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Absolute Priority 1: Moderate Evidence

Absolute Priority 2: Field-Initiated Innovations- General

PURPOSE OF PROJECT

The aim of the proposed **mid-phase** project will be to develop, implement and evaluate scalable practices for an evidence-based, elementary school intervention: Class-Wide Function-related Intervention Teams (CW-FIT) program (see www.cwfit.ku.edu and YouTube "cw-fit"). CW-FIT is a classroom intervention program that engages students at risk of school failure and improves teachers' ability to teach more, thus the slogan "*More Time to Teach, More Time to Learn.*" Academic Engagement (the act of attending to the task at hand, responding appropriately to prompts, and asking/answering questions, reading, writing and completing academic tasks: Kamps et al., 2015; Neely, Rispoli, Gerow, & Ninci, 2015), is vital to the success of high-needs students (Greenwood, 1991; Greenwood, 2008). Teachers can directly influence academic engagement, as it is a malleable factor affecting student achievement (Fredricks, Blumenfeld, & Paris, 2004). The proposed project addresses **Absolute Priority 2-Field Initiated Innovations-General** and will make a meaningful difference for some of our Nation's highest-needs students and their teachers. Two Randomized Control Trial efficacy studies of CW-FIT (Kamps, et al., 2015; Wills, Wehby, Caldarella, Kamps, & Swinburne Romine, 2018) have been reviewed by What Works Clearinghouse (WWC) and meet standards without reservations (see www.ies.ed.gov/ncee/wwc and Evidence Form). These studies support the intervention as improving elementary students' academic engagement and increasing teachers' classroom management and use of praise and overall classroom climate. Despite the strong evidence supporting CW-FIT, a lack of methods to build school district capacity and to cost-effectively coach teachers are barriers preventing CW-FIT from reaching urban to rural students across the country.

The proposed project will address these barriers with a ***District Coaching Model*** and ***Implementation Supports*** to build scalability and sustainability. Carried out in elementary

schools with high percentages of high-needs students (See Table 1) in San Francisco

(California) and Kansas City (Missouri and Kansas) with 156 teachers, an estimated 9,900

students (including follow-up) will directly benefit from the project activities, and thousands

more in continued scaling and dissemination following the Project. Project goals are to:

1. Increase the scalability and sustainability of CW-FIT by creating a *District*

Coaching Model and building *Implementation Supports*.

2. Contribute to the CW-FIT evidence-base for improving student academic engagement and

achievement for high-needs students in elementary schools and improving teacher's classroom

management in these schools. SRI International's (www.sri.com) independent evaluation will

generate important information about the intervention's effectiveness, helping to identify for

whom and in which contexts CW-FIT is most effective and implemented with fidelity. SRI has

designed the evaluation to meet WWC standards without reservations.

Table 1. *Partnering School Districts with High Percentage of High-needs Students*

District *see letters of support	Total Enrolled	Elementary Schools	Title 1 Eligible	Free & Reduced	Minority Enrolled
Kansas City (KS)	21,890	30	27 (90%)	78.4%	87%
North Kansas City (MO)	19,712	24	12 (50%)	66.3%	47%
Vallejo Unified (CA)	14,468	15	15 (100%)	77.5%	93.4%
Mt. Diablo Unified (CA)	31,073	30	12 (40%)	81.3%	89.6%

(A) SIGNIFICANCE

(1). The Potential Contribution to Increased Knowledge of Educational Problems or Effective Strategies.

This project will contribute to increasing the knowledge base for how effective evidence-

based strategies can be taken to scale and be sustained by establishing district capacity to

implement and developing *Implementation Supports* using innovative online platform to

support coaching and fidelity (the TORSH Talent System in Strategy to Scale Section).

The project will also contribute to the knowledge of the effects of CW-FIT (an evidence-based strategy) on: a) student academic engagement for high-needs students in elementary schools; b) teachers' classroom management in these schools; and c) student academic achievement. Among the evidence-based interventions addressing classroom management or classroom behavior available reviewed by WWC, the Blueprints for Healthy Youth Development and the National Center for Intensive Interventions, CW-FIT is novel because it is the only one that: 1) addresses engagement as a dependent variable, and 2) has a Tier 2 level of supports for nonresponsive students. CW-FIT also uniquely targets changes in teachers' skill sets as they learn to establish a more positive classroom climate and improve their classroom management skills. CW-FIT is a two-tiered intervention. Tier 1 is implemented class wide and designed to increase student engagement for the majority of students. Tier 2 supports are implemented for those students deemed unresponsive to Tier 1. The primary components of CW-FIT are described below and in Figure 1 (next page).

Tier 1 Teaching Component. The first critical component of the intervention involves teachers teaching lessons addressing common problem behaviors. Elementary students typically engage in problem behaviors to (a) obtain attention from adults or peers; (b) escape from difficult tasks; or (c) gain access to materials and activities. Three brief 15-minute lessons target: (1) gaining attention and assistance appropriately, (2) gaining access to privileges and (3) ignoring inappropriate behavior from others. Lessons include modeling examples/ non-examples, student practice and feedback. Skills taught provide the structure that high-need students need to navigate classroom social and behavioral expectations (Kamps, Tankersley, & Ellis, 2000). The lessons help teachers clarify their expectations and effectively identify student behaviors to recognize and reward.

Tier 1 Group Contingency Component. This class-wide component consists of a group contingency where students earn points for their teams (4-6 teams per class) by engaging in

desired behaviors (e.g., completing independent assignments, reading). A team chart displays

each team's points and teams meeting a preset goal (set by the teacher) earn privileges or

rewards. At specified times during instruction (prompted by a timer), the teacher briefly stops

and awards points for desirable behaviors.

Tier 2 Component- Self-Management, Help Cards. In prior studies of CW-FIT,

approximately 1-2 students in a given class are typically non-responsive to the CW-FIT Tier 1

intervention. Teachers, in consultation with school behavior support team personnel, report

student responsiveness after 3-4 weeks of implementing Tier 1 using the CW-FIT Tier 2

Identification Form. The Tier 2 identification form outlines both self-management (for students

displaying attention-seeking behaviors) and Help Cards (to address students displaying escape

behaviors) and provides descriptions of which intervention is most appropriate for student

issues of concern.

School personnel (with this Project, the District Coach or School Liaison) will provide a

"mini" 10-minute pullout lesson for the identified students on either the self-management

procedure (students learn to monitor their own engagement as a method of self-management) or

Figure 1. *Overview of CW-FIT*
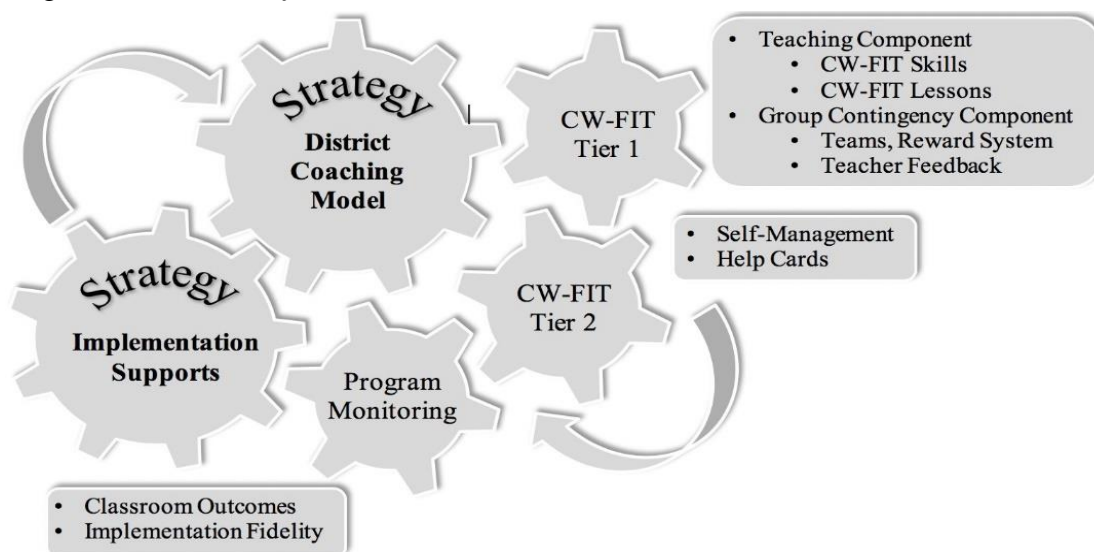
help card procedure (students learn to use cards to request help from peers or the teacher). The addition of the CW-FIT Tier 2 Component historically results in positive results for 70% of the non-responding students. For students who do not respond well to Tier 1 or 2 CW-FIT strategies, teachers then contact their Behavior Support Team for guidance on individualized function-based interventions.

Program Monitoring Component. This component of CW-FIT includes keeping record of implementation (what teachers are implementing, how often do they implement), fidelity (to what extent are teachers implementing as intended), and brief observations of class engagement. External coaches (changing to District Coaches with this project) traditionally conduct the monitoring of the fidelity and implementation. The brief observations of class engagement are typically performed with both external coaches (changing to District Coaches) and existing school personnel (e.g. School Psychologists, CW-FIT Liaisons). Program Monitoring will allow the District Coach to make data-based decisions in the determination of which teachers need what additional coaching.

(2). The Unmet Demand for CW-FIT That Will Enable Us to Reach the Proposed Level of Scale.

There is strong demand for evidence-based, scalable, cost-efficient interventions that can improve elementary student engagement as schools with high percentages of high-needs students look for solutions to improve student achievement. During the 2015-2016 school year, there were 50,327,015 students in 98,456 public schools in the United States with approximately 3,151,497 teachers (NCES, 2017). Of these, more than 54,000 schools received Title 1 Funds and 30% are in urban settings. Within these schools, social and behavioral needs of students are extensive, particularly as students with the greatest behavior problems and students with disabilities are more commonly included in general education classrooms

(Chafouleas, Volpe, Gresham, & Cook, 2010). Thus, teachers need help engaging their students in instruction as they often lack adequate behavior and classroom management skills. In particular, urban teachers report being unprepared to address challenging behavior and student social-behavioral needs and too often abandon teaching because of their classroom frustrations (Walter, Gouze, & Lim, 2006).

Schools and school districts around the country have shown significant interest in CW-FIT, specifically. There is an enormous unmet demand for CW-FIT as schools with high-needs students look for evidence-based strategies to help address disengaged students, poorly managed classrooms and low student achievement. In the last 3 years, we have had 12,551 website visits and 1,350 requests for CW-FIT. Unfortunately, we lack a sufficient training infrastructure and support framework to fulfill these requests for training and maintenance (maintenance in those schools that have started implementation).

(B) QUALITY OF THE PROJECT DESIGN

(1). The Goals, Objectives, and Outcomes to be Achieved by the Project.

The proposed five-year project has two goals: 1) Increase the scalability and sustainability of CW-FIT by creating a **District Coaching Model** and developing **Implementation Supports**; 2) Contribute to the CW-FIT evidence-base for: a) improving student academic engagement and achievement for high-needs students in elementary schools; and b) improving teachers' classroom management in these schools. District Coaches will be trained by the Project's National Trainer and will then train teachers. After initial Coach training, distance consultation will be provided to the District Coaches. Table 2 provides the specific project objectives, expected outcomes, and measures.

Table 2. *Project Goals, Objectives, Outcomes and Measures*

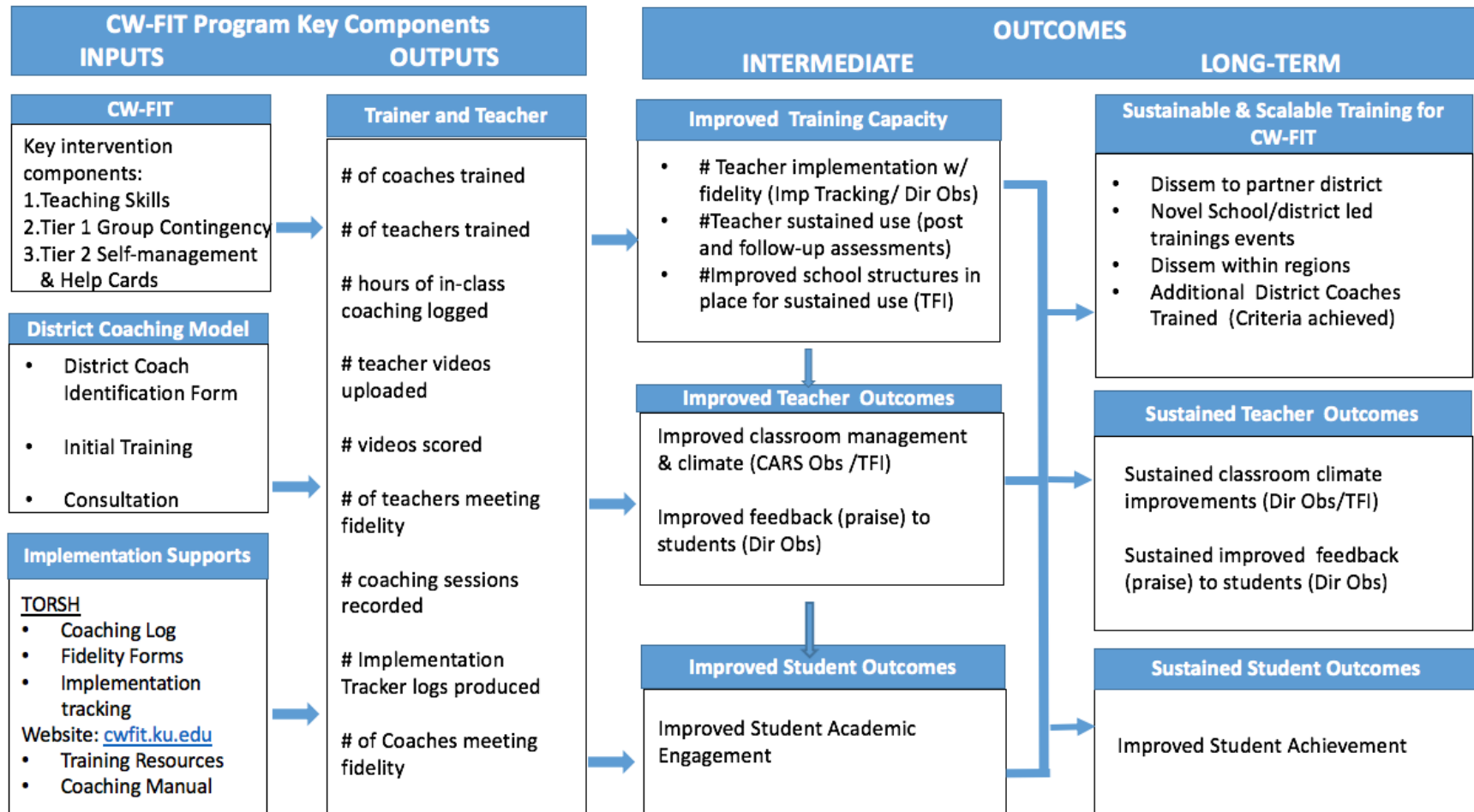| Project Goals, Activities, and Milestones	Outcomes	Measures
Goal 1. Increase the scalability and sustainability of CW-FIT		
Objective 1: Implement Strategy to Scale (Yrs 1-2) with High Quality with Continuous Feedback and Fidelity Data for Improvement.		
Strategy 1.1. Identify CW-FIT District Coaches. (Yrs 1-2)	District leaders meet with project staff to review coaching roles, responsibilities and desired qualifications and complete District Coaching Nomination Form.	Measure 1.1. 100% of Participating Districts complete District Coaching Nomination Form.
Strategy 1.2. Recruit CW-FIT District Coaches. (Yrs 1-2)	District leaders will meet with prospective District Coaches and secure signed Coaching Agreements.	Measure 1.2. Each participating District submits 2 Coaching Agreement Forms.
Strategy 1.3. Conduct Initial Training of District Coaches. (End Yr 1 Start Yr 2)	District Coaches trained by National Trainer in 3-day initial training, learning how to provide teacher training, in-class coaching, Tier 2 supports, and to use the TORSH system to monitor implementation and fidelity as well as to provide coaching.	Measure 1.3. All District Coaches attend training and each coach demonstrates 90% or greater on Coaching Mastery Assessment. District Coaches submit training evaluations with 90% satisfaction and no major issues/procedures in need of revision are identified.
Strategy 1.4. Provide Distance Consultation to District Coaches 1 x Week in first Month and then Monthly for initial implementation year. (Yrs 2-4)	District coaches are fully trained and individualized solutions for school level implementation are addressed. Distance Consultation Meetings continue weekly for Coaches with unresolved problems with implementation or fidelity.	Measure 1.4. National Trainer Activity Logs record 80% or greater participation by District Coaches and 100% of problems documented with solutions (actions).
Strategy 1.5. Revise coaching materials and procedures for Strategies 1.1-14. (Yrs 1-5)	*District Coaching Model* and Implementation Support Materials Revised and Available in TORSH Talent at www.cw-fit.ku.edu: Coaching Manual, Coaching Log, Implementation and Fidelity Forms.	Measure 1.5. Revision Summary Completed at Cross-Site meetings Records 100% of identified revisions were completed.
Objective 2: Implement CW-FIT with the *District Coaching Model* (Yrs 2-4) and continuously use feedback and fidelity data to revise the Model and the *Implementation Supports*.		
Strategy 2.1. District Coaches conduct initial training for CW-FIT intervention teachers. (Fall Yrs 2-4)	District Coaches complete 2.5-hour training for CW-FIT teachers and an in in-person initial 1-hour coaching session. Teachers report satisfaction with training and coaching and readiness to implement CW-FIT.	Measure 2.1. Record of Coaching indicates 100% of intervention teachers attended training and received the in-class coaching session. Based on on-line survey, treatment teachers report >80% satisfaction with initial training.
Strategy 2.2 Intervention teachers will implement CW-FIT. (Yrs 2-5)	Intervention teachers implement CW-FIT a minimum of 3 X week in both Math and ELA with Fidelity.	Measure 2.2 Implementation Forms in TORSH indicate 90% of teachers implementing CW-FIT 3 X week or more.

Strategy 2.3. District Coaches provide coaching and fidelity feedback through TORSH. (Yrs 2-5)	District coaches review 2 videos uploaded by intervention teachers within the first 2 weeks of intervention and monthly thereafter for teachers with >90% fidelity, adjusting for more frequent coaching for teachers with <90%. Intervention classes compared to control classes indicate greater: student engagement and achievement; teacher classroom management.	Measure 2.3. Using TORSH, 100% of all online coaching sessions logged with dosages, tactics, strategies and fidelity recorded. 90% of teachers will upload required videos; 100% of coaches will adhere to 90% or greater coaching fidelity.
Strategy 2.4. District Coaches guide Tier 2 procedures in collaboration with school personnel. (Yrs 2-5)	District Coaches work with existing school personnel to identify students that may benefit from Tier 2 procedures to improving their engagement.	Measure 2.4. Based on TORSH Implementation Form at least 100% of students, nominated by teachers for Tier 2 procedures, will receive Tier 2 supports.
Strategy 2.5. Revise coaching procedures and implementation supports for Strategies 2.1-2.4. (Yrs 1-5)	Online Coaching Manual, Implementation Planning Guide, and Procedures to use TORSH. KS *Site* and Advisors reviewed and refined training and coaching procedures, documentation and fidelity forms; sustainability tools.	Measure 2.5 Revision Summary Completed at Cross-Site meetings and records document 100% of identified revisions were completed.
Goal 2. Contribute to the CW-FIT evidence-base		
Objective 3: Conduct an Independent Implementation Evaluation (Yrs 3-5) and an RCT Meeting What Works Clearinghouse Standards Without Reservations.		
Strategy 2.1. Recruit 24 schools. 6 per district and 12 per site to participate in CW-FIT randomized trial. (Yrs 2-3)	Principals at schools suggested by District Coaches as supportive of the project.	Measure 3.1. Teachers and Principals in participating schools sign consent/agreement totaling 144 teachers across 24 schools.
Strategy 3.2. Randomly assign classrooms to treatment and control conditions. (Yrs 3-4)	144 classrooms randomly assigned with baseline equivalence (see evaluation section). All intervention teachers/students receive intervention fall; comparison group teachers/ students, spring after post data.	Measure 3.2. SRI report to Project Director on randomization procedures and outcomes indicating 144 classrooms assigned over the two cohorts.
Strategy 3.3. Collect pre- and post-measures on student engagement, student achievement, and teacher classroom management. (Yrs 3-4)	Classroom /teacher data pre-and post-measures collected (see evaluation plan).	Measure 3.3. SRI report on data collection indicates 100% data per classroom collected with minimal missing/unattainable data (<3%).
Strategy 3.4. Collect sustainability data, follow-along measures collected. (Spring Yrs 3-5)	Sustainability, follow-along measures collected (see evaluation plan).	Measure 3.4. SRI report on data collection indicates 90% or greater sustainability data collected.
Strategy 3.5. Analyze data and evaluate the impact of CW-FIT. (Yrs 4-5)	SRI completes analysis and prepares publication meeting WWC standards without reservations.	Measure 3.5. SRI completed analysis with <5% attrition of classrooms

Objective 4. Disseminate Project Findings and the District Coaching Model for CW-FIT		
Strategy 4.1. Plan for sustainability from day one. (Yrs 1-5)	Initial meetings with districts will begin with planning for sustainability and monthly Cross-site Review Meeting along with Yearly (Yrs 1-3) Advisory Board meetings will document plans and progress.	Measure 4.1. SRI completed follow-up record of teachers sustained use of CW-FIT indicating >80% of teachers have sustained use and 100% of District Coaches have sustained coaching fidelity/roles and responsibilities.
Strategy 4.2. Disseminate findings within and beyond project school districts. (Yrs 4-5)	Findings disseminated within districts, regions, at national conferences, in peer-reviewed journals and through social media.	Measure 4.2. Annual report on dissemination indicates 100% completion of Dissemination Plan activities per year.
Strategy 4.3. Continue scaling beyond the Project Funding. (Yr 5 and beyond)	CW-FIT will be implemented in novel schools within existing districts and novel districts will also begin implementation through the developed *District Coaching Model* utilizing the *Implementation Supports*.	Measure 4.3. Record of District Coaching Log demonstrates 100% of districts have expanded CW-FIT within district. Record of novel districts having District Coaches trained indicates yearly scaling.

(2). The Quality of the Conceptual Framework Underlying the Proposed Research.

The logic model for the CW-FIT project is provided in Figure 2 below. This model drives

Project Objectives as described in the Project Design and the Evaluation Plan. We expect that

District Coaches will be able to implement the training model with integrity and that, in turn,

teachers will implement with a high level of fidelity. The expected outcomes will reflect prior

study outcomes of *increased student academic* engagement and achievement along with improved

teacher classroom management. By meeting the project objectives, with an established **District**

Coaching Model and **Implementation Supports**, participating district and schools will grow in their

capacity to deliver the intervention and implementation of CW-FIT will be sustained.

Figure 2. *CW-FIT Logic Model*

CW-FIT Program Key Components

INPUTS / OUTPUTS

CW-FIT

Key intervention components:
1. Teaching Skills
2. Tier 1 Group Contingency
3. Tier 2 Self-management & Help Cards

District Coaching Model

- District Coach Identification Form
- Initial Training
- Consultation

Implementation Supports

TORSH
- Coaching Log
- Fidelity Forms
- Implementation tracking

Website: cwfit.ku.edu
- Training Resources
- Coaching Manual

Trainer and Teacher

- # of coaches trained
- # of teachers trained
- # hours of in-class coaching logged
- # teacher videos uploaded
- # videos scored
- # of teachers meeting fidelity
- # coaching sessions recorded
- # Implementation Tracker logs produced
- # of Coaches meeting fidelity

OUTCOMES

INTERMEDIATE / LONG-TERM

Improved Training Capacity

- # Teacher implementation w/ fidelity (Imp Tracking/ Dir Obs)
- #Teacher sustained use (post and follow-up assessments)
- #Improved school structures in place for sustained use (TFI)

Improved Teacher Outcomes

Improved classroom management & climate (CARS Obs /TFI)

Improved feedback (praise) to students (Dir Obs)

Improved Student Outcomes

Improved Student Academic Engagement

Sustainable & Scalable Training for CW-FIT

- Dissem to partner district
- Novel School/district led trainings events
- Dissem within regions
- Additional District Coaches Trained (Criteria achieved)

Sustained Teacher Outcomes

Sustained classroom climate improvements (Dir Obs/TFI)

Sustained improved feedback (praise) to students (Dir Obs)

Sustained Student Outcomes

Improved Student Achievement

(C) STRATEGY TO SCALE

(1). The Specific Strategies to Scale that Addresses Prior Barriers.

Despite the strong evidence supporting CW-FIT, a lack of sustainable supports for training and implementation fidelity is a barrier to reaching the level of scale that can be achieved. First, we have not developed a system to train District Coaches and develop district capacity to train. School districts have therefore been reliant on continued external coaching from CW-FIT trainers, and we are limited outside of our regions due to factors such as cost and time. Schools who have previously adopted CW-FIT do not have capacity to train and support teachers. Too often, these schools drift from CW-FIT (fewer teachers implementing with fidelity over time) and rely on the external training to sustain the practice and reach full implementation. To address this, we are proposing to develop the *District Coaching Model*, (a train the trainer approach) training District Coaches (who will then train teachers) and building district capacity to sustain the intervention. CW-FIT will be integrated into partnering districts' planning (budget, yearly professional development) and systems for support (demonstrated capacity to coach). Second, we are limited by the current need for a coach to continue on-site, in classroom support to teachers. Coaches need cost and time effective methods to support teachers. To address this, we will develop *Implementation Supports* using the TORSH Talent system and the CW-FIT website supports.

STRATEGY: Build a *District Coaching Model* (strategies 1.1-1.4 Table 2 pg. 7). With a CW-FIT *District Coaching Model*, school districts will build capacity and grow the use of CW-FIT throughout their schools. Developing a *District Coaching Model* will establish sustainable training supports, as the *District Coaches* can train within their district and can provide the face-to-face technical assistance and support that is cost prohibitive for districts to sustain with external coaching. Table 3 below outlines the *District Coaching Model* components to be developed and revised throughout the project.

Table 3. *District Coaching Model*

District Coaching Model	
Activity	**Description**
Identify District Coach	District Coaching Nomination Form. Criteria for coaches, along with roles and responsibilities will be established and revised with district leaders to establish a procedure to carefully select and nominate the personnel who are the most qualified for the position of District Coach. District Coaches will be existing school personnel such as instructional coaches, school psychologists, and district behavioral coaches.
Initial Training	District Coaches trained by National Trainer in 3-day initial training, learning how to provide teacher training, in-class coaching, Tier 2 supports and to use the TORSH system to monitor implementation and fidelity as well as to provide coaching. Coaches attend training and each coach demonstrates 90% or greater on Coaching Mastery Assessment
Consultation	Consultation with National Trainer to District Coaches 1 x Week in first Month and then Monthly for initial implementation year. Individualized solutions for school level implementation are addressed. National Trainer Activity Logs record 80% or greater participation by District Coaches

STRATEGY: Develop *Implementation Supports* (strategies 2.1-2.4 Table 2 pg. 7). To successfully build *Implementation Supports,* to increase the scalability and sustained use of CW-FIT, we value being a learning organization and our collaboration with TORSH. We are collaborating with TORSH (Todays One Room School House), an innovative Professional Development Company. TORSH Talent (see https://www.torsh.co/classroom-observation-tools/torsh-talent/), is TORSH's professional development system that will provide a secure online platform for District Coaches and participating teachers to store, share and manage generated content. Teachers will record themselves (with iPads instantly uploading to secure site) implementing CW-FIT and District Coaches will be able to review videos and offer timely actionable feedback. The TORSH system allows Coaches to add time-synced text feedback and audio notes to videos. The system also allows Coaches to complete online fidelity forms and provide open comments to teachers (see Appendix H for screenshots).

Table 4 below includes descriptions of *Implementation Supports* to be developed and adapted throughout the project. Appendix H includes samples Screenshots of the TORSH system.

Table 4. *Implementation Supports*

Implementation Supports	

TORSH *Implementation Supports*	TORSH Talent System will serve as a centralized cloud-based system for District Coachers to: collect teacher videos, score fidelity, provide feedback and reporting on CW-FIT implementation. (<u>See also Screenshots of TORSH Talent System in Appendix H</u>)
	• Coaching Log
	   o Video-based observation tool for coaching feedback
	• Implementation Fidelity Form
	   o Score Teacher fidelity
	• Implementation Tracking with TORSH
	   o Documentation of training events and attendance
	   o District Coaches along with SRI (and separately, CW-FIT Staff) Track teacher implementation When was CW-FIT used? How often? Fidelity over time and across teachers
	   o View class-, school-, or district-wide implementation progress reports to aid in early identification of classes in need of additional support

CWFIT Website *Implementation Supports* www.cwfit.ku.edu	www.cwfit.ku.edu will serve as an ongoing resource for coaches and teachers.
	• Access the most current CW-FIT implementation and training resources
	   o PowerPoints for training teachers
	   o Demonstration videos to help with training teachers
	• District Coaching Manual
	   o Readiness Assessment (for schools to assess readiness for CW-FIT and to be used in future scaling of CW-FIT)
	   o Fidelity Form for Coaches to complete online after watching teacher uploaded videos
	• Online resources
	   o Downloadable lesson scripts, posters, point sheets, Tier 2 materials, problems and solutions guide, reinforcement menu suggestions

(2). The Increased Efficiency to Improve Results and Increase Productivity.

The proposed project aims to increase efficiency in terms of time, costs and resources. <u>Time:</u>

Utilizing District Coaches and the TORSH system will allow for efficiencies in how teachers learn to

implement CW-FIT. District Coaches will be able to provide coaching and feedback based on

uploaded teacher videos. A District Coach will be able to save time driving to individual schools and

scheduling observations. Moreover, implementing CW-FIT typically results in reduced time spent

in student discipline, freeing up even more time for instruction. <u>Cost</u>: Training District Coaches who will be able to train, coach and monitor the fidelity of teacher implementation builds district capacity and is expected to be more cost effective than hiring external coaches. A school's initial investment typically includes materials (e.g., posters) and initial teacher training by an external coach. SRI, as the independent evaluator for the project, will carefully examine all costs associated with the project although increased efficiencies are expected, as a teacher implementing with fidelity can efficiently support many high-needs students. <u>Resources</u>: District Coaches will have online access to all training materials and a Coaching Manual. Coaches will also have immediate access to resources for teacher implementation (e.g. downloadable posters, lesson scripts).

(D) ADEQUECY OF RESOURCES AND QUALITY OF THE MANAGEMENT PLAN

(1). The Management Plan to Achieve the Objectives of the Project on Time and Within Budget, with Clearly Defined Responsibilities, Timelines and Milestones for Project Tasks.

The management plan with goals, objectives, measures, activities, timelines and responsible personnel has been provided below (See Table 5 below and measures for objectives Table 2 pg. 7)**.** Our teams for implementation (KC/SF Sites along with district partners) and for evaluation (SRI) are well prepared to achieve the objectives of the project on time and within budget. Each Site have budgeted contributions to the 10% contributed funds required for this competition (see Personnel below, Vitae and Budget Justifications). Between us, we have decades of successful project management, including large efficacy trials and multi-site training and evaluation efforts. We have repeated funding from such agencies as IES, NIH and OSEP showing the accountability we have demonstrated and the integrity that we carry out funded work. SRI has successfully evaluated projects from various agencies including EIR.

Table 5. *Objectives, strategies & project personnel*

Strategy		YR1 F	YR1 W	YR1 SP	YR1 S	YR2 F	YR2 W	YR2 SP	YR2 S	YR3 F	YR3 W	YR3 SP	YR3 S	YR4 F	YR4 W	YR4 SP	YR4 S	YR5 F	YR5 W	YR5 SP	YR5 S	Personnel
Goal 1. Increase the scalability and sustainability of CW-FIT																						
Objective 1: Implement Strategy to Scale with High Quality with continuous feedback and fidelity data to improve																						
Strategy 1.1.	Identify District Coaches	✓	✓																			KC,SF,LT,SP
Strategy 1.2.	Recruit Coaches	✓	✓																			KC,SF,LT,SP
Strategy 1.3.	Conduct Initial Training of District Coaches			✓	✓																	KC,SF,LT,DC
Strategy 1.4.	Distance Consultation to District Coaches		✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓						LT
Strategy 1.5.	Revise coaching materials and procedures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			KC,IT,AB,LT
Objective 2: Implement CW-FIT with the *District Coaching Model* and continuously use feedback and fidelity data to revise the Model and the *Implementation Supports*.																						
Strategy 2.1.	District Coaches conduct initial training		✓			✓	✓															DC,KC,SF
Strategy 2.2	Intervention teachers implement CW-FIT					✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		DC
Strategy 2.3.	Online coaching and fidelity feedback					✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓		DC,KC,LT
Strategy 2.4.	District Coaches guide Tier 2 procedures						✓	✓			✓	✓			✓	✓			✓	✓		DC,KC,SP
Strategy 2.5.	Revise coaching procedures			✓	✓		✓	✓				✓				✓						IT, KC,AB
Goal 2. Contribute to the CW-FIT evidence-base																						
Objective 3: Conduct an Independent Implementation Evaluation and RCT																						
Strategy 3.1	Recruit 24 schools.						✓			✓				✓								KC,SF,DC
Strategy 3.2.	Randomization of schools						✓			✓												ET
Strategy 3.3.	Collect pre- and post-measures									✓			✓	✓			✓	✓			✓	ET
Strategy 3.4	Collect sustainability data												✓	✓			✓	✓			✓	ET
Strategy 3.5.	Analyze data and evaluate the impact							✓	✓			✓	✓	✓	✓	✓	✓	✓				KC,IT,ET,AB
Objective 4. Disseminate Project Findings and the *District Coaching Model* for CW-FIT																						
Strategy 4.1.	Plan for sustainability from day one	✓				✓				✓				✓				✓				KC,SF,DC
Strategy 4.2	Disseminate with districts & novel districts													✓				✓	✓	✓	✓	KC,SF,AB, ET
Strategy 4.3	Continue Scaling																	✓	✓	✓	✓	KC,SF,DC,SP
KC=Kansas City Team; SFD=San Fransisco Team; LT=Lead Trainer; ET=SRI Evaluation Team,DC= District Coaches; IT= Implementation Team; SRI;School Personnel=SP																						

The Roles and Responsibilities of Partners. The KC Site Team will be responsible for implementation tracking and SRI will be responsible for conducting the evaluation. Ensuring ongoing feedback and continuous improvement and strong communication will include: meetings to coordinate, review feedback (e.g., Teachers, Trainers and Behavior Support Teams) and records, timelines and milestones. Implementation of key activities will be monitored and tracked per the due dates, performance, and personnel responsible. District Coaches will complete and submit coaching logs into the TORSH system that will be reviewed on an ongoing basis by the KC *CW-FIT* Staff. The coaching log tracks coaching time and the content of the coaching, along with the teacher(s) who are trained. As the lead applicant, Dr. Wills will oversee all aspects of implementation and will coordinate evaluation with the external evaluator SRI team led by Dr. Carl Sumi (see Table 6 below).

Table 6. *Project Personnel*

Implementation Personnel*	
Key Personnel, Title	**Role**
Dr. Howard Wills, *Project Director*	Direct Project including leading implementation and coordination with SRI to ensure timely completion of randomized controlled trial and project evaluation activities. Will oversee budgetary monitoring, development and collaboration with *Site* Directors.
Dr. Peter Alter, *Outreach Site-Director (San Francisco)*	Direct *recruitment and coordinate* activities in San Francisco. Responsible for coordinating with district partners training and implementation, reporting and budgetary oversight.
Jackie Millin, *Lead National Trainer*	Lead training of District Coaches. Provide technical assistance (utilizing *Implementation Supports*) to *District Coaches*. Lead Distance Consultation Meetings with District Coaches.
Jenne Bryant, *Finance Coordinator*	Oversee all fiscal and budgetary management.
April Fleming, *Public Relations Coordinator*	Responsible for social media, news releases and marketing coordination. Also coordinates support from the Life Span Institute Communications Department.
Dr. Jay Buzhardt *Director of Implementation Supports Development Team*	Responsible for directing the Technology Team's development of *Implementation Supports coordinating with TORSH* and the TIDR Lab. Conduct weekly team meetings to review completed tasks, problem solve and plan upcoming tasks.

Evaluation Personnel- SRI*	
Dr. Carl Sumi, *Evaluation Director*	Supervise project staff, serve as the liaison with school district personnel and school staff and lead technical discussions and decisions, data analyses and reporting/dissemination activities along with overseeing the cost analysis.
Dr. Xin Wei, *Lead Analyst*	Lead quantitative analyst, responsible for the random assignment process and data analysis activities.
Dr. Betsy Mercier, *Evaluation Co-Director (KC and SF Sites)*	Oversee and supervise on-site data collection field staff, oversee project management and deliverables, contribute to data analysis and participate in disseminating activities.

*See Vitae in Appendix B and Director Descriptions below in Capacity of Personnel

In addition to these implementation and evaluation personnel, district and school-based staff (to be determined and identified upon funding) along with an advisory board will contribute to the success of the project.

District and School-based Staff. Participating CW-FIT schools will utilize an existing school Behavior Support Team such as a Multi-Tier Systems of Support Team or a similar team including school leadership, general education teachers and personnel such as a School Psychologist or Counselor. These teams will conduct regular meetings (at least monthly) and will review CW-FIT Program Monitoring data with the support of District Coaches. Participating schools will also identify a School Liaison to be a primary contact with the District Coach, SRI and CW-FIT Staff. Two District Coaches will be identified for each district from existing personnel (Each Site has budgeted to support district and school participation see Budget Justifications).

Advisory Board Role and Members. Our Advisory Board (AB) includes expertise well suited to inform the development of *Implementation Supports* and the *District Coach Model.* Dr. Joe Wehby, Associate Professor Vanderbilt, brings expertise in youth with behavior disorders and multi-component interventions. Dr. Debra Kamps is currently an independent educational consultant and has multiple years of coaching and training experience with CW-FIT, having been one of the original developers. Dr. Paul Caldarella, Associate Professor Brigham Young

University, specializes in evidence-based interventions and is the director of the BYU Positive Behavior Support Initiative. Dr. Benjamin Mason is an Independent Educational Consultant and Assistant Professor of Special Education at Purdue University. Dr. Mason provides Education expertise in self-management and Tier 2 interventions. Wehby/Caldarella/Kamps/Mason will also provide feedback from prior CW-FIT study schools. The AB members have committed to quarterly video conference calls and ongoing review and feedback of developed **District Coaching Model** procedures and **Implementation Supports**, along with yearly in-person meetings.

 (2). The Capacity of Personnel, Resources and Management to Bring the Project to Scale.

The Personnel are Highly Qualified to Bring the Project to Scale. Directors:

Dr. Howard Wills (Project Director). Dr. Wills developed CW-FIT at Juniper Gardens Children's Project (an urban community-based program of the University of Kansas). He has over a decade of experience with CW-FIT, having conducted trainings for schools across the country. Dr. Wills has led numerous federal education projects including two efficacy trials of CW-FIT. He has extensive administrative experience and an MBA with a management emphasis.

Dr. W. Carl Sumi (Evaluation Director- SRI). Dr. Sumi is a Principal Researcher and has experience with large scale RCTs as co-PI of the IES-funded effectiveness study (Goal 4) of Tools for Getting Along and the efficacy study (Goal 3) of the Foundations program. Dr. Sumi was Co-PI for the Cognitive Behavioral Intervention for Trauma in Schools, Check & Connect and First Step to Success studies funded by IES. Dr. Sumi has more than 25 years of experience from direct service to research and statewide policy development.

Dr. Peter Alter (Outreach Director). Dr. Alter is an Associate Professor of Special Education at St. Mary's College of California. A former special education teacher, he specializes in teaching effective practices to classroom educators. Dr. Alter has published widely on school-based interventions and is a co-author of a popular textbook on classroom management.

Dr. Jay Buzhardt (Director of the *Implementation Supports* Development Team). He has <u>over 15 years of experience in research and development</u> while supervising the staff of the Technology Innovation Development & Research (TIDR) Lab at KU, which develops tools to support large-scale implementation of evidence-based practices.

The Resources are Sufficient to Bring the Project to Scale. SRI, The KC and SF CW-FIT teams have demonstrated resources necessary to bring the project to scale. The lead applicant organization of Project Director Dr. Wills is Juniper Gardens Children's Project an urban community-based research program with over 50 years of research and program development in close partnership with school districts. A faculty of 12 Ph.D. level researchers maintain active research programs across 23 externally-funded projects.

The TORSH Talent System, a key resource for this project, is an online professional development platform that has HIPPA level security protections. TORSH is capable of taking CW-FIT to scale allowing efficiency in a branded, secure cloud-based community. TORSH will allow District Coaches to Observe (teachers), Measure (the fidelity and implementation of CW-FIT), Coach (teachers at scale), and Coordinate (all teachers training events, coaching and feedback).

The TIDR Lab staff will document and manage development, revisions, debugging and maintenance tasks using the open-source, cloud-based GitLab® code repository and monitoring system. GitLab® is an industry standard used by top developers worldwide (e.g., AT&T, IBM, Expedia, NASA, etc.). Access to this enterprise-level system is provided through a shared KU license. The TIDR Lab will lead the maintenance and posted revisions of the CW-FIT website *Implementation Supports* and coordinate with TORSH.

The Management Organizational Structure and Communication Strategies are Well Established to Bring the Project to Scale. Figure 3 below presents the organizational structure for the project.

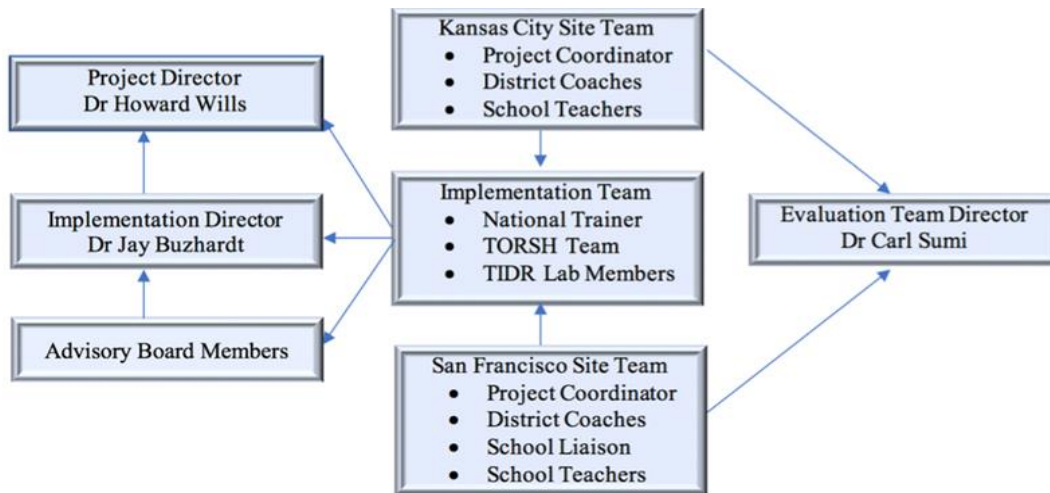Figure 3. *Management/Organizational Structure and Communication Strategies*

Table 7 below provides the ongoing communication strategies for the successful execution.

(3). The Potential for Continued Support of the Project after Funding Ends.

CW-FIT is highly likely to continue in the partnering districts following project funding if proven effective. The *District Coaching Model* and *Implementation Supports* will develop district capacity to continue and to disseminate to additional schools throughout their districts. Several factors contribute to the likelihood of CW-FIT being sustained and successfully disseminated following the project. **First,** sustainability planning will begin from day 1 as CW-FIT staff meet with district leaders to integrate CW-FIT into partnering districts' planning (budget including TORSH and District Coaching, yearly professional development) and systems for support (demonstrated capacity to coach). Learning from the district partners will continue during monthly consultation calls with CW-FIT staff determining which additional training and *Implementation Supports* will best contribute to sustainability. This will provide frequent opportunities to review data, discuss implications and determine modifications. If CW-FIT is proven effective, it will be feasible for districts to incorporate CW-FIT training for teachers, into existing Professional Development days and to continue a partnership with TORSH to access all of the CW-FIT *Implementation Supports*. **Second**, District Coaches and leaders will help with the multi-strategy dissemination plan including: a) partnering

Table 7. *Communication Strategies*

Meetings	Strategies Reviewed	Participants	Frequency	Procedures and Outcomes
Cross-Site Review Meetings	1.1,1.2,1.3,1.4, 1.5,2.1,2.2,2.3,2.4,2.5	KC Director, SF Director, Lead Trainer	Monthly Calls & Annual in-person	Site Directors will review project progress toward objectives by reviewing all data entered into TORSH and review problem-solutions and successes.
District Coach Support Calls	1.3,1.4,2.1,2.2, 2.3,2.4,4.1	National Trainer & District Level Coaches	Weekly during first month then monthly thereafter	National Trainer will review all teacher entered data on TORSH with District Coaches identifying any school level implementation problems and generating individualized solutions
Evaluation Team Coordination Meetings	3.1,3.2,3.3,3.4	SRI, KC Director, SF Director, District Coaches	Weekly then monthly	Directors will facilitate meeting between SRI and District Coach to schedule observations and data collections to maintain and improve the relationships that *KC/SF Site Staff and District Coaches* have with the schools.
Evaluation Team Meetings	3.3,3.4,3.5,4.1	SRI Team Members at KC and SF Site	Weekly	SRI staff review data to improve data collection and identify any need for additional staff support
TIDR Lab Staff Meetings	1.1,1.2,1.3,1.4, 1.5,2.1,2.2,2.3, 2.4,2.5	Director of *Implementation Supports*	Weekly	TIDR Lab meetings will be held weekly in Kansas City (at Juniper Gardens) to lead the iterative development of the *Implementation Supports*.
Advisory Board Meetings	1.1,1.2,1.3,1.4, 1.5,2.1,2.2,2.3,2.4,2.5	Advisory Board Members & KC Director	Quarterly Calls & Annual in-person	Advisors will review *Implementation Supports* and *District Coach Model* providing feedback Wehby/Caldarella/Kamps will also provide feedback from prior CWFIT study schools.

organizations (SRI, school district leaders and coaches and CW-FIT staff) contributing to

publications and presentations in venues designed for policymakers and practitioners; b)

sharing results and the intervention within their school district and state; and c) providing

exemplar classrooms that other districts may consult with prior to adopting CW-FIT. **Third**,

supporting broader dissemination, KU Life Span Institute Communications Department offers

support from the director of external relations who will work with our Public Relations Coordinator to disseminate news releases to education and news services. The website, cw-fit.ku.edu will house policymaker friendly research briefs, video resources and testimonials ensuring the project findings are widely accessible. Links to social media (Twitter feeds, YouTube posts, and a Facebook page) will help ensure broad dissemination and the active translation of research to practitioners.

(4). The Costs are Reasonable in Relation to the Objectives, Design and Project Significance.

The budget (see also budget justification) for this project adheres to the RFA specifications and is reasonable based on our prior work and current cost information. JGCP qualifies as an off-campus unit in a facility not owned by KU. Thus, the off campus indirect cost rate only reflects administrative costs. Funding this application increases the value of the prior Department of Education funding of *CW-FIT* by building on those investments to extend the scale and impact of the intervention. We have included in the budget, items required by the RFA including 10% contributed funds. The cost of TORSH Talent is budgeted ███████ per teacher and coach and Districts look to sustain the costs that could be as low as $██ per teacher based on the final District Coaching Model.

(E) QUALITY OF THE PROJECT EVALUATION

Implementation of the CW-FIT program in schools will be conducted in a staggered schedule across sites each year to include development schools and then two larger cohorts of schools (see Table 8). Over the course of the project, teachers in all 28 schools will implement the CW-FIT program in their classrooms. At the beginning of each school, half of the teachers will be randomly assigned to receive the CW-FIT training and half will demonstrate the variations in behavioral and instructional practices that naturally exist among classrooms and receive training in CW-FIT following completion of the comparison study (Spring of Years 3-4).

Table 8. *Implementation and Evaluation School Participation*

Implementation and Evaluation School Participation	YR 1		YR 2		YR 3		YR 4		YR 5		*	
2019 Proposed Plan	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Winter	Spring
Plan, recruit, coordinate and Train **District Coaches**	▓	▓	▓									
Development = 4 schools (2 KC, 2 SF)			▓	▓								
Development Follow Up					▓	▓	▓					
Cohort 1 n = **12** schools (6 KC, 6 SF) Study Schools					▓	▓						
Cohort 1 Follow Up							▓	▓	▓	▓		
Cohort 2 n = **12** schools (6 KC, 6 SF) Study Schools							▓	▓				
Cohort 2 Follow Up									▓	▓		
Dissemination within District and Region									▓	▓	▓	▓

A minimum of six general education classrooms (two each from 3rd through 5th grade) will participate in each school. Over the three years of implementation, 24 schools (not counting the 4 initial development schools) will participate, 12 schools at each site. This recruitment plan allows for independent replications over multiple years and sites. Participants for the randomized controlled trial study will include 144 general education classes (Gen Ed) and 3,600 students (see Evaluation Plan below). For analyses of the major research questions contributing to project outcomes, data from the two large cohorts of schools, teachers, and students will be pooled, each having completed a parallel implementation a year apart, with follow-up for 2 years in each school (1 year for schools starting in year 4) to promote and evaluate sustainability of the CW- FIT intervention.

SRI will conduct an independent evaluation of the implementation and efficacy of the CW- FIT model to answer nine research questions: (1) Do classes receiving the CW-FIT intervention demonstrate more academic engagement compared with control group classes? (2) Do teachers implementing CW-FIT demonstrate more effective classroom management skills, more praise and fewer reprimands than teachers in a control group? (3) Do students who receive CW-FIT demonstrate improved academic outcomes (state assessment scores) compared to students in control classes? (4) To what extent is the impact of CW-FIT academic engagement and teacher behavior measures moderated by teacher/classroom and school characteristics? (5) To what extent is the impact of

CW-FIT on student achievement moderated by student, teacher/classroom, and school characteristics? (6) To what extent is the impact of CW-FIT on student achievement mediated by the quality of teachers' behavior? (7) To what extent is CW-FIT implemented with fidelity? (8) What are the factors that hinder or facilitate the implementation of CW-FIT? (9) Do District Coaches demonstrate fidelity to the *District Coaching Model*?

(1). Producing Evidence to Meet What Works Clearinghouse Standards.

SRI evaluators have extensive experience designing and conducting evaluations to meet WWC Evidence-Based Standards. The proposed evaluation includes a blocked cluster randomized controlled trial (RCT) of a large, multisite sample of at least 3,600 elementary school students and 144 teachers/classes from 24 schools in two geographically diverse, high-need regions. Blocking by school and grade level, 144 teachers/classes from two cohorts will be randomly assigned to the treatment or "business-as-usual" control condition, which will provide sufficient statistical power to detect the impact of CW-FIT on key teacher, classroom, and student outcomes (see power analysis). Based on our prior experience with cluster RCTs of CW-FIT, we expect minimal teacher-level attrition and 15% student-level attrition; this study will produce strong evidence about the impact of CW-FIT that will likely meet the WWC standards without reservations.

(2). Providing Guidance for Replication and Testing in Other Settings.

Data from this evaluation will provide evidence of the ability of school-based staff to implement and scale CW-FIT model across diverse settings by (1) including a large sample representing two very different regions, Kansas City and San Francisco, which are diverse in location, urbanicity, size, and student characteristics; (2) examining whether the impact of CW-FIT varies by different characteristics of students, teachers, classrooms, and schools; (3) collecting and analyzing rich and high-quality program implementation and fidelity data from multiple sources; and (4) including a cost analysis to provide valuable information about the cost-effectiveness of the program.

Diverse Settings and Samples. The two participating regions include a large number of high-need schools and students (See Table 1 for description of the districts and Appendix C for district letters of support). Such diversity will support the broad generalizability of feasibility of implementation, and the expected effectiveness of CW-FIT in other classrooms in the U.S. SRI will recruit all teachers in general education classes in grades 3-5 in participating schools. Teachers who provide signed consent to participate will be randomly assigned to the intervention or control group (stratified by grade level). Based on our prior studies of CW-FIT, we expect minimal barriers to participation, yet in compliance with the General Education Provisions Act Section 427, see Table 9) .

Understand Differential Impact. To examine potential moderators of treatment, school-, classroom-/teacher-, and when appropriate, student-level moderators will be incorporated into HLM models via within- and cross-level treatment-by-moderator interactions. Moderating factors

Table 9. *Potential Participation and Recruitment Barriers*

Potential participation and recruitment barriers:	Solutions:
Schools can have multiple initiatives going on at once and sometimes have difficulty understanding how to integrate a new or innovative program and school or district leadership may change their mind and decline participation.	PIs and Project Directors will meet frequently with district and school staff to ensure buy-in and get their feedback on study activities and implementation. Study staff will demonstrate how CW-FIT can be integrated into classrooms and simultaneously help meet school and district goals (e.g., improved student behavior, academic engagement etc).
Urban teachers often have financial strains that make volunteering any out of school time for training unmanageable and this could lead to lack of participation.	We have budgeted stipends to compensate teachers for any off-contract, out of class time.

will include school characteristics (cohort indicator, school size, percentage of minority students, percentage of students receiving free or reduced lunch), percent classroom measures of CW-FIT fidelity, other classroom/teacher characteristics (e.g. teacher experience, baseline achievement level, probationary status, and class size), school context (e.g., structures of support such as such as school teams to support interventions, use of data to make decisions and professional development provided as measured by the TFI), and student characteristics (e.g., gender, ethnicity, free or reduced lunch status, special education status, and baseline achievement level). Results from these moderation

analyses will be crucial in guiding future efforts to scale CW-FIT, as they may identify settings and populations for which the program is particularly effective or not well suited.

Analyses of Fidelity of Implementation Data. The TORSH platform will provide a rich set of fidelity of implementation data (including coaching logs, consumer satisfaction surveys for both treatment and control teachers, a fidelity form) along with the Tiered Fidelity Inventory (TFI) (see Table 10 below). After analyzing these data, we will examine not only fidelity of implementation of the CW-FIT (e.g., the dosage and quality of District coaching, teacher satisfaction, and effective implementation across diverse settings) but also the scaling strategy (e.g., the selection of sites, coaches, and teachers, training, monitoring, and support structure).

Cost Effectiveness. The proposed study of the CW-FIT intervention creates the opportunity to determine the program's cost effectiveness and how to make it more cost effective. Through analysis that compares the cost of the program to the achieved outcomes on a per unit basis, this evaluation can provide policy makers with useful information upon which to make decisions regarding the allocation of resources, which in turn will affect program sustainability. For both the treatment and control groups, SRI will collect costs of staff time, equipment, and facilities using the ingredients method (Levin, McEwan, Belfield, Bowden, & Shand, 2017). Data on costs of start-up and ongoing implementation will be collected for CW-FIT and the control group to estimate annual costs. Annual costs will be reported at the per-student and per- school level, as well as in the form of total costs. SRI will develop a preliminary list of ingredients and associated cost estimates in year 1 and use these data to refine survey items to ensure inclusion of all required cost estimates. The costs of using CW-FIT will be compared with the costs of "business-as-usual" practices. Cost data will be analyzed using tools compatible with the Institute of Education Sciences-funded Cost Tool Kit (*https://www.cbcsecosttoolkit.org*). SRI will employ cost-effectiveness ratios (CE ratio) to compare the cost of program inputs to student level outcomes that can be achieved for those costs. A

CE ratio is an expression of the costs relative to outcomes. The denominator is most often the average impact, measured in terms of student achievement or another student level outcome. To inform policy decisions, the CE ratio for CW-FIT will be compared to the CE ratio for the control group.

$$\text{CE ratio} = \frac{\text{cost}_{\text{new strategy}} - \text{cost}_{\text{current practice}}}{\text{effect}_{\text{new strategy}} - \text{effect}_{\text{current practice}}}$$

(3). Providing Valid and Reliable Performance Data on Outcomes.

The evaluation will provide valid and reliable data using direct observations of engagement, classroom management, teacher feedback, and implementation fidelity. The methods will largely follow those described in prior CW-FIT efficacy studies (e.g., Kamps et al., 2015; Wills et al., 2018).

Human Subjects. All students in classes randomized to the CW-FIT condition will participate in the classroom-based activities, however, no student level data will be collected in classes, only de-identified academic outcome data collected at the end of each year. SRI will obtain consent from participating teachers. All data will be stored on secure servers.

Evaluation Measures (Table 10). SRI will conduct direct observations in classrooms (two pre- and two post-intervention) and collect surveys completed by the teachers. As in a prior CW-FIT study (Wills et al., 2018), observers will use paper-pencil forms to collect observation data and fidelity.

Data Analysis. To understand the impact of CW-FIT on classroom-level outcomes (engagement, classroom management, and teacher feedback), we will use a two-level hierarchical linear modeling (HLM) (Raudenbush & Bryk, 2002) with classrooms nested in schools. To understand the impact of CW-FIT on student achievement, we will use a three-level HLM (students-classrooms-schools). To align with the random assignment procedures, treatment effects will be estimated at the class/teacher level. Additionally, classroom-/teacher-, school-, and when appropriate, student-level covariates will be included to reduce residual error and increase power. Treatment-by-moderator interactions will be added to HLM to examine potential moderating effects. The HLM specification (Table 11 below) will

Table 10. *Data Collection Components and Timing*

Component	Measure	Description of Measure	Timing
Student Outcomes- Class-Wide			
Student Engagement	Time sampling procedure (see Kamps et al., 2015)	SRI observer records a plus for each team of students if all students in the group are on task (every 30 seconds of 20-minute observation). Reliability scores for engagement data averaged 80–85% in prior efficacy study (Kamps et al., 2015).	Fall and spring of CW- FIT intervention year
State Assessments	State Test Scores	De-identified Math and Language Arts State Assessment Individual Student Scores (for all students in participating classes).	
Teacher Outcomes			
Classroom management	Classroom Atmosphere Rating Scale (modified from Wehby, Dodge, & Greenberg, 1993).	SRI observer completes 9-item measure on procedures that influence engagement (e.g., teacher feedback, expectations). This scale measures the observer's impression of the classroom climate (use of feedback, expectations, transition ease). Prior studies showed good internal consistency, a standard alpha coefficient of .94 to .95 (Barber, Maggin, & Wehby 2009), and reliability in prior studies averaged 85.6%.	
Teacher feedback	Frequency counts of praise, reprimands	SRI observer records frequency counts of teacher's verbal praise and reprimands during the 20-minute engagement data session. Reliability scores for teacher behavior averaged 90-95% in the efficacy study (Kamps et al., 2015).	
Implementation Fidelity and Sustainability			
Implementation/ Sustainability Fidelity	CW-FIT fidelity measure	SRI observer completes 9-item fidelity of CW-FIT intervention components (e.g., skills displayed on posters, points awarded, etc.) Mean reliability in previous studies was 97.6% (Kamps et al., 2015).	Each spring
Support Structures	Tiered Fidelity Inventory (TFI)	SRI trained observer completes the TFI to identify existing infrastructure and resources that support school's implementation of tiered interventions. Strong evidence for usability, interrater reliability, and test-retest reliability for the TFI. The ICCs for interrater reliability across all raters, all tiers, and all items were all .99 (McIntosh et al., 2017).	Each spring once school's start
Teacher survey	Consumer satisfaction questionnaires	All CW-FIT and control group teachers will complete an online survey (administered by SRI) rating satisfaction with CW-FIT training and coaching (if applicable), and the amount, type and level of coaching support they received during the year.	Each spring
Coaching log	Coach log	All coaches log monthly coaching activity in the TORSH system. Ongoing records of coaching feedback and fidelity will be used to verify coaching log and will be available to SRI through TORSH.	Monthly
Effectiveness of Training for	Coaching Mastery	District Coaches will complete an online CW-FIT mastery assessment following CW-FIT training by	Following District Coach

District Coaching Model	Assessment; District Coach evaluations of coach training	national coaches. District Coaches will complete an online evaluation of the CW-FIT training they received.	training (Yrs 3 and 4)
Fidelity to *District Coaching model*	National Trainer Activity Logs	National trainers will complete, through the TORSH system, an activity log following each coaching session with District Coaches.	Weekly for first month of CW-FIT and then monthly (Yrs 3 and 4)

be used to estimate treatment effects on student achievement. State standardized ELA or Math assessment scores in Spring will serve as the dependent variable, while prior year's scores on the same assessment will be included as a student-level covariate[1].

Power Analysis. We conducted a power analysis estimating the minimum detectable effect size (MDES) for HLM analyses using the methodology in Schochet (2008). All calculations used the standard power level of .80 with a two-sided alpha of .05. The MDES is 0.298 for classroom-level outcomes and 0.16 for student-level outcomes. Previous efficacy study (Kamp et al., 2015; Wills et al., 2018) data suggest a classroom-level intra-class correlation (ICC) of around .15 (Additionally, effect sizes from two previous RCTs studies reported moderate-to-large effect sizes of 0.59 for decreases in problem behavior and 1.08 for increases in engagement of 1.60 for increases in class-wide engagement, 2.58 for increases in classroom management, 1.70 for increases in praise, and 0.35 reduces reprimands (Kamps et al., 2015; Wills et al., 2018). The MDES calculated for the current study fall below those found in the efficacy study. Thus, the proposed research design is well powered for detecting treatment effects on outcomes measured on both students and classrooms/teachers. (See Appendix H for Tables).

(4). Articulating Components, Mediators, Outcomes and Thresholds for Implementation.

The proposed evaluation is designed to align with the components of the logic model. Each evaluation measure addresses a component of the logic model's intermediate or long-term student and

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[1] Because two states administer different ELA and math assessments, we will convert assessment scores to z-scores for each state before we put them into the HLM (May et al., 2009).

Table 11. *HLM Specification* <u>*Level 1: Students*</u>

$Y_{tij} = \pi_{0ij} + \pi_1(\text{student\_cov\_1}_{ij}) + \pi_2(\text{student\_cov\_2}_{ij}) + \dots + \pi_w(\text{student\_cov\_w}_{ij}) + e_{tij}$
where Y_{tij} is the outcome of student t in classroom/teacher i in school j; π_{0ij} is the random, adjusted mean outcome in classroom/teacher i in school j; $\pi_1 - \pi_w$ are the fixed effects for the *w* student covariates/factors, and e_{tij} is the level 1 random effect.

<u>*Level 2: Classrooms/Teachers*</u>

$\pi_{0ij} = \beta_{00j} + \beta_{01}(\text{treatment\_status}_{ij}) + \beta_{02}(\text{teacher\_factor\_1}_{ij}) + \beta_{03}(\text{teacher\_factor\_2}_{ij}) + \dots + \beta_{0n}(\text{teacher\_factor\_n}_{ij}) + r_{0ij}$
where β_{00j} is the random, adjusted mean classroom outcome in school j; β_{01} is the fixed effect of treatment; $\beta_{02} - \beta_{0n}$ are the fixed effects for the *n*-1 classroom/teacher covariates/factors, and r_{0ij} is the level 2 random effect/

<u>*Level 3: Schools*</u>

$\beta_{00j} = \gamma_{000} + \gamma_{001}(\text{school\_cov\_1}_j) + \gamma_{002}(\text{school\_cov\_2}_j) + \dots + \gamma_{00k}(\text{school\_cov\_k}_j) + u_{00j}$
where γ_{000} is the adjust grand mean school outcome; $\gamma_{001} - \gamma_{00k}$ are the fixed effects for the *k* school covariates/factors including the state dummy variable; and u_{00j} is the level 3 random effect.

***We will remove the student-level from the above specification when estimating treatment effects on outcomes collected on classrooms/teachers. Baseline classroom/teacher outcomes will be included as a teacher-level covariate in this analogous specification.

classroom outcomes. The central components of the CW-FIT program are to develop a ***District Coaching Model*** with ***Implementation Supports***. The logic model also specifies intermediate teacher outcomes (i.e., classroom management and feedback skills) and key outcomes for students (i.e., engagement and achievement). The intermediate teacher outcomes mediate CW-FIT impact on student engagement, which in turn mediates the program's impact on student achievement. SRI will use structural equation modeling (SEM) to test mediation effects because of its superior ability to more properly address the presence of measurement error within a statistical model than regression models (Little, Card, Bovaird, Preacher, & Crandall, 2007).

The evaluation sets initial threshold for acceptable implementation to be 80% teacher fidelity with minimum of 3 days a week of CW-FIT. This threshold is based on prior CW-FIT research and will be informed by the project work across the varying school contexts to guide scalability and sustainability of CW-FIT. For fidelity of District Coaches, we have set an initial threshold of acceptable fidelity to be >90% including: attending training, achieving 90% on Coaching Mastery Assessment, demonstrating >80% completion of Coaching Logs and consultation meetings attendance.

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