special education and rate of retention in one district for three years following their implementation of Reading Recovery and found that the

retention rate dropped from 4.3% to 2.9% and the percentage of first grade students placed in Learning Disabilities classrooms dropped from 1.8% to .63%.

Evaluation data of Reading Recovery in Ohio from last year demonstrate our record of significantly improving student achievement. In 2008-2009, the OSU Reading Recovery network in Ohio consisted of 19 teacher leaders and 451 Reading Recovery teachers working in 123 school districts across the state. Table 2 shows changes in Reading Recovery students' classroom reading group placement from the beginning of first grade to the end of the school year. 91% of all students who received Reading Recovery instruction were judged by their classroom teachers to be either working at well below, or below average reading levels at the beginning of the year. By the end of the year, just 37% remained in these two categories; most students (63%) had shifted to average, above average, or well above average levels of reading. These results have been consistent over the years and are representative of past performance.

Table 2. Change in classroom reading group placement from fall to year-end for all Reading Recovery students: Ohio, 2008-2009.

Reading Performance Placement											
	Well below average		Below average		Average		Above average		Well above Average		Total
	n	row %	n	row %	n	row %	n	row %	n	row %	n
Fall Reading Performance	1,501	54	1,037	37	228	8	11	0	15	1	2792
Year-End Reading Performance	395	14	653	23	1,292	46	401	14	76	3	2817

(Source: Rodgers, 2009).

Other ways to look at the impact of our Reading Recovery network on student achievement in Ohio are to examine trends in retention rates and referral to special education services. Eighty-nine percent ($n= 2,488$) of all children served by Reading Recovery in Ohio were not referred for special services in 2008-2009. This is quite an achievement in that all of the children selected for Reading Recovery come from the lowest 20% in their first grade classrooms. They were the lowest achieving children in their grade and, without an intervention, would have most likely remained at the lowest levels and needed a referral for special education services. In terms of retention decisions, 103 of students who received Reading Recovery services were initially considered for retention in grade, but not retained because they had made adequate progress (Rodgers, 2009).

Results from evaluation data are presented here for 2008-2009 only. OSU has partnered with school districts in Ohio to provide Reading Recovery professional development for the last 25 years. The results have been stable. When results are not as high as expected, OSU Reading Recovery faculty have designed more intensive professional development plans to help teachers in those districts to improve their results (Rodgers & Fried, 2009).

In sum, the OSU Reading Recovery faculty has a track record of implementing large-scale, complex, innovative literacy initiatives. In addition, evaluation data for Reading Recovery in Ohio, along with studies of Reading Recovery's impact, demonstrate that through our work with schools we have significantly improved student achievement.

The leadership and organizational skills required to support the ongoing development of literacy initiatives such as those described above are similar to the skills required to lead a large scale-up initiative as proposed in this document. Teamed with Dr. D'Agostino's evaluation

background, these professors are motivated, organized, and fully capable of successfully implementing the scaling up of Reading Recovery nationally as described in this proposal.

D. Project Evaluation

The evaluation design for the scale-up of Reading Recovery includes a rigorous mixed-methods research design, which will support strong causal inferences about program impacts, both short-term and long-term, along with rich descriptions of program implementation and analysis of individual and contextual factors related to variation in program impacts when implemented at scale. The external evaluation will be conducted under the auspices of the Consortium for Policy Research in Education (CPRE) at the University of Pennsylvania.

Multi-Site RCT for Estimating Short-Term Impacts

A multi-site randomized controlled trial (MS-RCT) will be implemented in order to produce strong causal estimates of the short-term impact of Reading Recovery on student achievement. At the beginning of each school year, teachers in participating schools will assess all first graders using the Observation Survey of Early Literacy Achievement (OS) (Clay, 2002). Students will then be rank ordered by their OS scores and a cutoff (based on a composite of subscale scores) will be chosen for each school whereby students below the cut-score (typically the lowest 20% of students overall) will be assigned to a first or second cohort for Reading Recovery. Blocked random assignment to cohorts will entail ordering eligible students by their OS scores, then grouping them into pairs (i.e., the lowest two, the next lowest two, and so on), and then randomly assigning one student from each pair to begin receiving Reading Recovery and assigning the other student in each pair to receive Reading Recovery after the first student finishes the program, 12-20 weeks later. Reading achievement of both students will be measured

during this cohort transition using the OS and the Slosson Oral Reading Test, a standardized measure of reading achievement.

Short-term impacts on students' reading performance will be estimated by comparing the performance of students in cohorts one and two during the transition period (i.e., after cohort one is finished and before cohort two begins the intervention) after controlling for the OS pretest scores. Over the course of the study, a total of ten cohorts of students (two per year) will have participated in Reading Recovery. This multilevel design will include fixed effects for pairs and fixed effects for years (after Year 1) at the student level, along with a random effect for overall school performance (i.e., a random school intercept) and a random effect for the impact of Reading Recovery (i.e., a random treatment effect across schools). A power analysis for this design suggests very high power to detect even the smallest meaningful effects after just the first year. With 15 University Training Centers, each serving an average of 20 schools in the first year, and an average of 16 eligible students (i.e., eight pairs) in each school, 30% of the variability in the outcome explained by the blocking variable, plus an additional 20% explained by the pretest covariate, and an effect size standard deviation of .10, the impact analyses in the first year will have 80% power to detect an effect as small as .09 standard deviations. Even if the effect size variability increases dramatically to 1.0, the analysis in the first year will still have 80% power to detect an effect as small as .18 standard deviations.

The enormous sample size for this multi-site RCT also allows for additional school-level contextual analysis of factors associated with variability in program effects. Data from both quantitative and qualitative sources (described below) will be linked at the school-level and used as predictors of school-level variability in impact estimates. Power analyses of school-level estimates suggests that the sample of at least 300 schools in Year 1 will provide 80% power to

detect partial correlations as small as .16 between school-level contextual or implementation factors and school-specific program impact estimates. With each year of the study, the sample size at all levels will increase by approximately 750 teachers and 6,000 students, thus increasing statistical power even more.

Multi-Site Regression Discontinuity for Estimating Long-Term Impacts

Although the RCT control group for each cohort receives the treatment by the end of their first grade year, the use of a cut-off score on the OS reading assessment to determine eligibility of students for Reading Recovery presents the opportunity to estimate longer-term program impacts through a Regression Discontinuity (RD) design. At the end of each school year, all students in first grade will be assessed using the Slosson Oral Reading Test. These scores will be used to estimate short-term impacts on students' reading performance. In addition, most students in first grade during Years 1, 2, and 3 of the study will reach third grade in Years 3, 4, or 5 of the study. Therefore, reading achievement scores from state assessments will be available for grades 3-5 for the first two cohorts and for grades 3 for the next cohort. These state achievement scores will be used as longer-term outcome measures with cross-state impact estimates produced using methods described by May et al. (2009).

Program impacts will be estimated by comparing performance of students below and above the original cut score for Reading Recovery eligibility. Because there will be a small amount of variability in schools' cutoff values, the generalizability of results beyond students near a single level of performance is enhanced. Conservative power estimates were produced by modifying the MS-RCT multilevel power analysis to include a narrow bandwidth of only 5-8 students above and below the cut score in each school and by multiplying the sample size

requirements under the MS-RCT design by a design effect of 3.16 associated with a 10/90 program eligibility split and a 50/50 treatment and control analysis sample as described by Schochet (2008, p. 17). If school-level variability in the treatment effect is small (i.e., $\sigma_{\text{TRT}} = .10$), then the RD analysis after just the first year will yield 80% power to detect an effect as small as .14 standard deviations. If school-level variability in the treatment effect is large (i.e., $\sigma_{\text{TRT}} = .50$), then the RD analysis after just the first year will yield 80% power to detect an effect as small as .25 standard deviations. With each year of the study, the sample size at all levels will rise, thus driving statistical power even higher.

Monitoring the Implementation of Reading Recovery

Reading Recovery is a very well-established intervention that has developed clearly-specified practices over many years. There are explicit protocols and requirements for the delivery of the Reading Recovery intervention, which support program fidelity. This evaluation plan involves several approaches to monitoring both program implementation and fidelity.

Semi-annual interviews with Reading Recovery teachers. Each year, a representative sample of 50 Reading Recovery teachers and 10 Reading Recovery Teacher Leaders will be selected to participate in semi-annual interviews. Each interview will take approximately 60 minutes. The first interview will be conducted in early fall of each year and will focus on issues related to professional development, identifying students for intervention, scheduling and logistics, communication with classroom teachers, use and adaptation of specific program materials and processes, and work in other grades or with other programs. The second interview will be conducted in late spring and will focus on implementation fidelity, experiences working with individual students and groups of students, communication with classroom teachers,

alignment with classroom instruction, interactions with parents, connections to or competition with other reading interventions, and the value of specific components of their own Reading Recovery training experience. Each year, approximately one-third of the sample of teachers (selected at random) will be resampled from the new cohort of Reading Recovery teachers and teacher leaders. The other half of the sample will continued to be interviewed during the next school year. This will yield a representative sample of 120 teachers and 24 Teacher Leaders, where 50 teachers and 10 Teacher Leaders were followed for one year, 30 teachers and 6 Teacher Leaders for two years, 20 teachers and 4 Teacher Leaders for three years, 10 teachers and 2 Teacher Leaders for four years, and 10 teachers and 2 Teacher Leaders for five years, giving us valuable information on how Reading Recovery teachers and Teacher Leaders implement the intervention over time.

Daily logs of Reading Recovery teachers' work. During each of the five study years, each Reading Recovery teacher will be asked to complete an online log of his/her activities for three randomly sampled days throughout the school year. This will yield a representative sample of more than 30,000 teacher-days for which we can describe the work of Reading Recovery teachers in terms of time spent assessing students, teaching individual students or groups of students, attending to specific elements of reading instruction (e.g., phonemic awareness, phonics, vocabulary, fluency, comprehension), working with teachers or administrators, and numerous other instructional and administrative activities. The online logs will be modeled after the Principal logs used in CPRE's Study of Instructional Leadership (www.studyofschoolleadership.com). In addition to descriptive analyses of RR teachers' logged activities, data from the logs will be aggregated to the school-level and used to explore potential moderating effects of variations in program implementation. In other words, the log data will be

used to explore whether specific aspects of RR teachers' work are associated with larger or smaller impacts of the program in their schools.

Annual surveys of Reading Recovery teachers. In the late spring of each year, all Reading Recovery teachers will be asked to complete an online survey inquiring about their experiences during the previous year. The survey will include a mix of fixed response and open-ended items designed to measure the prevalence and severity of barriers to program implementation, specific conditions that support or enhance implantation, contextual factors that may be associated with the implementation or impacts of the program in a school, and Reading Recovery teachers' perspectives on the most promising aspects and the most pressing challenges of the program.

Annual school case studies. In each year of the study, eight schools will be selected to serve as case studies of implementation of the Reading Recovery program. These schools will be selected from a sample stratified by region, locale (urban, suburban, rural), school size, and prior performance. One or two researchers will be assigned to each of the eight schools and will (a) conduct both semi-annual interviews with the Reading Recovery Teacher, (b) interview the school principal once per year, (c) visit the school twice per year (i.e., 6-10 days total per year) to conduct additional interviews, observations, and shadow the RR Teacher, and (d) maintain an email conversation with the Reading Recovery Teacher during the course of the school year. Different schools will be sampled each year, yielding a total of 40 school case studies across the study period. Cross-case analysis will yield information about program implementation, modifications of program components and processes, relationships between Reading Recovery Teachers and school staff, and coordination of the Reading Recovery program within the larger school context.

Moderating Effects of School Context

Annual surveys of regular classroom teachers. In the spring of each study year, a stratified random sample (i.e., by region, urbanicity, grade-span) of 1,000 classroom teachers will be selected (with probability proportional to school size) to participate in a survey that inquires about their understanding of the Reading Recovery program, the involvement and perceived success of students in the program, their interactions with Reading Recovery teachers, and their own content knowledge and instructional practice in literacy. To ensure high participation, each teacher will receive a \$10 gift-certificate up front and will be entered into a drawing to win one of three notebook computers when they complete their survey. This should yield an average of 3 teacher surveys per school, with larger schools having up to 7 teacher responses. In addition to descriptive analyses of classroom teachers' responses, data from the teacher survey will be aggregated to the school level and used to explore potential moderating effects of school contextual factors. In other words, the survey data will be used to explore whether specific conditions described by classroom teachers are associated with larger or smaller impacts of the program in their schools

Reading Recovery from Administrators' Perspectives

Annual principal interviews. Principals in the 8 case study schools, plus an additional 20 principals selected from a stratified random sample of schools (i.e., by region, urbanicity, grade-span, school size) will be recruited to participate in an interview designed to gather information on principals' understanding of Reading Recovery, the fit of the RR program for their school, principals' involvement in Reading Recovery (e.g., monitoring progress of RR students), school-specific modifications to the RR program, and perceived impacts of RR on individual students

and school-wide performance.

Annual district surveys. A senior representative from each participating school district (e.g., superintendent, assistant superintendent, or director of curriculum/instruction) will be asked to complete an annual survey containing fixed response and open-ended items designed to gather information about district resources allocated to the Reading Recovery program, coordination and fit of the RR program within districts' instructional and programmatic framework, identification of teachers to be trained in Reading Recovery, use of data to inform and support the program, and perceived impacts of the program district-wide and for subgroups of students. Analyses of these data will be largely descriptive and qualitative. Sample sizes in later years of the study will be large enough to support exploratory analyses of district-level factors as moderators of program impacts.

Performance Feedback

As data are collected and analyzed under this external evaluation, periodic feedback to program implementers will be delivered in the form of (a) quarterly internal evaluation memos summarizing findings to date, (b) periodic conference calls to discuss emergent implementation issues and potential solutions, and (c) annual evaluation reports. The objective is to enhance quality and fidelity of the implementation of Reading Recovery by providing formative, timely, and ongoing feedback to the University Training Centers and teacher leaders as well as participating districts, schools, and Reading Recovery teachers.

Dissemination of Evaluation Findings

Each annual evaluation report and the final evaluation report will be disseminated publicly in electronic form via CPRE's website and through CPRE's email lists. Printed

hardcopies of executive summaries from the annual reports and the full version of the final report will also be distributed to key constituents involved in the study (e.g., participating school districts, USDOE), and other interested organizations (Reading Recovery Council of North America, National Council of Teachers of English) and individuals via CPRE's mailing list. All research reports will be peer-reviewed by one internal and two external reviewers. In years three through five, at least one academic manuscript per year will be submitted for presentation at a national conference and also for publication in an academic journal.

Resources for the Evaluation

The external evaluation will be conducted under the auspices of CPRE at the University of Pennsylvania. Dr. Henry May and Dr. Leslie Nabors Oláh will serve as Co-Principal Investigators, assisted by one full-time doctoral-level researcher, one full-time masters-level researcher, two doctoral student research assistants, four senior research consultants, and three project management/communications staff. The research team will be advised by three senior faculty members (i.e., Bob Boruch, Rebecca Maynard, and Andy Porter) who have extensive experience in large-scale randomized and quasi-experimental evaluations.

CPRE unites seven of the nation's leading research institutions in efforts to improve student learning through research. CPRE is distinguished by its contributions to education policy, strong quality-control procedures, and expertise in disseminating research products to policymakers and practitioners. CPRE researchers have extensive experience conducting experimental studies, large-scale quasi-experimental research, qualitative studies, and multi-state policy surveys. They have studied the design and implementation of state education policy in nearly two dozen states and over 50 school districts since 1985. CPRE has also conducted

numerous multi-site, mixed-methods experimental and quasi-experimental program evaluations, including evaluations of the America's Choice school improvement program, the National Institute for School Leadership, Ohio's Personalized Assessment Reporting System, and the El Paso Math/Science Partnership. CPRE also has experience in examining classroom-level implementation of instructional initiatives, including our recent study of teacher use of benchmark assessment data. CPRE has at its disposal all the space, equipment, and resources necessary to support multiple research efforts, including the ability to store project data on secure servers. The CPRE staff has full access to the resources of their host research universities, including library, computing and database resources.

E. Strategy and Capacity to Bring to Scale

The Reading Recovery network is fully prepared to scale up immediately. The 15 University Training Centers have both experienced faculty to oversee the project and teacher leaders geographically placed to begin the year-long training of RR teachers. During their training year, RR teachers work with 8-10 struggling readers across the year during half of their day and typically work in either a classroom or with small groups the other half of the day. Thus, the impact of Reading Recovery training on children is immediate as training and teaching occur simultaneously.

Number of Students

Grant funds will support 750 new RR teachers each year; each will work with a minimum of 8 Reading Recovery students across the year and teach approximately 36 other students during the other half day of their day. Thus, over the course of the grant, more than 90,000 Reading

Recovery students will be taught and approximately 405,000 in either classrooms or Title I small group instruction for a total of nearly 500,000 students. See Table 3.

Capacity

The 15 universities which are official partners have many years of experience training teacher leaders, recruiting schools, providing ongoing professional development, and working together at the national level to support the implementation of Reading Recovery. The network is not only at the national level, but also at the university level as Reading Recovery trainers work with teacher leaders and schools. During the preparation of this proposal, each university has used their network capacity to inform schools and districts of this grant and established a growing list of potential high-need schools interested in having Reading Recovery teachers trained for their struggling first graders.

Feasibility of Replication

The Reading Recovery network has over 20 years of experience maintaining high quality training and ongoing professional development in a variety of educational contexts. The training is directed by a set of standards

(<http://www.readingrecovery.org/implementation/standards/index.asp>) designed to ensure consistent quality of implementation. These standards are crucial to maintaining the fidelity of the program. The professional development is structured, intensive, and has layers of oversight. To become a university trainer, applicants must have a PhD in reading or a related discipline and attend either The Ohio State University or Texas Woman's University for a year of intensive post-doctoral study including graduate coursework and teaching 4 children each morning.

Teacher Leaders must have a Master's degree before training at an approved university training

Table 3. Scale up plan with projected number of students taught.

Year	UTCs	Teachers Trained per UTC	Schools per UTC	Small Group/ Classroom Students per Teacher	Small Group/ Classroom Students	RR Students per Teacher	RR Students
1	15	50	20	36	27,000	8	6,000
2	15	100	40	36	54,000	8	12,000
3	15	150	60	36	81,000	8	18,000
4	15	200	80	36	108,000	8	24,000
5	15	250	100	36	135,000	8	30,000
Total		250 * 15 UTCs=3,750	100 * 15 UTCs =1,500		405,000		90,000

Note. Each year, 50 more teachers would be trained per UTC, so by Year 5, 250 teachers will have been trained by each UTC, and these teachers will be located in 100 schools per UTC by Year 5.

center for a year and earn 21 graduate quarter hours of credit. They are then required to attend ongoing professional development at their affiliated university training center each year.

Teachers earn 9 graduate quarter hours of professional development during the year-long training with a teacher leader. Following the initial training year, all Reading Recovery teachers attend 6 days of ongoing professional development led by the teacher leader each year. Because of these rigorous standards and high quality implementation, Reading Recovery has been able to demonstrate not only exceptional fidelity to the model but also consistent results. The current Reading Recovery network has a capacity to grow beyond the grant if funds were available for additional university training sites for under-served areas of the country and the training of additional teacher leaders and teachers.

Estimate of Costs

Teachers typically work in the Reading Recovery role for half a day. They work the other half of the school day as either Classroom teachers or Title I teachers. Table 4 presents per student costs calculated based on either the students who will receive individualized Reading Recovery instruction only or all students who will be instructed by Reading Recovery teachers including Reading Recovery students and students in small group or classroom settings during the other half of the school day. It can be seen from Table 4 that costs per student decrease over time, because teachers trained in the early years continue teaching new cohorts of students which increases the number of students taught over time. The average cost over five years will be \$608 if only Reading Recovery students are counted, and \$111 per student when all students taught by Reading Recovery teachers are counted.

These costs per student would translate into \$60,800,000, \$304,000,000, and \$608,000,000 to provide individualized Reading Recovery to 100,000, 500,000, and 1,000,000 students, respectively. The costs to provide either individualized, small group, or classroom instruction for 100,000, 500,000, and 1,000,000 students would be \$11,100,000, \$55,500,000, and \$111,000,000, respectively.

Mechanisms for Dissemination

Information about this project will be posted on the websites for each University Training Center, disseminated via university list serves and printed in the fall and spring issues of the *Journal of Reading Recovery*. This is particularly important for the recruitment process as both current Reading Recovery sites that need more Reading Recovery teachers to meet the needs of

the students, and new sites without any Reading Recovery teachers may qualify for this grant. Information will also be presented at the national Reading Recovery Conference and regional

Table 4. Cost Estimates Per Student

	Cost per Year	RR Students	Costs per RR Student	Small Group or Classroom Students	Costs per Small Group/Classroom Students + RR students
Year 1	\$10,947,590	6,000	\$1,824	27,000	\$332
Year 2	\$10,470,486	12,000	\$892	54,000	\$159
Year 3	\$10,806,042	18,000	\$600	81,000	\$109
Year 4	\$11,105,397	24,000	\$462	108,000	\$84
Year 5	\$11,382,285	30,000	\$379	135,000	\$69
Total	\$54,711,800	90,000	\$608	405,000	\$111

Note. The cost per small group/classroom students + RR students values were based on the combination of RR and small/group/classroom students by row (e.g., for Year 1, the total cost, \$10,947,590 was divided by 33,000 total students).

Reading Recovery conferences. As evaluation results are available, sessions will be proposed at the National Reading Conference, the research strand of the International Reading Conference, and the American Educational Research Association’s annual meeting. Manuscripts on the evaluation findings will be prepared for peer-reviewed journals such as *Reading Research Quarterly*, *The Reading Teacher*, *Elementary School Journal*, and the Yearbook of the National Literacy Conference.

F. Sustainability

The operating model for the official applicant, Reading Recovery at the Ohio State University, is described in Appendix H, Reading Recovery and Literacy Collaborative Organizational Chart. The Reading Recovery project is one of several literacy projects that are directed by a faculty board; three members of the faculty board will be involved in this project. We are governed by our College of Education and Human Ecology at The Ohio State University. The financial plan for our literacy projects is provided in Table 5 and demonstrates our ability to sustain the project after the grant has ended.

As the lead applicant, our plan has the support of Ohio's state superintendent of education, the president of The Ohio State University, and the governor of Ohio. We also have the written support of school districts in Ohio and school districts affiliated with the other universities (See Appendix D for support letters and memoranda of understanding from the official partnering universities and many schools).

The long standing implementation of Reading Recovery at each university partner site speaks to the stability and sustainability of the project. The delivery of Reading Recovery professional development at each university is organized in a three-tiered structure: faculty provide professional development to their affiliated teacher training sites, teacher leaders at the training sites provide professional development to the teachers, and teachers work with students in schools. This model has been replicated at all of the 15 universities partners on this application and, at each university partner site, Reading Recovery has been in operation continuously since it was first implemented: in 1984 at The Ohio State University, at five more university partners between 1984-1989, eight more between 1990-1997, and two more partners in the last decade.

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

The faculty who direct the Reading Recovery centers at their universities have an already established partnership called the North American Trainers Group (NATG). They meet twice a year for two days of meetings to solve implementation issues and to review progress on a research agenda. They have a stated mission and vision statement and a strategic plan with goals and objectives for communication and research which are reviewed twice a year. NATG has been in operation for 15 years and there is no reason to expect that the network will cease anytime soon.

We will target the lowest-performing school districts and provide professional development to teachers who might not otherwise have been able to afford the tuition to get the training. Funding from this grant will provide the initial professional development for teachers so they can design and deliver individualized Reading Recovery lessons. The plan does not require

the creation of new teaching positions. Teachers in existing Title I or classrooms positions can be trained by the teacher leaders who will deliver the professional development to work in Reading Recovery. The teachers work within the existing school structure to design Reading Recovery lessons for half of the day and they continue to work with Title I groups or classrooms during the other half of their day. Because these costs are one-time start-up costs and because no new positions are required with this model, the project can easily be sustained after the grant period ends with minimal financial contributions by districts.

The funding for this grant will not support salaries—a decision we made deliberately to assure the sustainability of the project. Once the teachers have the professional development, they can continue in the role for as long as they are teaching. The only ongoing costs after training are for annual data collection (\$45 per teacher) an annual per teacher fee to the regional training site (approximately \$2,000 per teacher) to pay for the ongoing professional development and school visits by the teacher leader. The application form for teacher training outlines the one-time costs of training (tuition, professional books, instructional materials, and a collection of children’s books), the annual costs for data collection and a fee to the regional teacher training site. Superintendents sign a form acknowledging the costs and agreeing to keep the teacher in the role for at least three years.

In addition to supporting professional development for teachers, funds from this grant will be used to establish one new teacher training site and teacher leader in a rural area of each state targeting low performing schools and high needs students. The grant will offset the one-time start up costs of establishing a new teacher training site and support the cost of tuition for training the teacher leader.

G. Management Plan and Personnel

There are numerous challenges to managing a multilevel project with 15 university training centers and over a thousand participating schools in 40 states. We have assembled a team with many years of funded project experience with complementary skills that together will have the capacity to handle this complex project. Each person will have a clearly defined role to complete necessary tasks, but the team will be flexible enough to take on any unforeseeable but necessary tasks.

Management Plan

Though each member of the project will communicate with individuals at various levels of the managerial system, members will have primary lines of communication in order to operate in an efficient manner. Figure 2 displays the primary flow of information between individuals involved in the project, and Table 6 provides the project tasks by objective for which personnel will be responsible in each program year. As depicted in the figure, Dr. D'Agostino (PI) will interact continuously with the Program Manager (who will report to Dr. D'Agostino) to monitor the budget. The PI also will work with the external evaluation team to ensure that IRB guidelines are followed and to support efficient data collection. He will contact UTCs and schools to monitor scale up and ensure that partnering schools meet eligibility requirements. Drs. Scharer and Rodgers will work closely with the PI to discuss issues related to scale up implementation, and they will spend considerable time and effort recruiting eligible schools, training teacher leaders, and working with faculty at the other university training centers who will be preparing teacher leaders and establishing training sites. Dr. McGee will help recruit schools for The Ohio State University training center, and will provide advice to the directors. The evaluation team

will work with the UTCs and schools to ensure data collection and to perform interviews with school principals, teacher leaders, and teachers.

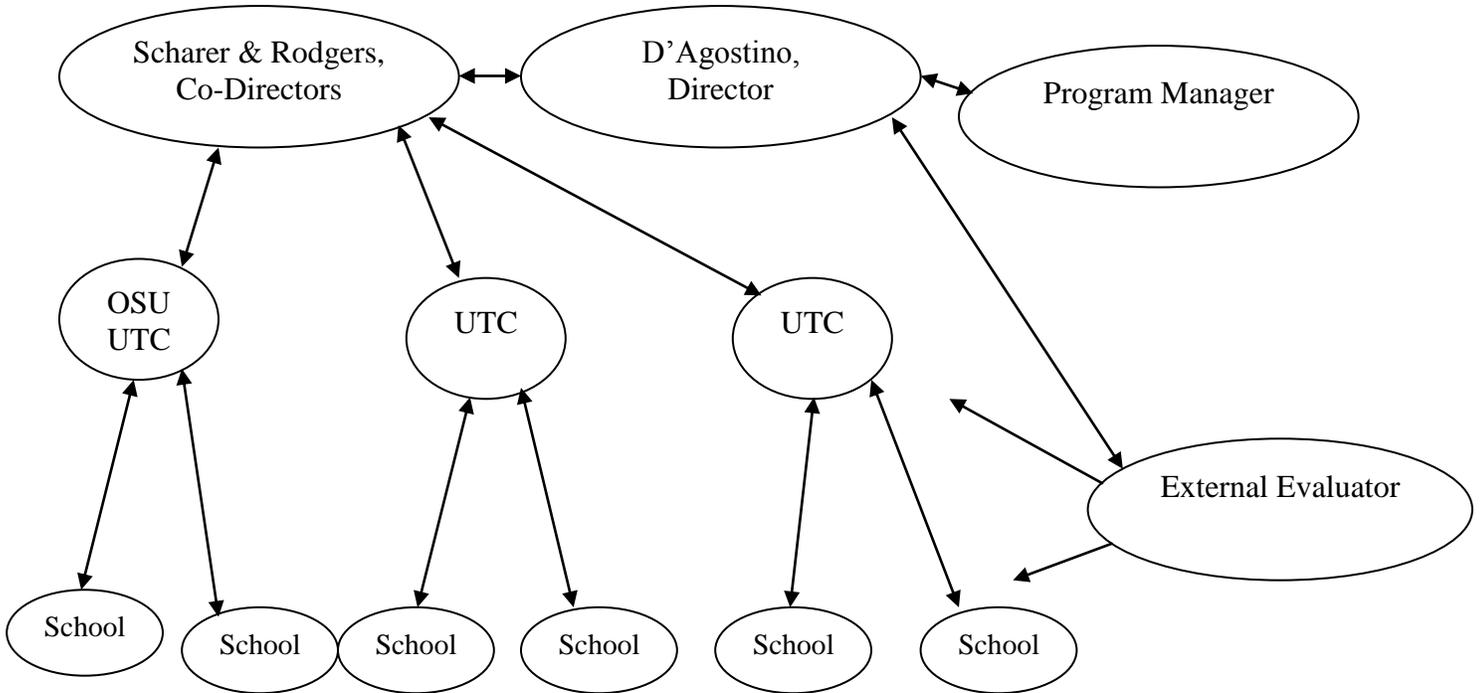


Figure 2. Managerial and communication flow chart

Table 6. Project tasks with personnel by objective and year

Objective	Tasks	Assigned Personnel	Year				
			1	2	3	4	5
Objective 1: Train 1 teacher leader at each university site ($n=15$) for an underrepresented area with a high population of qualifying schools.	<p>Design recruitment materials</p> <p>Recruit partner schools and teacher leader candidates</p> <p>Train teacher leaders</p> <p>Teacher leaders provide RR to students in partner schools</p>	<p>Rodgers & Scharer</p> <p>Faculty at 14 partner University Training Centers</p> <p>Teacher leaders from partner schools</p>	•	•	•	•	•
Objective 2: Train 750 new Reading Recovery teachers each year for a total of 3,750 teachers.	<p>Design recruitment materials</p> <p>Recruit teacher candidates at partner schools</p> <p>Train teachers</p>	<p>Rodgers & Scharer</p> <p>Faculty at 14 partner University Training Centers</p> <p>Teacher leaders and teachers in partner schools</p>	•	•	•	•	•
Objective 3: Trained teachers provide Reading Recovery to students in eligible schools	<p>Teacher students</p> <p>Teacher leaders provide site visits to teachers in training</p>	<p>Teacher leaders and teachers in partner schools</p>	•	•	•	•	•
Objective 4: Conduct external evaluation	<p>Train teachers on experimental & assessment models</p> <p>Collect and analyze test data</p> <p>Conduct interviews with teachers & principals</p> <p>Prepare reports and articles</p> <p>Teachers complete logs</p>	<p>CPRE faculty and staff at University of Pennsylvania</p> <p>Teacher leaders, teachers, and principals in partner schools</p>	•	•	•	•	•

Objective 5: Provide oversight for the project orchestrating activities across the 16 universities.	<p>Ensure that partner schools meet eligibility requirements</p> <p>Monitor budget</p> <p>Manage IRB approval and ensure its implementation</p> <p>Coordinate data collection with External Evaluator</p> <p>Monitor Scale up and document successes and issues in partner schools</p> <p>Prepare reports</p>	D'Agostino, Project Manager, GRAs	•	•	•	•	•
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Personnel

The Ohio State University personnel will include Jerome D'Agostino, Patricia Scharer, Emily Rodgers, Lea McGee, and a Program Manager that will be hired if the project is funded. The external evaluation team at the University of Pennsylvania will include Henry May, Leslie Oláh, Rebecca Maynard, Robert Boruch, and Andrew Porter. Approximately two university faculty members will lead each training center at official partnering universities. Abbreviated vitas of The Ohio State University faculty, Henry May and Leslie Oláh, as well as most university training center faculty are included in Appendix C. Specific experiences related to the project for key personnel follow.

Jerome V. D'Agostino, Associate Professor of Quantitative Methods in the Education and Human Ecology College at The Ohio State University, will serve as the principal director of the project. Dr. D'Agostino earned his Ph.D. in 1997 from The University of Chicago in Measurement, Evaluation, and Statistical Analysis (MESA). He specializes in program development and evaluation and assessment construction. Dr. D'Agostino was first involved

with Reading Recovery in the mid-1990s while working in the Evaluation Bureau of the Chicago Public Schools. He conducted a series of studies regarding the program's effectiveness across the school district, which entailed collecting and analyzing student achievement data, as well as observing RR teachers working with students. After his interest in the program was piqued, he conducted the most extensive meta-analysis of Reading Recovery effectiveness to date. He has been either a principal investigator or co-investigator on several state- or federally-funded projects. He has considerable experience managing large grant budgets and distributing grant resources to participants. For example, from 2000 to 2003, he managed resources and oversaw the evaluation of numerous Even Start program sites in Arizona, and led a consortium of site directors to share innovative delivery strategies and assessment methods.

He also has orchestrated evaluations of literacy and science programs, and interventions targeted for underprivileged children and families. He has extensive experience working with educators to develop formative assessments to monitor learning, and he has conducted numerous workshops throughout the country on classroom grading and test score interpretation for teachers. Much of his work has involved school and classroom observations and interviews with teachers, and he has helped several schools in Chicago and Arizona that had been identified for Title I program improvement. He has served on numerous state testing technical review committees, and was awarded a Spencer/National Academy of Education Postdoctoral Fellowship to study teacher tests. He presently serves on the editorial board for the *Journal of Psychoeducational Assessment* and *Reading Research Quarterly*. His research has been funded by the National Science Foundation, United States Department of Education, and Spencer Foundation. Dr. D'Agostino will provide the overall direction and administration of the project, will communicate regularly with the evaluation team to ensure IRB rules and regulations are

followed and data collection proceeds smoothly. He also will monitor the extent of scale up that occurs in partnering schools, and document prevailing barriers and facilitators of effective scale up implementation.

Patricia L. Scharer, Professor in the School of Teaching and Learning in the College of Education and Human Ecology at The Ohio State University, will serve as a co-director of the project. She is also a Reading Recovery University Trainer. Dr. Scharer earned her Ph.D. in 1990 and focuses her research on early literacy, school reform, phonics and word study, and children's literature. Her research has been published in *Reading Research Quarterly*, *Research in the Teaching of English*, *Educational Leadership*, *Language Arts*, *The Reading Teacher*, *Reading Research and Instruction* and the yearbooks of the National Reading Conference and the College Reading Association. Dr. Scharer has served as co-editor of the *Journal of Children's Literature*, *Bookbird: A Journal of International Children's Literature*, and the Children's Books column of *The Reading Teacher*. Professor Scharer is also co-editor of *Extending Our Reach: Teaching for Comprehension in Reading, Grades K-2* and *Guiding K-3 Writers to Independence: The New Essentials*. She is co-author of *Rethinking Phonics: Making the Best Teaching Decisions*.

Dr. Scharer has been co-PI on two federal grants. First, she partnered with Karin Dahl to study phonics instruction in whole language classrooms. This large, qualitative study involved weekly observations in 8 first grade classrooms across the school year. More recently, she conducted federally-funded research to study the effects of Literacy Collaborative coaching and professional development in K-3 classrooms in 18 elementary schools across the U.S. This study was led by Dr. Anthony Bryk, President of the Carnegie Foundation, in partnership with the faculty from the University of Chicago, Lesley University, and Stanford University. Dr. Scharer's experience with federal grants includes collaboration across universities and working

within a large-scale project. In addition, she currently serves as one of four faculty directing a large literacy project at OSU including KEEP Books, Literacy Collaborative, Reading Recovery, and the International Data Evaluation Center. Dr. Scharer will work closely with Drs. Rodgers and D'Agostino to recruit eligible schools, train a teacher leader, and work with faculty at the other university training centers who will be preparing teacher leaders and establishing training sites.

Emily Rodgers, Associate Professor in the School of Teaching and Learning in the College of Education and Human Ecology at The Ohio State University, will serve as a co-director of the project. Dr. Rodgers earned her Ph.D. in 1998. Her research interests include reading difficulties and teacher professional development. She studies teaching and learning with a particular focus on understanding scaffolding processes in the contexts of teaching young children having great difficulty learning to read and coaching teachers.

Dr. Rodgers has published articles in *Journal of Literacy Research*, *Journal of Reading Recovery and the Yearbook of the National Reading Conference*. She has written book chapters about teacher professional development and co-edited two books, *Strategies for Scaffolding Literacy Instruction in K-4 Classrooms* and *Learning from teaching in literacy education: New perspectives on professional development*. She is the co-author of *The Effective Literacy Coach*. She served for three years as editor of an international literacy journal *Literacy Teaching and Learning* and has served as a reviewer for four journals including *The Reading Teacher*, *Journal of Literacy Research*, *Reading Research Quarterly* and *Educational Evaluation and Policy Analysis*. She served as a consultant on an IES funded project, (Principal Investigators were Ian Wilkinson, Karen Murphy and Anna Soter) and as an investigator with Dr. Scharer's federally funded study of teacher professional development to develop rubrics for teacher practice

Dr. Rodgers has received contracts totaling \$1.5 million from the Ohio Department of Education to evaluate Reading Recovery in Ohio and provide training and professional development to teacher leaders, and she has authored or co-authored 20 annual state and national evaluations of Reading Recovery.

Dr. Rodgers has co-directed OSU's Reading Recovery network since 1998, working with up to 130 teacher leaders in 8 different states over the last 12 years. She has collaborated with the Ohio Department of Education since that time to co-direct the Ohio Reading Recovery network of teacher leaders, teachers and site coordinators. This work has involved designing and delivering professional development to teacher leaders and supporting the implementation of Reading Recovery in the state. On this project she will train the new teacher leader for the UTC, help establish the new teacher training site, and support teacher leaders in training teachers.

Lea M. McGee, Professor of Reading and Early Literacy in the College of Education and Human Ecology at The Ohio State University. Dr. McGee earned her Ed.D. from Virginia Tech University in 1980. She specializes in emergent literacy development and instruction and early struggling readers and writers. Dr. McGee is a University Trainer for Reading Recovery. She has co-authored the National Reading Recovery Evaluation Report (2008-2009) and a 2008 report from the Reading Recovery International Data Center in the *Journal of Reading Recovery*. In addition, she has published a review of Reading Recovery research in *Journal of Literacy Teaching and Learning: An International Journal of Early Literacy*.

Dr. McGee has been a Co-Director and Principal Investigator of two federally-funded projects. She has experience in managing large grant budgets and distributing grant funds to project participants according to the goals of the project. For example, she directed both a 2002

and a 2004 Early Reading First grant with budgets up to 1.9 million dollars. Because of her expertise in supervising teachers and coaching them through change in these two projects, Dr. McGee has conducted workshops around the country with teachers sharing her instructional approaches. She has published 6 textbooks on teaching reading and writing, nearly two dozen book chapters, and over 40 articles in refereed scholarly research journals as well as journals for teachers. Dr. McGee will serve the project by identifying low performing elementary schools in high poverty areas of the state of Ohio and will recruit school districts and schools in those locations to participation in the project. She will continue to serve as a liaison to those districts and schools.

Dr. Henry May is a Senior Researcher and Statistician at the Consortium for Policy Research in Education (CPRE) an Adjunct Assistant Professor at PennGSE. His primary areas of expertise include methods for program evaluation, experimental and quasi-experimental design, multilevel modeling, longitudinal analysis, item response theory (IRT), and missing data theory. His current and recent research projects include a randomized evaluation of the National Institute for School Leadership, a randomized evaluation of the Ohio Personalized Assessment Reporting System, a regression discontinuity study of the America's Choice Ramp-Up to Mathematics program, and a longitudinal study of the International Baccalaureate Students' access, persistence, and performance in postsecondary education. Dr. May has extensive experience linking and analyzing large-scale national-level databases including NAEP, SASS, NELS, TIMSS in addition to several district and state-level databases from Florida, Georgia, Mississippi, New York, New Jersey, Ohio, and Texas. Dr. May was also the primary author on an NCEE Technical Methods report from the Institute of Education Sciences on the use of state

test scores in education experiments. Dr. May teaches advanced statistics courses to graduate students at the University of Pennsylvania.

Dr. Leslie Nabors Oláh is a Research Assistant Professor at PennGSE and a Senior Researcher at CPRE where she has served as Co-PI and PI of several studies of instructional practice. She has published on children's cognitive growth as well as on teacher practice, using both quantitative and qualitative methods. Prior to her research career, she was a teacher of English as a Second Language at the University of Pennsylvania and the University of California, Berkeley. She has served as Co-Chair of the Editorial Board of the Harvard Educational Review and as Editor-in-Chief of Working Papers in Educational Linguistics at the University of Pennsylvania, and is Co-Editor of Perspectives on Language and Literacy: Beyond the Here and Now (Harvard Education Press, 2001).

Dr. Rebecca Maynard is a University Trustee Professor of Education and Social Policy at the University of Pennsylvania and a leading expert in the design and conduct of randomized controlled trials in the areas of education and social policy. Dr. Maynard served on the technical review team during the design and development of the What Works Clearinghouse, and for the past four years, she has directed the University of Pennsylvania's Predoctoral Training Program in Education Sciences.

Dr. Robert F. Boruch is a University Trustee Chair Professor of Education and Statistics at the University of Pennsylvania. His work focuses on research methods and evidence for determining the severity and scope of social and educational problems, implementing programs and policies, and estimating the effects and the effectiveness of interventions. He has published extensively on randomized trials in education and other areas. He currently serves on the

National Academy of Sciences Committee on Field Evaluation of Behavioral and Cognitive Science Based Methods.

Dr. Andrew C. Porter is Dean of the Graduate School of Education and George and Diane Weiss Professor of Education at the University of Pennsylvania. Dr. Porter has published widely on psychometrics, student assessment, education indicators, and research on teaching. Dr. Porter is a former president of the American Educational Research Association (2001) and was elected a member of the National Academy of Education in 1994, where he has been vice president since 2005. He is a Lifetime National Associate of the National Academies.

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