Freshmen Success:
Implementation of Comprehensive Universal Supports for School Engagement

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A: SIGNIFICANCE

A1. Project Overview and Alignment with EIR Priorities

The Educational and Community Supports (ECS) research unit at the University of Oregon, in partnership with the University of South Florida (USF), 40 schools in Florida, and SRI International, is applying for the ***Early-Phase Education Innovation and Research competition under Absolute Priorities 1 and 4 with Competitive Preference Priorities 1 and 2***. *Freshmen Success* (*FS*) is a novel universal (delivered to all 9th grade students) intervention designed to support student access to the educational opportunities they need to succeed in high school. Our work has shown *FS* to have initial promise (*Absolute Priority 1*) in improving academic and social-emotional outcomes (███████ et al., 2020), however ***further iterative development and evaluation, implementation, and feasibility testing are needed with a larger and more diverse range of high schools and students to ensure the intervention is ready for scale-up and dissemination.*** Iterative development will focus on monitoring implementation and outcomes to ensure *FS* is efficient enough to be implemented at scale and effective across a wide range of schools and student groups.

FS provides high schools with a systems approach for improving academic and social-emotional outcomes (*Absolute Priority 4*) for <u>all</u> 9th grade students (*target population*) through the implementation of (a) school leadership teams who monitor critical academic and behavioral outcomes of 9th graders, (b) instruction using a prevention-oriented engagement curriculum, and (c) utilization of engagement-focused peer support. The ***overarching goal of FS is to optimize outcomes for <u>each and every student</u> entering high school*** and provide support needed to equip 9th graders for academic and social-emotional success so that they graduate and achieve improved longer-term outcomes. The project is well-positioned to help address the negative

impacts of racial inequity (*Competitive Preference Priority 1*) and the COVID-19 pandemic (*Competitive Preference Priority 2*), as it ensures that 9th graders begin high school with a common set of knowledge and skills on which to build their educational success, including the "hidden curriculum" that many teachers assume high school students already know.

A2. National Significance

Student dropout continues to be a major concern and is associated with many long-term negative effects on employment, earnings, incarceration, parenting experiences, and family income (McFarland et al., 2018; Sum et al., 2009, 2011). Data from the U.S. Department of Labor reflected a 50% higher average joblessness rate in May of 2019 for high school dropouts compared to graduates with no college experience (www.bls.gov/news.release/empsit.t04.htm). Importantly, there are persistent racial disparities in graduation rates. For example, the 2018-19 national graduation rate was 89% for White students, as compared to 82% for Hispanic or Latino/a/e and 80% for Black students (https://nces.ed.gov/programs/coe/indicator/coi).

Dropping out is a gradual process that begins during 9th grade (Allensworth & Easton, 2005; Benner, 2011; Somers & Garcia, 2016). The most powerful predictors of high school completion are *course performance* and *attendance* during the first year of high school (Allensworth & Easton, 2007). Students who fall behind in course completion during their 9th grade year had a 22% graduation rate, as compared to an 81% graduation rate for students who were "on track" in 9th grade (Allensworth & Easton, 2005). The study also found that 25% of students performing in the top quartile of their 8th grade class were found to be off track by the end of their 9th grade year, demonstrating that even high-performing students are often underprepared for high school and would benefit from preventive supports.

A key factor in student dropout is a lack of engagement in school (Mizelle, 2005; Neild et al., 2008). This decline in engagement is often rooted in the change in school organizational context for which students are underprepared. Such organizational struggles for transitioning students stem from the fact that they are shifting from typically smaller, more supportive middle school settings to larger high schools that are less socially flexible and more academically demanding (Flannery et al., 2014; Mizelle, 2005). Specific organizational factors shown to affect dropout include school policies, curriculum offerings, and social culture (Lee & Burkam, 2003; Lehr et al., 2003). The impact of these factors on student outcomes is striking. Research shows that students *are three to five times more likely to fail a class* in 9th grade than in any other grade (Southern Regional Educational Board, 2002). In addition, according to Jerald (2006), *low attendance* during the first 30 days of the 9th grade year is a stronger indicator that a student will drop out than any 8th grade predictor, including test scores, other indicators of academic achievement, and age. Last, socially and emotionally, students entering high school are experiencing a shift in their developmental stage, moving toward increasing independence, which often presents itself through *disengagement with adults and school*; yet they still need supports to learn expectations and routines (Metzler et al., 2008). As such, to be fully engaged and successful, students need to be taught and supported in how to (a) succeed academically and socially in the demanding high school environment, (b) self-regulate and persist in school, and (c) develop a sense of belonging, all factors of school engagement.

Current practices to support transition into 9th grade are inadequate. Most high schools provide activities such as orientations, campus tours, or special registration events, but these events do little to help students engage in their new high school communities or provide skills to be successful there (Calderon et al., 2005; Cauley & Jovanovich, 2006; Hertzog &

Morgan, 1999; McIntosh & White, 2006). Such practices are not implemented within a larger system and do not provide sufficient support through the transition year. Other common 9th grade transition supports such as mentorship, academic support classes, or behavior support programs show promise; however, they typically focus on only a small number of identified students (Cauley & Jovanovich, 2006; Neild, 2009; Sinclair et al., 2005)) and often require substantial school resources (e.g., staff time for screening, implementation, and monitoring of student progress) or restructuring (e.g., pull-out classes, freshmen academies). Last, early warning systems (extant data used to identify students in need) can predict dropout (Allensworth & Easton, 2005), but simply collecting and sharing these data will not change outcomes (McIntosh et al., 2020).

Promising practices take a preventive, skill-based approach to increase student engagement and achievement. A recent What Works Clearinghouse (WWC) report on preventing school dropout (Rumberger et al., 2017) recommended that school personnel engage in *monitoring progress of all students* and *intervening proactively* when students show early signs of attendance, behavior, or academic problems as promising practices for preventing dropout. This work is often done by a *leadership team* in the school. Additionally, *positive relationships with older peers* can be an effective component of student support practices. Such relationships can improve social-emotional outcomes like engagement, acceptance, and assertiveness (Herrera et al., 2008), as well as academic outcomes like GPA and perceived valuing of learning (Dennison, 2000; Karcher, 2005). Finally, engaging students by offering *relevant, skill-based content* that "connects schoolwork with college and career success and that improves students' capacity to manage challenges in and out of school" and providing this content with explicit instruction and support is another promising practice (WWC, 2017, p.5).

Impacts of COVID-19. The impact of the COVID-19 pandemic makes the issue of supporting 9th graders during their transition even more urgent. Research has documented the negative impacts of the pandemic on (a) motivation and engagement in schools (Pasion et al., 2021; Wester et al., 2021), (b) academic achievement (Gore et al., 2021; Hammerstein et al., 2021; Konig & Frey, 2022; Kuhfeld et al., 2020), and (c) loneliness and peer relationships (Chen et al., 2021; Zhu et al., 2022). In addition, research indicates that marginalized students (e.g., students of color) have faced more negative impacts from the COVID-19 pandemic due to institutional barriers (e.g., limited access to remote instruction; Kuhfeld et al., 2020). Although the long-term impacts of the pandemic are still unfolding, recent research demonstrates that students entering high school are at even greater risk for negative short (e.g., school engagement, course completions) and long-term (e.g., dropout) high school outcomes (Moscoviz & Evans, 2022; Zhu et al., 2022). The Office for Civil Rights found that the COVID-19 pandemic "appears to have deepened the impact of disparities in access and opportunity facing many students of color in public schools" (Goldberg, 2021). Taken together, this demonstrates that students transitioning into high school, especially students from marginalized groups, are even more at risk for school dropout due to the exacerbating impacts of the COVID-19 pandemic. ***Universal supports that do not segregate or stigmatize students and that target the most critical factors related to school engagement and retention provides promise to help address the impact of the COVID-19 pandemic and long-standing racial disparities on graduation rates***.

A3. Demonstration of Promising Strategies

Freshmen Success (*FS*) features three core components: (a) data-based decision making by a leadership team to monitor critical academic (e.g., course performance) and behavioral outcomes (e.g., attendance), (b) explicit instruction using a prevention-oriented engagement

curriculum for all 9th grade students, and (c) utilization of engagement-focused peer support from upperclassmen who share their experiences and knowledge with 9th grade students. See Figure 1.

Data-Based Decision Making by a

Figure 1. Freshmen Success Components

FS Leadership Team. Use of a leadership team in *FS* decreases the need for intensive technical assistance, builds capacity within the school to increase fidelity of
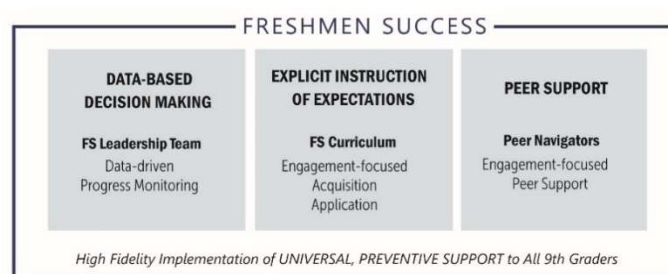
implementation, and increases likelihood of sustainability (McIntosh et al., 2018). Such a team will be established in each school and will provide leadership in implementation, develop consistent freshmen-wide policies, train staff and students on the practices and systems of *FS*, and communicate with the broader school community. The *FS* leadership team, composed of 4 to 6 school personnel (e.g., teachers, counselors, attendance committee representatives, administrators) who work with 9th grade students, meets monthly to monitor implementation and develop action plans with short- and long-term solutions to improve student outcomes and sustainability. They monitor fidelity through established implementation checklists and key on-track indicators such as attendance, behavior, and course performance (Allensworth & Easton, 2005, 2007; Rosenkranz et al., 2014) for 9th graders as a whole and for key student subgroups (race/ethnicity). Because research indicates that 9th grade attendance 30 days after the start of school can be predictive of dropout (Jerald, 2006), the leadership team will analyze attendance data at this point and respond by increasing communication, clarifying policy, and connecting students and caregivers to existing attendance supports or develop them if none exist. Of note,

the team will analyze these data to identify any racial/ethnic disparities in short-term outcomes (e.g., attendance) and develop action items as needed to narrow them.

The leadership team uses a standard tiered approach to providing intervention. When <u>few</u> students are struggling, they will refer students for targeted supports (e.g., advising supports, counseling), and when <u>many</u> students are struggling, they will focus on improving universal supports (e.g., providing a refresher of *FS* curriculum components). For example, if data reveal that 40% of the 9th grade class is receiving a failing grade at the mid-term grade report, the team may develop or utilize an already existing strategy for all 9th graders (e.g., reteach and review FS curriculum lesson on effective study strategies). In contrast, if data reveal it is for only 8% of the 9th grade class, and most of these students are Black, then the team would develop or utilize a culturally relevant targeted intervention specifically for those identified students (e.g., mentoring from a cultural liaison).

Explicit Instruction using the FS Curriculum. The *FS curriculum* is designed to (a) provide students and teachers with skills and behaviors that enable social-emotional (e.g., coping strategies, building allies, communication skills) and academic (e.g., note-taking methods, understanding credits) success in high school and postsecondary education settings (see Appendix J1). The curriculum and materials are available to treatment schools through a password-protected website. Using a train-the-trainer approach, the USF Team will train each leadership team to train their 9th grade teachers on the rationale, content, and delivery of the *FS* curriculum. These teachers then deliver the curriculum during the first semester of 9th grade in an existing course that all 9th graders take. For example, if all 9th graders are required to take a health class, then the *FS* curriculum could be delivered in that class to ensure all 9th graders receive it. In another school, there may be an advisory period that all 9th graders are required to

take, so the *FS* curriculum would be delivered in advisory period. This flexibility allows *FS* to better fit the variety of schedules and course offerings in each high school.

Peer Support through Peer Navigators. *FS* incorporates the support of upperclassmen to act as peer navigators. Again, using a train-the-trainer approach, the USF Team will train each leadership team to recruit and provide training to these peer navigators. With first-hand experience in the school setting, peer navigators (approximately two per classroom) provide coaching and support of 9th grade students by leading lesson activities, participating in panel discussions, and providing one on one coaching, all under the supervision of the classroom teacher. In this way, the peer navigators help to reduce the complexity of the school setting, decrease isolation, increase the understanding of expectations and routines, and provide increased peer support from positive role models (Herrera et al., 2008; Yeager et al., 2019).

Initial Demonstration of Promise. *FS* has some evidence of intervention promise using a small, underpowered school-level cluster randomized controlled trial (RCT) in four high schools in Oregon, with a total of 1,588 9th graders (the majority of student being White; ▮▮▮▮▮▮▮▮▮). Students in the treatment schools had higher self-reported motivation and engagement (effect sizes = .07 - .11), higher attendance (effect size = .13), and more credits earned in 9th grade (effect size = .79). We also found that, when provided with technical assistance from UO project staff, treatment schools were able to implement *FS* with high fidelity, at rates of 98% across all *FS* systems components, 92.5% for the leadership team components, 94% for teacher delivery of the *FS* curriculum, and 94% for peer navigator delivery of *FS* activities. Lastly, both team members and teachers found *FS* to be feasible and acceptable to implement. Limitations of the study included: 1) it was conducted using a small, homogeneous sample of students (59% White) and 2) it lacked evidence on what was required for scalability

and sustainability. To help address these limitations, we propose to test *FS* implementation with 40 schools (larger and more diverse) in 10 school districts in Florida using an iterative process of reviewing implementation (fidelity, acceptability) and impact data (student outcomes for all and disaggregated by subgroups [e.g., race/ethnicity]) and revising *FS* components and implementation process as needed (see Section B2 on the iterative process).
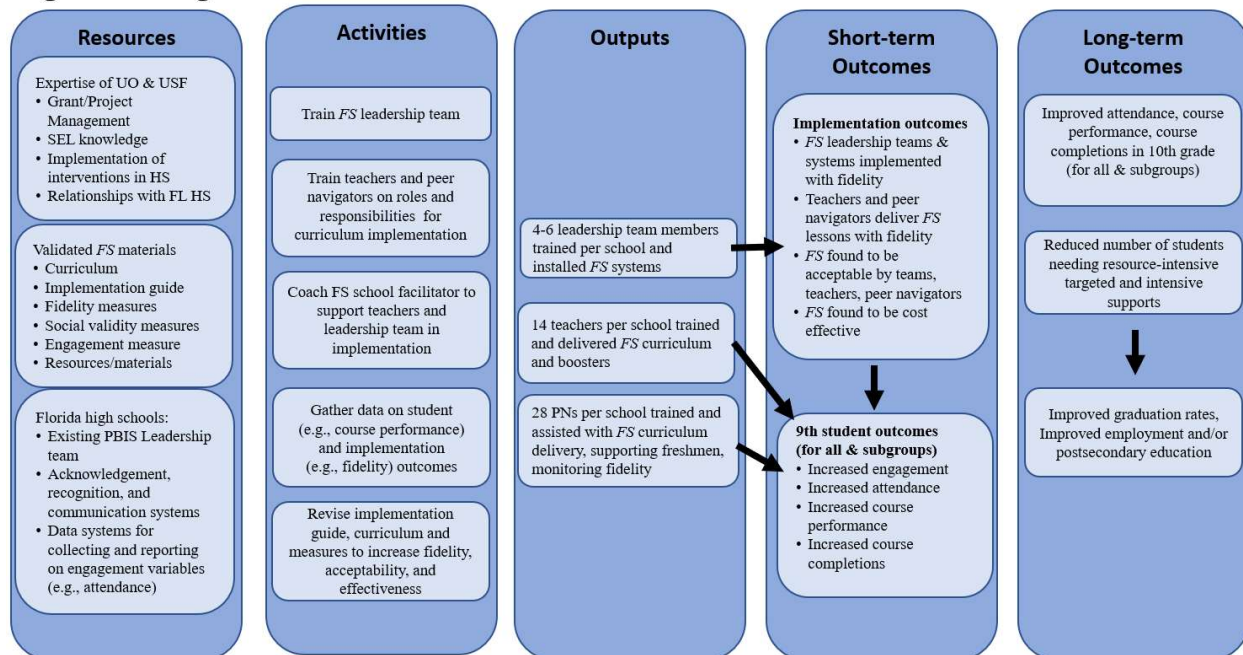
B: QUALITY OF THE PROJECT DESIGN

B1. Conceptual Framework

FS is built on existing research on both (a) student engagement for retention in high school and (b) school-wide prevention models to support success. School engagement literature incorporates multiple domains of engagement (Fredricks et al., 2004; Fredricks et al., 2011). These domains include "doing schoolwork and following rules" (National Center for School Engagement, 2006, p. 2), students' perceived relevance of school, interest in learning, willingness to apply effort to specific academic tasks (Newmann et al., 1992; Wehlage et al., 1989), ability to self-regulate (Fredricks et al., 2004) and motivation (DiPerna & Elliott, 2002), as well as students' sense of belonging, connection, and support in school (Appleton et al., 2008; Furlong & Christenson, 2008). ***The focus on school engagement recognizes the critical links among students' social, emotional, and academic development and delivers support through a preventive model***. Preventive support models have been shown to be successful in high schools by reducing maladaptive behavior, increasing attendance, and improving student access to needed interventions (Bohanon et al., 2006; ▮▮▮▮▮▮▮▮; Muscott et al., 2008). They also provide substantial benefits to existing dropout prevention and transition programming interventions (Furlong & Christenson, 2008; Hammond et al., 2007; MacIver & MacIver, 2009).

Building on this conceptual frame of school engagement and preventive support, the *FS* intervention is designed to utilize promising strategies (data-based decision making by a leadership team, explicit instruction using the *FS* curriculum, and peer support delivered by peer navigators) to achieve identified outputs and thereby support the valued outcomes of increased <u>course completion</u>, <u>course performance</u>, <u>attendance</u>, and <u>student engagement</u> (short-term outcomes), ultimately leading to improved rates of high school graduation, employment, and engagement in postsecondary education (long-term outcomes). The *FS* Logic Model, in Figure 2 and in Appendix G, illustrates how implementing *FS* with high fidelity will improve short and long-term student outcomes for the target population.

Figure 2. *FS* Logic Model

Resources	Activities	Outputs	Short-term Outcomes	Long-term Outcomes
Expertise of UO & USF • Grant/Project Management • SEL knowledge • Implementation of interventions in HS • Relationships with FL HS Validated *FS* materials • Curriculum • Implementation guide • Fidelity measures • Social validity measures • Engagement measure • Resources/materials Florida high schools: • Existing PBIS Leadership team • Acknowledgement, recognition, and communication systems • Data systems for collecting and reporting on engagement variables (e.g., attendance)	Train *FS* leadership team Train teachers and peer navigators on roles and responsibilities for curriculum implementation Coach FS school facilitator to support teachers and leadership team in implementation Gather data on student (e.g., course performance) and implementation (e.g., fidelity) outcomes Revise implementation guide, curriculum and measures to increase fidelity, acceptability, and effectiveness	4-6 leadership team members trained per school and installed *FS* systems 14 teachers per school trained and delivered *FS* curriculum and boosters 28 PNs per school trained and assisted with *FS* curriculum delivery, supporting freshmen, monitoring fidelity	Implementation outcomes • *FS* leadership teams & systems implemented with fidelity • Teachers and peer navigators deliver *FS* lessons with fidelity • *FS* found to be acceptable by teams, teachers, peer navigators • *FS* found to be cost effective 9th student outcomes (for all & subgroups) • Increased engagement • Increased attendance • Increased course performance • Increased course completions	Improved attendance, course performance, course completions in 10th grade (for all & subgroups) Reduced number of students needing resource-intensive targeted and intensive supports Improved graduation rates, Improved employment and/or postsecondary education

B2 Goals, Objectives, and Outcomes to be Achieved

Continuous Improvement Process. To achieve project outcomes and ensure it is relevant, effective, and scalable in a broad range of schools and students, *FS* must be reviewed and revised as necessary. Therefore, the project includes two phases. In **Phase 1: Review and**

Revise, a Design Team of "end users" (6 to 8 teachers recruited from treatment schools) will evaluate and document the extent to which current components and materials are (a) relevant and practical, (b) feasible to implement, and (c) meet the needs of a diverse group of students. Project staff will summarize feedback and collaborate with the Design Team to refine *FS* components and materials as needed. In **Phase 2: Implement, Evaluate, and Refine**, we will use an iterative process both within and across treatment schools. Within each treatment school, as described on page 7, USF will coach and support the *FS* leadership team to implement *FS* and conduct a continuous formative evaluation process at least monthly by monitoring fidelity (e.g., *FS* Implementation Checklist) and proximal outcome data (e.g., attendance, course performance), making midcourse adjustments as needed. Across each cohort of treatment schools, SRI will complete a formative report using quantitative and qualitative data. The UO/USF Team will utilize what was learned to further refine the components and materials for the next cohort. Using this two-phase continuous improvement process will ensure that the *FS* intervention is (a) implemented with high fidelity (given school constraints), (b) perceived as acceptable (aligns with values, ease of implementation) by school personnel and students, and (c) positively impacts 9th grade student outcomes (overall and for underserved from different student race/ethnicities; Cobb et al., 2003). Project goals, objectives, and outcomes in Table 1.

Table 1. Project Goals, Objectives, and Outcomes

Goals & Objectives	Outcomes
Goal 1: Refine existing FS components to enhance scalability	
Obj 1.1 Review and revise FS with Design Team	• Revised, confirmed FS components
Goal 2: Implement requirements across a broad range of school contexts	
Obj 2.1 Recruit and randomly assign 40 schools to matched pairs	• 40 schools with signed MOUs and randomly assigned to condition
Obj 2.2 Develop Leadership Team in treatment schools	• 4-6 leadership team members trained per school

Obj 2.3 Train teachers and Peer Navigators in treatment schools	• 14 teachers trained per school • 28 peer navigators trained per school
Obj 2.4 Implement *FS* in 20 high schools and document treatment-control contrast in 20 additional schools	• 472 9th graders in each treatment school receive *FS* • *FS* is implemented with 90% or higher fidelity using the *FS* Fidelity of Implementation Checklist (J4) and Curriculum Implementation Checklist (J5) • Standard practices documented in 20 non-implementing schools using the *FS* Treatment Contrast Tool (Appendix J3)
Obj 2.5 Document facilitators and barriers to implementation in Year 2 with Cohort 1 schools	• Facilitators and barriers to sustainability documented using an adapted Consolidated Framework for Implementation Research (CFIR) survey.
Goal 3: Improve *FS* Components to ensure fit for a broad range of students and schools	
Obj 3.1 Collect and analyze implementation data to inform iterative *FS* development	• Teachers and Leadership Team members rate *FS* average of 4.5 or higher on the Primary Intervention Rating Scale (PIRS; Appendix J6) • Yearly formative report
Obj 3.2 Revise *FS* Model to enhance scalability	• Final model design and materials (e.g., curriculum, website, training materials)
Goal 4: Improve 9th grade student outcomes	
Obj 4.1 Rigorously evaluate FS effects on student outcomes	• Collect and analyze academic and engagement data during implementation and follow-up • Examine extent to which moderators (e.g., student race, school characteristics) influenced outcomes • Study findings meet WWC standards without reservations

B3 Target Population

FS is designed to support <u>all 9th grade students</u>, regardless of skill level, along trajectories toward increased achievement and graduation rates. In this way, it provides a universal level of support and is aimed at preventing problems before they occur. It is efficient to implement *FS* for all 9th graders, as the number of students needing more targeted or intensive support will be reduced, thereby saving valuable school resources for students who need it most (McIntosh & White, 2006; VanDerHeyden et al., 2007). The poor outcomes for 9th grade

students, racial disparities in graduation rates, harmful impacts of COVID-19 on student engagement in school, and negative impact of high school dropout demonstrate a need to implement a promising intervention such as *FS* to improve student outcomes for *every* 9th grade student, while monitoring and fine-tuning for student subgroups.

In keeping with this project's goals of enhancing scalability by ensuring *FS* is relevant and meaningful to a broader student population and promoting equity and adequacy in educational opportunity and outcomes (Competitive Preference Priority 1), we will recruit schools with a more racially diverse student body than in the initial study. Appendix J8 provides demographic information on the Florida school districts from which schools will be recruited.

C. PERSONNEL

The project team members' skills complement each other to provide the content knowledge, analytic skills, and expertise in implementation in school settings necessary to deliver the outcomes needed for project success. As the lead agency, Educational and Community Supports (ECS) is committed to ensuring equal access to and treatment of individuals that have traditionally been underrepresented. Our hiring processes continue to include active recruitment of a diverse workforce. Currently 36% of ECS employees are from traditionally underrepresented groups. Resumes of Key Personnel (see Appendix B) provide detailed information on their grant management, evaluation expertise, and dissemination history.

█████ ████████ **PhD (PI/Project Director, .20 each year)** is the Director of ECS and Co-director of the Center on PBIS. ██ ████████ *will provide oversight of the project. He will chair bi-weekly team meetings to coordinate work, review results, and oversee the budget. He will be the lead contact with DOE and assess regular benchmarks to ensure project success and prepare materials for dissemination.* He has successfully managed over $70 million of federal

grant funding. He is PI of two current IES projects and was Co-PI on the previous *FS* Development and Innovation Project. All project goals for all grants have been met or exceeded.

████████████ **PhD (Co-PI, .05 each year)** is a Senior Research Associate/Associate Professor at UO with a focus on improving secondary and postsecondary outcomes for students at risk. She was a developer and PI on the *FS* Development and Innovation Project and *will serve as senior advisor to guide decisions.* She *will attend bi-weekly team meetings to communicate and advise project team members and prepare materials for dissemination.* ██ █████ currently serves as the PI of an IES grant to refine and test a high school Tier 2 intervention. She has directed 4 IES grants, 9 OSEP grants, and 3 RSA grants.

████ █████████ **PhD (Co-PI, .40 each year)** is a Research Associate at UO. *He will oversee the management plan and data collection procedures*. *He will attend bi-weekly team meetings and prepare materials for dissemination*. His research involves the implementation of social behavior support in secondary settings and implementation science in the context of systems change. He is currently the project coordinator for an IES grant examining the sustainability of Tier 2 and 3 behavior systems in schools. He was a research assistant on the *FS* Development and Innovation Project, assisting with data collection and analysis.

████ █████████ ██████ **M.S. (Project Coordinator, .715 each year)** is a Senior Research Assistant II at UO. She was a developer and project coordinator on the previous FS Development and Innovation Project, leading materials development, training, implementation, and data collection. In this project, ██ ████ *will coordinate these same activities across UO and USF and will provide training and coaching to the USF team. She will attend bi-weekly team meetings and prepare materials for dissemination*. Her research focuses on improving outcomes for youth in high schools. ██ ████ has been a project coordinator on 4 IES grants.

██████ ████████ **PhD (USF Implementation Coordinator, Co-I, .20 each year)** is a Research Associate Professor at the Florida Center for Inclusive Communities. Her research interests include MTSS and transition services and programs, and she currently provides consultation, training, and technical assistance to school districts throughout Florida. ██ ████████ *will lead a full implementation team at USF, directing recruitment, training, data collection, and coaching support to sites. She will participate in the bi-weekly team meetings.*

████████████ **PhD (SRI Lead Independent Evaluator)** *will lead the evaluation team* at SRI. ██ ███ is a Senior Principal Education Researcher and has experience with large scale RCTs as Co-PI of the IES-funded replication study BEST in CLASS, effectiveness studies (Goal 4) of Tools for Getting Along and First Step to Success, and efficacy studies of Foundations, Check & Connect, and the Cognitive Behavior Intervention for Trauma in Schools program. ██ ███ is also the PI for the EIR mid-phase evaluation of the CW-FIT program. ██ ███ has more than 25 years of experience from direct service to research and statewide policy development.

██ ███ **PhD (SRI Lead Data Analyst)** will be the lead analyst on this project for SRI. ██ ██ *will be responsible for the random assignment process and data analysis activities.* ██ ██ is currently directing the design and analysis for three EIR-funded study - Metro Nashville Public Schools Scaling Up Pyramid Model, Young Academic Music and Computational Thinking, and CW-FIT and two-IES funded studies with ██ ███ In the past, ██ ███ finished eight i3-funded evaluation studies and four IES efficacy trials, all of which received WWC rating of meet standards with or without reservations.

D: QUALITY OF MANAGEMENT PLAN

This is a joint project between technical assistance and research units at the University of Oregon and the University of South Florida. *ECS* will be responsible for fiscal and project

management. ECS has a 50-year history of developing and testing multiple educational interventions, including managing over $100 million in grants. The ***Florida Positive Behavior Interventions and Supports Project*** (FLPBIS), a unit within Florida Center for Inclusive Communities at the University of South Florida, will lead recruitment, implementation, and technical assistance for the schools in the project. FLPBIS staff have a strong history of providing training, coaching, and other technical assistance in over 60 Florida school districts in the implementation of evidence-based practices within multi-tiered systems of support. ***SRI International***, an independent, non-profit research institute, will serve as the Independent Evaluator. SRI's Education Division has a long research history relevant to this project, including implementation of numerous RCTs, and it has the infrastructure and resources to manage the data collection processes and analysis proposed in this project. SRI has extensive data-hosting capabilities to transfer the data securely from sites to SRI and the Data Services Program employs 16 statistical and applications programmers and survey coordinators to support complex data collection and analysis. Responsibilities of SRI will include e*xamining the impact of FS on school and student outcome*s using a school-level RCT designed to meet What Works Clearinghouse Standards without reservations (WWC; 2020). SRI will also *measure the extent that FS components are implemented as designed and provide formative feedback to the UO and USF teams* to guide their efforts in making iterative improvements to *FS* components and to support replication and scaling of *FS* across schools. Last, SRI will *conduct an evaluation of the cost of the FS program to schools.*

D1 Adequacy of Management Plan to Achieve Objectives on Time

The expertise and experience of the three agencies in implementation, research, and evaluation to address educational issues will ensure that the project will be implemented within

timeline and budget limitations. Effective and efficient management of the project is enhanced

through several key components: (a) specific, measurable objectives and expected outcomes that

are related directly to the services to be developed (Table 1), (b) specific activities and team

responsible (Table 2), (c) milestones and timelines for the initiation and completion of objectives

(Figure 3), (d) established relationships with school districts, and (e) web-based task-tracking

software (Asana), that utilize iterative development and stakeholder input.

The project will use a management structure to achieve goals and objectives on time and

within budget. The UO and USF Team will meet bi-weekly to monitor and discuss progress

toward accomplishing specific project objectives and activities. The SRI team lead will attend

meetings monthly to ensure data management, analysis, and evaluation are occurring according

to plan. These regularly scheduled meetings will provide the means to "pull together" the entire

scope of work for the project, implement the iterative refinement process, and keep all staff fully

informed of implementation progress and problems.

Table 2: Activities (Objectives) and Agency Responsible

Readiness for Implementation	
Recruit and screen schools for readiness (2.1)	USF & UO
Confirm schools and secure MOU (2.1)	USF & UO
Randomly assign schools to condition (2.1)	SRI
Review and revise *FS* with design team (1.1)	USF & UO
Ongoing Activities to Implement and Revise FS (Cohort 1-3)	
Train leadership team, teachers, and peer navigators (2.2)	USF
Monitor and coach leadership team (2.3)	USF
Monitor and coach delivery of 10 lessons to freshmen (2.3)	USF
Use an active feedback loop to support school FS coordinator and team (2.3)	USF & UO
Conduct iterative revision of model and materials (3.1)	UO & USF
Complete formative report to share with project team (3.1)	SRI
Finalize model design and materials (3.2)	UO & USF
Disseminate findings through diverse outlets (3.2)	UO & USF
Bi-weekly meetings with implementation team (1.1-3.2)	UO
Data Collection and Analysis	

Coordinate and monitor data collection to reduce attrition (3.1; 4.1)	UO
Collect and analyze fidelity and acceptability of FS (3.1)	SRI
Collect Business as Usual data (3.1; 4.1)	SRI
Collect and analyze student engagement, attendance, course performance, course completion *during year of implementation* across all schools (4.1)	SRI
Collect and analyze student engagement, attendance, course performance, course completion during *one year of follow up* across all schools (4.1)	SRI
Examine the extent to which implementation fidelity, mediating and moderating factors (e.g., race/ethnicity, demographics) influenced outcomes (4.1)	SRI
Collect and analyze data on facilitators and barriers to *FS* sustainability in Cohort 1 schools (2.4)	UO

Figure 3 Milestones and Timelines (Spring = Jan to June; Fall = July to Dec)
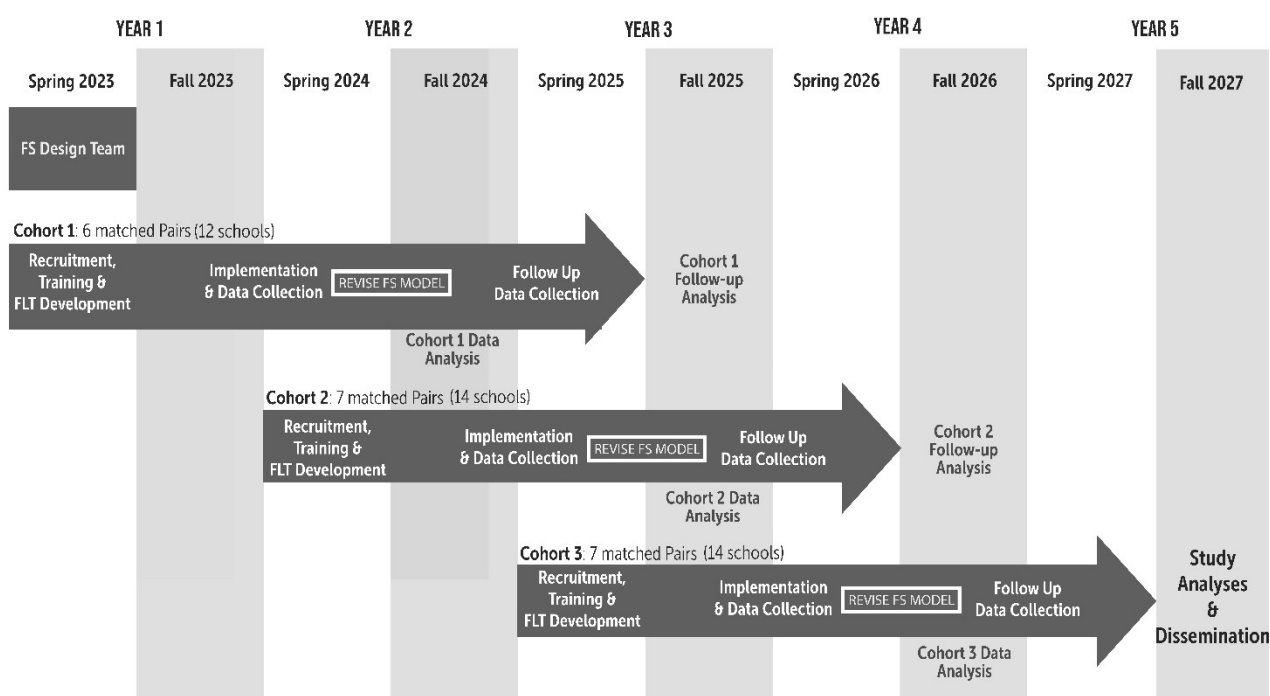
D2 Extent to which Costs are Reasonable and Adequate

The project costs are reasonable in relation to its objectives, design, and potential significance. The rationale for the specific components of the budget is presented in the budget narrative. The current project will impact approximately 18,880 students in 40 schools, and SRI will calculate cost per student. Several additional features of this project are particularly

conducive to its overall cost First, all three agencies have extensive experience in development and management of grants which will increase the likelihood of adequate identification of costs and delivery of milestones on time. Second, staff from the agencies associated with this proposal have worked together and thus will reduce the "trial and error" communication that inevitably occurs whenever groups first begin working together. USF also has worked with the school districts who will be participating.

E: QUALITY OF THE PROJECT EVALUATION

The implementation team will contract with SRI to conduct a rigorous, independent evaluation of *FS* that will address the questions in Table 3. SRI will conduct a confirmatory impact evaluation designed to meet WWC standards without reservations, using a school-level cluster RCT.

Table 3: Evaluation Research Questions

Question	Purpose
Q1. *Confirmatory Impact*	What are the effects of *FS* on student outcomes: course completion, course performance, attendance, and engagement?
Q2. *Moderation*	Do effects of *FS* vary by student subgroups (e.g., race/ethnicity)?
Q3. *Implementation*	To what extent are the key components of *FS* implemented as intended? How does implementation differ across schools? What factors support or inhibit implementation? What factors support the scaling of *FS* within and across schools?

E1. Meeting WWC Standards 4.1 Without Reservations

Research Design. Using a cluster RCT design, the impact evaluation will meet WWC Standards 4.1 without reservations. SRI will randomly assign a total of 40 schools to intervention or control conditions across three cohorts. As *FS* is a universal intervention delivered to all freshmen, randomization will happen within districts at the school level for each cohort. SRI will work with UO and USF to take proactive steps (e.g., frequently communicating with study participants, offering participant incentives) to minimize district-, school-, and student-level

attrition both overall and by study condition. SRI will examine the baseline equivalence of

outcomes. In the event of differences of 0.25 standard deviations or larger within schools

between treatment and control groups, SRI will perform statistical adjustments in accordance

with WWC standards. All our outcome measures meet WWC Review of Individual Studies

Protocol (https://ies.ed.gov/ncee/wwc/document/262).

Confirmatory Impact Analysis. SRI will use three-level Hierarchical Linear Modeling

(HLM; time nested in students and students nested in schools) to estimate treatment impact on

student engagement (Murray, 1998; Raudenbush & Bryk, 2002). The impact of *FS* will be

estimated at the school level, which is the unit of randomization. Student covariates will be

added to student level to reduce residual error and increase power. $Y_{ijk} = \gamma_{000} + \gamma_{001} * C_k +$

$\gamma_{010} * Cov_{jk} + \gamma_{100} * Time_{ijk} + \gamma_{101} * C_k * Time_{ijk} + r_{0jk} + u_{00} + e_{ijk}$, where Y_{ijk} is the outcome

score at time i for student j in school k; γ_{000} is the overall mean intercept across schools, C_k is a

binary treatment indicator; $Time_{ijk}$= 0, 1, 2 indicates baseline, posttest and follow-up scores;

γ_{101}, the coefficient associated with the interaction term of Time and treatment, is the

estimated treatment impact; Cov_{jk} are student demographic characteristics; u_{00k}, r_{0jk}, and e_{ijk}

are a school, student, and time error term. SRI will perform an intent-to-treat (ITT) analysis to

estimate the impact of *FS* on outcomes of interest, meaning the analysis will be based on original

assignment, regardless of intervention receipt. For three outcomes (course completion, course

performance, attendance) where baseline score on the same measure is not available, SRI will

conduct two-level HLM analyses (students nested schools) using post-test or follow-up score as

outcome and pre-test engagement, social economic status, and

English/mathematics scores from the fall term for the Florida Standards Assessments (FSA;

https://www.fldoe.org/accountability/assessments/k-12-student-assessment) as the covariate

following WWC Review of Individual Studies Protocol. SRI can also analyze data on whole

schools with traditional, single-level analyses with schools as the unit of analysis if necessary

(Cohen et al., 2003; Tabachnick & Fidell, 2007). To demonstrate effect sizes, SRI will report

Hedges' *g* and improvement index values, as described by the WWC (2020).

Moderation. We will extend our models to include covariates and their interactions with

the Time × Condition term for engagement outcome or their interactions with Condition for the

other three outcomes to test moderation hypotheses (Jaccard & Turrisi, 2003). One critical set of

moderation tests includes the examination of differential response to *FS* versus control based on

student characteristics, such as gender, race/ethnicity, or pre-test levels of engagement. We

expect baseline engagement to moderate the effects of *FS*, as highly engaged students will be

less likely to improve than those who begin with lower levels of engagement.

Cost Calculation. We will provide estimates of the cost required to achieve the

program's impact, relative to the status quo. SRI's cost analysis will document the costs of

implementing *FS* overall and per student by school.

Power Analysis. The school and student samples were chosen to offer sufficient power

(.80) to detect educationally meaningful impacts of *FS* on student outcomes (Cohen, 1988;

Lipsey, 1990) with conservative assumptions and after attrition. We conducted a power analysis

(see Appendix J9) to calculate the effect of the *FS* on student outcomes based on a cluster RCT

with treatment at the school level using PowerUp (Dong & Maynard, 2013). We expect 20

schools per condition and an average of 450 freshmen per school with outcome data, a Type II

error rate of 20% (β = .20), a study-wide Type I error rate of 5% for two-tailed tests of condition,

a school-level ICC of .10, proportion of variance in Level 2 outcome explained by Level 1

covariates and Level 2 covariates of .25 or 0.64, respectively, based on outcomes from our pilot

study. The MDES on student achievement outcomes is 0.25 or 0.18. We conducted the power

analysis for our moderation analysis on student outcomes using PowerUp-Moderator (Dong et

al., 2018; Spybrook et al., 2016). With assumptions of (a) a binary moderator at the child level

(e.g., Black vs. non-Black), (b) a nonrandomly varying slope, and (c) a proportion of Level-1

units in the moderator subgroup of 30%, the minimum detectable effect size difference

(MDESD) is 0.075 if 25% of the variance in outcome is explained by level-1 covariates (or 0.052

if 64% of the variance in outcome is explained by level-1 covariates).

E2. Performance Feedback and Assessment of Progress

SRI will provide formative feedback to UO after each major data collection activity to

inform implementation. The tracking and reporting of implementation fidelity each intervention

year will provide UO and partners with an assessment of how partner schools and teachers are

implementing the key components of *FS* and meeting milestones outlined in the logic model.

Findings will identify areas in which individual schools may need more support, common

barriers to be addressed across the partner schools, and promising adaptations to incorporate as

the program scales. SRI will provide UO with briefs after each year of the intervention. These

briefs will include reports of implementation fidelity and descriptive indications of impact.

E3. Key Components, Mediators, Outcomes, and Measurable Threshold for Acceptable Implementation

Several measures will be used to assess the implementation of *FS*, measure perceived

relevance and feasibility, and estimate impact on student outcomes. In addition, school, teacher,

and student demographic characteristics will be obtained for analyses (e.g., covariates) and

reporting. As described in Table 4, we plan to (a) assess student report of engagement and

motivation, (b) observe the curriculum implementation, (c) collect teacher self report of

implementation fidelity, (d) document *FS* systems implementation, (e) collect records from the school related to student demographics and outcomes by semester, and (f) collect follow-up records from the school following the year of implementation to track 10th grade progress on student outcomes. See Appendix J10 for detailed descriptions of measures and psychometric properties. We will provide detailed data collection protocols that include a management plan for each instrument to all project staff responsible for data collection. UO project staff will train USF project staff prior to data collection. The project coordinator will closely monitor data collection fidelity across sites and will provide ongoing support as needed.

Table 4. Project Measures

Outcome	Measure	Timing of Administration
Student Outcomes (Q1, Q2)		
9th student progression in high school	Calculated metric using credits earned and core course failures	End of school year
9th academic achievement in high school	Cumulative GPA	End of school year
9th attendance in high school	Rate of absence (excused and unexcused) per semester	End of school year
9th engagement in high school	Motivation and Engagement Scale - High School (MES-HS; Martin, 2016) (Appenidix J11)	First 4 weeks and last 4 weeks
Implementation (School) Outcomes (Q3)		
Implementation of non-*FS* activities	*FS* Treatment Contrast Tool (Appendix J3)	Beginning and end of school year
Leadership team and *FS* systems fidelity	*FS* Implementation Checklist (Appendix J4)	Monthly
Teacher fidelity of *FS* lessons	Curriculum Implementation Checklist (Appendix J5)	Weekly during implementation
Peer navigator fidelity of *FS* lessons	Peer Navigators Survey (Appendix J7)	Weekly during implementation
Facilitators and barriers to sustained implementation to *FS*	Adapted Consolidated Framework for Implementation Research (CIFR) Online Survey	End of school year
FS acceptability	Primary Intervention Rating Scale (PIRS; Appendix J6)	Weekly during implementation of *FS* lessons

Note. We will use Qualtrics to collect data on implementation, acceptability, and 9th grade school engagement data. We will use existing data templates to collect data on school characteristics, teachers, and peer navigators.

Student Outcomes. The evaluation's outcome measures meet WWC standards for review as they (a) demonstrate face validity, (b) show adequate reliability, (c) are not overly aligned with the intervention, and (d) will be collected in the same way for treatment and control students (WWW, 2020). See Appendix J10 for evidence of reliability and validity. Table 4 provides a summary of the outcomes, which were selected based on the logic model and guidance from the *WWC Review of Individual Studies* protocols. We will implement multiple comparison corrections for outcomes that fall under the same domain (Thissen et al., 2002).

SRI will collect three student outcome measures, through extant data available from schools, identified in the literature as early warning signals for dropout: (a) *Course Completion* (a calculated metric of being on track for graduation using both credit earned and core course failures [English, math, science, social studies]), (b) *Course Performance* (cumulative GPA), and (c) *Attendance* (rate of absence [excused and unexcused] per semester), each of which has been found to be a strong predictor of high school completion (Allensworth & Easton, 2005).

The MES-HS (Martin, 2016) will be to assess the effects of *FS* on student engagement. The MES-HS is a student self-report measure of engagement in school. The 44 items (rated on a scale of 1-7; $\alpha = .79$, test-retest = .73; Appendix J11) provide an overall score and scores on 11 subscales: Self-belief, Valuing, Learning Focus, Planning, Task Management, Persistence, Anxiety, Failure Avoidance, Uncertain Control, Self-sabotage, and Disengagement (validated by confirmatory factor analysis; Liem & Martin, 2012; Martin, 2009).

Fidelity of Implementation. We will examine *FS* implementation by collecting data from *FS* leadership teams on the implementation of *FS* systems (*FS* Implementation Checklist; 26 items; Appendix J4), school administrators on supports provided (*FS* Treatment Contrast Tool; 22 items; Appendix J3), teachers on curriculum implementation (Curriculum Implementation Checklist; 10 items; Appendix J5), peer navigators on their role (Peer Navigator Survey; 4 items; Appendix J7), and *FS* leadership team members and teachers on social acceptability (PIRS; 17 items; $\alpha = .97$; Appendix J6). Last, we will administer an online survey to the *FS* school teams will measure barriers and facilitators to the sustainability of *FS*. Questions (open and closed) will be adapted from the Consolidated Framework for Implementation Research (CFIR; Damschroder et al., 2009) to measure key constructs related to *FS* implementation.

Demographic Characteristics. To examine differential intervention effects of *FS* on student outcomes, SRI will collect school (e.g., school size, school locale, 9th grade student characteristics [e.g., gender, race/ethnicity]), teacher, and peer navigator demographic data each spring. In addition, publicly available school demographic variables, such as the proportion of students on free or reduced lunch, total enrollment, and enrollment by gender and race/ethnicity will be collected, as well as student and peer navigator demographic variables, such as gender, race/ethnicity, English language learner status, disability status, socioeconomic status, and baseline English and mathematics scores on Florida Standards Assessments). Finally, we will collect demographic data on teachers (e.g., years teaching, years at school, grade).

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