College of Education
SAM HOUSTON STATE UNIVERSITY
MEMBER THE TEXAS STATE UNIVERSITY SYSTEM

SHSU 4+1 TEACH

4+1 TEACH: Cohort 1

Partners

4+1 TEACH

An Extended Teacher Preparation Program to meet the needs of Houston area schools

May 2018

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PROJECT NARRATIVE

The proposed project—4+1 TEACH—will enhance an existing partnership between a university-based extended Teacher Preparation Program (TPP) and a consortium of nine high-needs school districts. This proposal aims to scale the project to allow for larger admitted cohorts and to include an additional five school districts that primarily serve traditionally underserved students and communities. This work addresses Absolute Priority 1 (AP1): Supporting Effective Teachers, Subparts (1), (2), and (3), as well as the Competitive Preference Priority (Promoting Science, Technology, Engineering, or Math [STEM] Education, with a Particular Focus on Computer Science [CPP]) and Invitational Priority (Support for the Use of Micro-Credentials [IP]). 4+1 TEACH draws on an extensive body of research including two studies that meet What Works Clearinghouse (WWC) standards without reservations (see Appendix A), Glazerman et al. (2006) and Clark et al. (2013).

Section A. Introduction

A.1. Overview of the Project. The 4+1 TEACH program is an extended, nontraditional teacher preparation program that aims to recruit a diverse pool of teacher candidates from the Sam Houston State University (SHSU) student body who serve high-needs schools through a three-year residency and beyond. The program follows an evidence-based pre-service teacher training and novice teacher induction model. 4+1 TEACH is designed so that teacher candidates receive their bachelor's degree, Masters of Education in Curriculum and Instruction (M.Ed. in C&I), and teacher certification in five years. During the first 3.5 years of the program, 4+1 TEACH candidates complete all coursework and field experiences required of teacher candidates enrolled in SHSU's traditional teacher preparation program. Candidates receive extensive, diverse field experiences in public schools that follow a gradual release of responsibility model. Candidates

are awarded their bachelor's degrees at the conclusion of their fourth year, having completed 9 semester credit hours (SCH) of graduate coursework credited toward the M.Ed. in C&I degree.

During the fifth year of the program, candidates complete a year-long residency with the guidance and support of three experienced, trained mentors (full-release mentor [FRM], site-based mentor [SBM], and 4+1 TEACH Coordinator). Mentors use the Multi-Tiered Systems of Support (MTSS) Coaching model as a framework to coach their mentees, meeting with their candidates and conducting classroom observations regularly to provide feedback and support (Freeman, Sugai, Simonsen, & Everett, 2017). See Appendix H for further information regarding the MTSS model. During this year, 4+1 TEACH candidates also complete an additional 21 SCH of graduate coursework designed to support them through their induction year. At the conclusion of the fifth year, candidates are awarded a M.Ed in C&I. The final two years of the program are spent in a school-based residency and include the creation of personalized Professional Learning Plans (PLPs) tailored to the needs of the schools the residents serve. See Appendix F, Section I for a copy of the 4+1 TEACH course descriptions.

4+1 TEACH is unique in that it combines extensive school-based field experiences and coursework as a part of an extended, nontraditional teacher preparation program while also providing school-based professional learning opportunities for existing educators, making this project an exceptional approach to Absolute Priority 1. 4+1 TEACH has three goals: (1) to recruit, support, and retain a diverse novice-teacher workforce that is prepared to meet the needs of students in high-needs schools (AP1.1; AP1.3; CPP; IP); (2) to support in-service educators in their professional learning goals and in their development as teacher leaders (AP1.2; CPP; IP); and (3) to develop and sustain district-university partnerships that support novice teachers' induction experiences (AP1.2; CPP). Through partnership with the 4+1 TEACH program, school

districts have an increased capacity to recruit and retain a committed, diverse pool of novice teachers who have been extensively trained in supporting students in high-needs schools.

The quality of the 4+1 TEACH project stems from the services provided to pre-service, novice, and experienced teachers and partnerships with LEAs. The literature surrounding teacher preparation and professional development consistently demonstrates that services must be of high quality, intensity, and duration. Therefore, we outline the services provided to 4+1 TEACH candidates and partners in Appendix C, Table 1 and section A.3.

A.2. Evidence-Based Practices. The 4+1 TEACH model incorporates three primary evidence-based practices that have demonstrated positive impacts on student achievement, which have also been employed by Teach for America (TFA) teacher preparation model. These evidenced-based practices are (a) recruiting talented, committed teacher candidates; (b) school-based pre-service training; and (c) in-service mentoring for novice teachers. The combination of these practices is believed to be the impetus for the statistically significant positive impact on student achievement observed by Glazerman et al. (2006) and Clark et al. (2013) in their studies of the TFA program. These two studies meet What Works Clearinghouse (WWC) standards without reservations and demonstrate a statistically significant positive impact on students' math achievement. Both of these studies were conducted in schools that are comparable to 4+1 TEACH partner LEAs in terms of race and percentage of students from economically disadvantaged backgrounds. Although these three elements of the TFA model are included in the 4+1 TEACH model, this project also seeks to expand upon this model in four distinct ways: (a) the quality, intensity, and duration of pre-service and in-service training and support (Goal 1 & 2); (b) the quality, intensity, and duration of pre-service field experiences (Goal 1); (c) the recruitment of highly committed individuals (Goal 1); and (d) the depth of partnerships with

LEAs to meet needs specific to their student populations (Goal 3) through personalized professional learning plans (PLP) that lead to micro-credentials (Goal 2). The 4+1 TEACH extended preparation and induction model relies on three key components: intensive pre-service training, novice teacher induction experiences, and sustained professional learning.

The TFA model has demonstrated positive outcomes on student achievement, but the model has not been as successful on other quality indicators. Problems with teacher recruitment and retention have been well-documented in the literature (Carroll, 2007; Kersten, 2008; National Commission for Teaching and America's Future, 2003; Peterson, 2002). School human resource personnel have described problems with recruiting teachers, particularly in urban schools (Kersten, 2008; Peterson, 2002). Additionally, of the teachers who enter the classroom every year, 20 to 30% will leave the profession within 3 years, and 40 to 50% will leave within 5 years (Darling-Hammond, 1998; Ingersoll, 2002; Ingersoll & Smith, 2003). These problems combine to create a staffing shortage in many school districts throughout the country, including the 4+1 TEACH partner LEAs. Thousands of TFA corps members have been placed in high-needs schools over the last three decades. However, the majority of these corps members do not remain in the education profession past the required two years, which only exacerbates the teacher attrition problem (Donaldson & Johnson, 2011). For this reason, the 4+1 TEACH program aims to produce teacher retention outcomes that exceed that of the TFA model. As the oldest teacher preparation institution west of the Mississippi River, the SHSU College of Education has trained teachers for almost 140 years. During this time, the college has prepared thousands of educators who make a difference every day in the lives of Texas' children. One measure of the effectiveness of SHSU prepared teachers is their longevity in education. In a state that has a 5-year teacher retention rate of 72.5% in the profession, the 5-year retention rate of

SHSU prepared teachers was 87.7% for the 2010 graduating class (CREATE, 2016). Additionally, the 4+1 TEACH program is an extended teacher preparation program, which has been shown to significantly increase teacher retention (Andrew & Schwab, 1995).

Training and Field Experiences. The TFA model has been successful with their intensive, school-based pre-service training provided to their corps members (Clark et al., 2013; Glazerman et al., 2006). Like the TFA model, the 4+1 TEACH program also provides intensive pre-service training; however, the training provided differs in duration and quality. 4+1 TEACH candidates begin their training as undergraduate students in the SHSU College of Education (CoE) prior to entering the 4+1 TEACH program. Their **pre-entry phase** consists of four blocks (foundations, Level I pedagogy, Level II pedagogy, and special populations pedagogy) during which students receive sustained, school-based professional development and field experiences.

After being admitted to the 4+1 TEACH program, candidates begin the 4+1 TEACH **pre-service training stage**. During this stage candidates complete 9 semester credit hours (SCH) of graduate coursework that is applied to both their undergraduate degree and the M.Ed. in C&I (AP1.3). These courses cover topics including evidence-based instructional practices, analyzing student work, and creating a positive classroom culture. All courses incorporate appropriate topics related to Computational Thinking (CT) (CPP) and opportunities for students to demonstrate their skills and competencies in an attempt to earn relevant micro-credentials (IP). These courses are specifically designed to support pre-service teachers during the weeks in which they prepare for their induction year. See Appendix F, Section III for a crosswalk of 4+1 TEACH courses and relevant micro-credentials. Candidates then progress to the **in-service phase** of the 4+1 TEACH program. During this time candidates complete the final 21 SCH of graduate coursework toward the M.Ed. in C&I (AP1.3). They also complete their 3-year teacher

residency and participate in the Computational Thinking Intensive (CTI) and STEM+C Camp (CPP). Appendix C, Table 2 outlines the phases of the program.

4+1 TEACH Residents receive intensive mentorship during their first three years in the classroom, which has been shown to be among the most effective teacher induction practices (Ingersoll & Kralik, 2004; Ingersoll & Smith, 2004; Odell & Ferraro, 1992). Novice teachers need consistent support with accessing and using curriculum and resources; implementing effective classroom management procedures, routines, and instructional practices; developing a passion for lifelong learning and professional growth; bonding with a learning community; and displaying sensitivity to and understanding of the school community (Kauffman, Johnson, Kardos, Liu, & Peske, 2002; Brewster & Railsback, 2001; Wong, 2002). Residents are assigned a site-based mentor (SBM) who meets the following criteria: (a) teaches on the same campus and in the same grade level/subject as the resident; (b) has at least 3 years of creditable teaching experience; (c) is a highly effective educator as evidenced by student learning; and (d) is committed to mentoring the next generation of teachers (Ingersoll & Smith, 2004; and Johnson & Birkeland, 2003). The SBMs have daily contact with their residents and carry the primary responsibility for helping residents access and use district resources and develop an understanding of the school's community.

Residents are also assigned a Full Release Mentor (FRM) who (a) is completely released from classroom teaching duties; (b) has at least 10 years of creditable teaching experience in the grade level/subject of the resident; (c) has been a highly effective educator as evidenced by student learning; and (d) is passionate about supporting novice teachers. The FRMs have weekly contact with their residents and carry the primary responsibility for supporting residents in

implementing effective classroom management procedures, routines, and instructional practices and implementing evidence-based instructional practices.

Finally, residents are consistently supported by their assigned 4+1 TEACH coordinator. Upon admission to the program, each candidate is paired with a 4+1 TEACH coordinator who advises and mentors them throughout the program. Coordinators are primarily responsible for helping candidates successfully complete their training and coursework; developing a sense of community among the residents; and ensuring candidates develop a desire for lifelong learning.

Recruitment of Talented, Committed Candidates. An essential element of the TFA model is the recruitment of talented individuals who are typically high-achieving graduates from elite universities (Glazerman et al., 2006; Clark et al., 2013). 4+1 TEACH also recruits and admits highly talented individuals, but this program has the advantage of recruiting from the SHSU College of Education traditional teacher certification program. These students have already committed to pursuing a degree in education, which displays their commitment to pursuing teaching as a profession. This recruitment practice has been shown to positively impact retention rates (Donaldson & Johnson, 2011) and teaching performance (Ingersoll, Merrill, & May, 2014).

The SHSU traditional teacher certification program is a 4-year program. Beginning Spring 2018, students in their senior year are given the opportunity to apply to the 4+1 TEACH program to extend their teacher preparation. Students admitted to this program have a GPA in the top half of their cohort, display exceptional teaching skills, exhibit the professional attitudes and dispositions expected of an educator, and are committed to pursuing education as a life-long career. Preference is given to students whose certification area is in high demand (bilingual,

ESL, math, science, and computer science) and who demonstrate a financial hardship that would prevent them from becoming certified through the traditional certification route.

SHSU serves a diverse student body in which 35.6% of students are first generation. Also, 60% are recipients of need-based financial aid. The traditional SHSU teacher preparation program requires students to complete a 16-week student teaching experience during which students are not permitted to be employed, which can create a financial hardship for students. Therefore, the 4+1 TEACH program provides students a nontraditional path to certification (AP1.1) in which a teacher residency is substituted for the traditional student teaching experience. Because 24% of students who begin the traditional SHSU Teacher Certification Program are unable to complete the student teaching requirement due to financial need, the 4+1 TEACH program gives these students the opportunity to enter the teaching profession through a nontraditional, university-based route to teaching (AP1.1).

Partnerships with LEAs. The SHSU College of Education has a longstanding tradition of training pre-service teachers in collaboration with LEAs. This formalized partnership is referred to as the Sam Houston Innovative Partnership with Schools (SHIPS). SHIPS advises the college of LEA needs and helps the college's faculty to craft coursework and field experiences to meet their needs. Because of the importance of pre-service teachers practicing the skills and competencies that are covered in their coursework, pedagogy courses are taught on a K-12 campus in collaboration with experienced, model educators. This collaborative training allows SHSU pre-service teachers the opportunity to apply evidence-based practices under the guidance of an exceptional mentor teacher and receive timely feedback for continuous improvement, which is a key element of the TFA mentorship model (Clark et al., 2013; Glazerman et al., 2006). 4+1 TEACH also develops sustained partnerships with residents' principals. As the

instructional leader of the campus, principals are an integral part of novice teachers' success (Johnson & Birkeland, 2003). As such, the 4+1 TEACH leadership team prioritizes developing mutually beneficial relationships with residents' principals.

A.3. Quality of the Project Design. <u>Goal 1:</u> The first goal of the 4+1 TEACH project is to recruit, support, and retain a diverse novice-teacher workforce who are prepared to meet the needs of students in high-needs schools. This goal will be met primarily by training novice teachers in a university-based, nontraditional teacher preparation program that includes an extended residency model (AP1.1). This program will focus particularly in the areas of most need in our partner LEAs: STEM+C, bilingual, ESL, and Special Education. Unique to this program is that the extensive amount of coursework and training provides candidates the opportunity to receive an advanced credential, namely the M.Ed. in C&I (AP1.3). Because of the increasing awareness that the granting of micro-credentials is an important way to acknowledge teachers' unique skills and competencies, 4+1 TEACH candidates will also have the opportunity to receive micro-credentials that correlate to the coursework and professional learning opportunities in which they will be engaged (IP).

The first goal of the 4+1 TEACH project attends to Absolute Priority 1.1 by **recruiting and training teachers through a university-based, nontraditional teacher preparation program to serve in traditionally underserved LEAs during and after a three-year teacher residency** (AP1.1). The 4+1 TEACH training model is outlined in detail in section A.2. The key elements are sustained preservice training, extensive preservice field experiences, personalized in-service professional learning. and completion of a 3-year residency in a traditionally underserved partner LEA.

Goal 1 attends to Absolute Priority 1.3 by **providing 4+1 TEACH candidates with evidence-based professional development activities that will lead to the conferral of a M.Ed. in C&I degree** (AP1.3). The M.Ed. C&I degree was designed in collaboration with LEAs to meet the needs LEA leaders have observed in their novice teachers such as creating positive classroom climates, facilitating discussions, assessing for improvement, reflecting on practice, and using research to inform instruction. Courses have also been designed to be sustained, evidenced-based professional learning opportunities by focusing on a relevant topic (e.g. classroom environment, instructional systems and design, formative assessment) for an extended period of time and using research as the basis upon which the courses are designed. See Appendix F, Section II for the objectives/standards matrix.

In order to ensure transfer of knowledge and skills to candidates' classrooms, the objectives for the M.Ed. in C&I will be incorporated into residents' personalized PLPs (discussed further in Goal 2). Additionally, trainings for SBMs and campus principals will incorporate each of these topics so that the SBMs and principals are prepared to support the residents in implementing the knowledge and skills acquired during coursework. Most importantly, residents will be supported by their SBMs' and FRM's use of the Multi-Tiered System of Support (MTSS) instructional coaching model. Coaching within this framework increases the probability that new practices are not only applied correctly, fluently, and sustained over time, but also adapted as needed within various contexts. Specifically, the MTSS framework functions as a guideline for delineating coaching responsibilities to ensure its accurate implementation and includes the following elements: concentrated and explicit teaching, modeling, prompting, and providing consistent and accurate feedback (Freeman, Sugai, Simonsen, & Everett, 2017).

The M.Ed. in C&I is systematically reviewed for impact on teacher effectiveness through the program's internal assessment plan and external reviewers. The program assesses the degree to which candidates meet stated course objectives and relevant professional standards through course-based assessments. Data from these assessments are reviewed annually by the program faculty and modifications to coursework are made as needed. The program has also chosen to participate in NCATE (now CAEP) accreditation since 1954. In each accreditation cycle the program produces evidence of their students' ability to implement evidence-based instructional practices to a team of external reviewers. The program was most recently accredited in 2015 with outstanding reviewer comments.

Goal 1 of the 4+1 TEACH program also aims to **promote STEM+C education through the recruitment of STEM+C teachers and the support of evidence-based professional learning for pre-service and novice teachers,** which attends to the Competitive Preference Priority (CPP). Evidence-based recruitment strategies are used to recruit all 4+1 TEACH candidates; however, recruitment efforts are specifically focused in the STEM+C fields. Additionally, we provide intensive summer professional development for residents and SBMs related to CT in the form of the CTI and the STEM+C Camp.

Like the TFA model, 4+1 TEACH aims to recruitment talented, high-achieving individuals (Clark et al., 2013; Glazerman et al., 2006). However, 4+1 TEACH has the advantage of recruiting candidates from a pool of individuals whose intentions are to become educators and who desire to pursue a bachelor's degree in education. Recruitment of 4+1 TEACH candidates begins with high school students. Through the SHSU CoE's connection to future teacher associations in partner LEAs, the 4+1 TEACH program is able to recruit high school students whose intentions are to become educators. Additionally, the high school

STEM+C Camp will be designed to give students who intend to become educators experiences in STEM+C in order to recruit them into STEM+C teaching fields. The 4+1 TEACH program also recruits SHSU freshmen and sophomore students who are interested in STEM+C fields but have not yet chosen to become educators. Information sessions highlighting the positive aspects of a career in education and the benefits of the 4+1 TEACH program are offered multiple times each semester through student academic advising, student organizations, and the CoE Education Recruiters. Underclassmen who decide to pursue a STEM+C Education pathway then begin the pre-entry coursework and field experiences highlighted in Figure 2 that make the 4+1 TEACH program an exceptional approach to AP1.1 and the CPP. Finally, SHSU CoE students begin to be informed about the 4+1 TEACH program during their sophomore year. The program is highlighted as a nontraditional path to teacher certification (AP1.1) designed to allow students to receive intensive pre-service training and to provide them with exceptional support during their induction years. For Cohort 1, 126 students were eligible to apply, and 45 submitted applications, indicating that this program is of interest to a large portion of the SHSU CoE student body.

Prior to the CTI, residents and SBMs complete the Computational Thinking for Educators training by Google for Education™ to provide them with a foundation in the principles of CT. The CTI is then led by the STEM+C Coordinator and representatives from Babble Lab. Participants engage in a 5-day intensive workshop series that culminates in classroom-based projects ready for implementation. Days 1 and 2 explore the range of ways educators integrate computer science across grades and subject areas. From elementary school examples using Scratch to middle school students programming robots to act out scenes from Shakespeare to high school students turning public data sets into visualizations, participants will focus on understanding that computer science is not an "add-on" to their curricula; it is a way to deepen

and expand their content-area instruction. That is, CT already exists in all classrooms. Using computer science in classrooms is a natural extension. In days 3 and 4, participants will design a project-based learning experience for their own classrooms that uses methods and principles from computer science to deepen and expand their curricula. Participants will be encouraged to refer to their district's planning guidelines. Facilitators will refer to Understanding by Design (UBD) as a shared framework, which includes dedicated attention to addressing standards-based goals, designing assessments, and learning activities. Using the CSTA standards as a guide, teachers will begin to understand how computer science can provide new ways of learning for students and teachers alike. Day 5 will focus on systematically providing feedback to participants via peers and facilitators, as well as goal-setting for participants' professional learning in the months to come.

The STEM+C Camp is open to rising 3rd-12th grade students in partner LEAs to expose them to CT strategies, careers in STEM+C fields, and college culture. For rising 3rd-6th grade students, the day-camp is led by 4+1 TEACH residents and SBMs who work in elementary and middle schools. For rising 6th-12th grade students, the overnight-camp is hosted at the SHSU main campus and is led by secondary 4+1 TEACH residents and SBMs.

Finally, Goal 1 of the 4+1 TEACH program will **support 4+1 TEACH candidates' acquisition of micro-credentials (IP) through their demonstration of skills and competencies during their graduate coursework and personalized PLPs.** Each graduate course in the 4+1 TEACH program will allow candidates the opportunity to demonstrate their mastery of skills and competencies in an effort to earn a relevant micro-credential through BloomBoard™. These micro-credentials are portable across schools, LEAs, and states and are a symbol of teachers' mastery of specific competencies and skills. See Appendix F, Section III for

list of cross-listing courses and associated micro-credentials. Additionally, residents will receive micro-credentials recognizing the skills and competencies acquired through their personalized PLPs (discussed further in Goal 2).

    Goal 2 of the 4+1 TEACH project is to support in-service educators in their professional learning goals and in their development as teacher leaders. As part of this goal, the project will provide teachers, both novice and experienced, evidence based professional learning opportunities in order to meet the established needs of our partner LEAs. The professional learning opportunities will be based on LEAs District Improvement Plans (DIP) and Campus Improvement Plans (SIP), focusing specifically on evidence-based instructional strategies related to STEM, especially computer science and digital literacy. Personalized PLPs will be created for each teacher involved in the project (both 4+1 TEACH residents and their mentors) based on LEA needs with the expectations that their competencies and skills will be demonstrated and that appropriate micro-credentials will be awarded. Through each teachers' professional learning and mentorship relationship, the teacher leadership behaviors outlined in the Teacher Leader Model (TLM) Standards will be developed (Teacher Leadership Exploratory Consortium, 2011).

    Goal 2 of the project attends to Absolute Priority 1.2 and Invitational Priority **through the development and facilitation of personalized PLPs for 4+1 TEACH residents and their SBMs based on the established needs of their LEAs** (AP1.2; IP; CPP). Each PLP will be collaboratively developed by 4+1 TEACH Coordinators, principals, residents, and SBMs to meet the needs established in their DIPs and SIPs. Teachers will be guided to select skills and competencies identified in the DIP and SIP and their previous performance appraisals to hone throughout the academic year. Included in each PLP will be a focus on strategies for improving student academic achievement (AP1.2), developing teacher leadership behaviors, and integrating

CT strategies across the disciplines (CPP). After each PLP is created, SHIPS will analyze the needs expressed by teachers and design professional learning activities to meet these needs. The implementation of PLPs is the primary way in which sustained, job-embedded professional learning is facilitated in the 4+1 TEACH program (AP1.2; CPP).

Goal 2 also attends to the CPP and IP by **encouraging and supporting teachers in acquiring micro-credentials as recognition of the skills and competencies they have acquired as part of their personalized PLPs**. As each PLP is developed, the 4+1 TEACH Coordinators will help teachers identify micro-credentials offered through BloomBoard™ that relate to the skills and competencies the teachers have chosen to hone. Teachers will be supported in creating the documentation needed to be awarded their chosen micro-credentials as part of the professional learning activities designed by SHIPS.

Goal 2 of 4+1 TEACH also aims to **develop the next generation of teacher leaders through mutually beneficial mentorship.** As part of the 4+1 TEACH model, each resident is assigned an SBM to support them during their induction years. Although research has consistently cited this practice as highly beneficial to the resident, this relationship can also benefit the SBM. Through mentoring 4+1 TEACH residents, SBMs develop teacher leadership behaviors such as fostering a collaborative culture; promoting professional learning; facilitating improvement in instruction and student learning; promoting the use of assessment for improvement; and improving outreach and collaboration with families and community.

Finally, 4+1 TEACH aims to meet AP1.2 and AP1.3 **through training the next generation of teacher educators and instructional leaders**. Over the course of the grant period, the 4+1 TEACH program will hire nine doctoral fellows. These fellows will pursue a doctoral degree in Literacy, Elementary Education, Educational Leadership, or Instructional

Systems and Design (AP1.3). Additionally, fellows will teach pre-entry 4+1 TEACH courses and assist in 4+1 TEACH research and professional learning. The combination of these experiences (coursework, teaching, and research and professional learning) will provide them with unparalleled preparation to take on roles as teacher educators or instructional leaders in LEAs. The fellows will become experts in the 4+1 TEACH preparation and induction model, which will multiply the impact this program will have on other organizations.

Goal 3 of the 4+1 TEACH project is to develop and sustain district-university partnerships that support novice teachers' induction experiences. Unfortunately, universities and school districts have been conceptualized as opposing forces in the educational system (Flessner, 2014). In order to combat this misconception, the project will further develop existing LEA partnerships and cultivate new partnerships to train teachers who are able to meet the needs of the partner LEAs. 4+1 TEACH uses two primary partnerships (SHIPS and Principals Collaborative) to create lasting partnerships with LEAs. SHIPS focuses on identifying the needs of the LEAs and developing professional learning experiences to meet those needs. SHIPS also provides a space for a university-LEA partnership to discuss and reimagine novice teacher induction and mentorship. The Principals Collaborative provides space to discuss the successes and shortcoming of specific 4+1 TEACH residents and to plan novice teacher induction experiences.

Though meeting Goal 3, 4+1 TEACH and SHIPS will **bridge the gap between theory and practice by purposefully examining the needs of LEAs and providing evidence-based professional learning opportunities that meet those needs** (AP1.2) (Ebby, 2000). Each LEA creates annual DIPs and SIPs that outline the LEA's plan for continuous improvement. Drawing from these plans, the SHIPS partners will identify common areas for improvement and

collaboratively develop professional learning opportunities and systems of support to help meet the LEAs' needs. These efforts will be closely monitored, and successes will be shared with other LEAs, region service centers, and professional organizations.

The SHIPS partnership also **collaboratively discusses and reimagines teacher induction and mentorship to support novice teachers' development** (AP1.2). SHIPS members are committed to improving novice teachers' induction experiences in order to improve teacher job satisfaction and long-range retention. To meet this goal, SHIPS members meet monthly to discuss and reimagine the novice teacher induction experience and teacher recruitment practices. SHIPS is a space for LEA leadership to share effective practices and to seek assistance in areas for improvement. The collaborative nature of this team provides for an open exchange of information with the goal of improving practices and outcomes.

Finally, the Principals Collaborative **connects the 4+1 TEACH leadership team to the leaders on each of the residents' campuses in order to better support their professional learning** (AP1.2). In order to better support specific residents, principals meet quarterly with residents, FRMs, and SBMs to discuss the resident's accomplishments and needs. The principals also seek to identify areas in which the resident-SBM relationship can be strengthened and ways to provide further administrative support to the resident. The principal collaborative also meets monthly to explore best practices for novice teacher induction. The collaborative explores ways to implement best practices in teacher induction, including providing access to curriculum and resources (Kauffman et al., 2002; Johnson & Birkeland, 2003), increasing teachers' self-efficacy (Tschannen-Moran & Hoy, 2001; Woolfolk, 2000), providing time to interact with and get support from colleagues (Feiman-Nemser & Beasley, 1997; Johnson & Birkeland, 2003; Paisley, 1990; Smith & Ingersoll, 2004), and reducing teaching assignments and workload (Birkeland &

Johnson, 2002; Ingersoll & Smith, 2004; Johnson & Birkeland, 2003; Reiman & Parramore, 1994).

A.4 Project Partners. SHSU 4+1 TEACH is led by several project partners who work collaboratively to support new and experienced educators for work in high-needs schools. The **4+1 TEACH Leadership Team** (see vitas for all key personnel in Appendix B), led by Stacey Edmondson, is comprised of six highly experienced teacher educators who bring particular expertise in university-based traditional and alternative certification programs. Dr. Stacey Edmondson is Dean of the CoE at SHSU. She served as chair of the Department of Educational Leadership and Counseling for 5 years and has been a professor in educational leadership since 2000. Under Dr. Edmonson's leadership, the 4+1 TEACH program, the first dual degree program on the SHSU campus, was approved by the Council of Academic Deans. Additionally, she is an expert in mentoring, stress and burnout among educators, legal issues in education, and educator ethics, having authored a number of books and articles on these topics. Dr. Edmonson is supported by the project director, Dr. Christina Ellis. Dr. Ellis has led the daily operations of the 4+1 TEACH program. Under her direction, 22 students have been admitted to the first cohort, residency placements have been secured, and a trained cadre of 32 FRMs has been established. Her expertise lies in assessment for continuous improvement and educational policy. The 4+1 TEACH Coordinators and STEM+C Coordinator also bring unparalleled experience and expertise to the leadership team. See Appendix B for their qualifications and experiences.

The following **LEAs,** along with their superintendent and campus principals, have a consistent record of supporting SHSU teacher residents and have committed to continued support in growing the 4+1 TEACH partnership (see letters of support Appendix D). Partner LEAs were selected because their student populations are traditionally underserved and because of their

difficulty in recruiting and retaining high quality teachers. Each of the partner LEAs' DIPs includes goals to improve teacher induction systems and to recruit and retain more highly prepared teachers in high needs fields. Appendix C, Tables 3 and 4 summarize pertinent information for each partner LEA.

The 4+1 TEACH program partners with **Babble Lab** to conduct the CTI and the STEM+C Camp (see Appendix D for letter of support). The Babble Lab is a center for digital humanities pedagogy and research at Pace University. Their mission is to reimagine humanities instruction to prepare students with the knowledge, skills, and creativity necessary for active democratic participation in our digital age. With a unique interest in both higher education and K-12 instruction, the Babble Lab is dedicated to increasing support for both university and K-12 educators in using digital humanities-based methods in their classrooms. They broadly define the digital humanities as a field that engages computational methods, digital tools, and increased emphasis on media history to enhance methods of humanistic inquiry; encourage greater reflection on the assumptions and omissions that inform our understanding of the past and the present; and empower learners to grapple with the political, ethical, and economic challenges of the twenty-first century.

Led by Tom Liam Lynch, Babble Lab envisions a world where humanities education at the K-12 and higher educational levels plays a vital role in giving everyone a place in the world as makers of democracy. Tom Liam Lynch is co-director of the Babble Lab and an Assistant Professor of Educational Technology at Pace University in Manhattan. A former English teacher and school district official for the New York City Department of Education, Dr. Lynch led the implementation of a $50M online/blended learning program in over 100 schools called iLearnNYC. He also designed and guided the initial implementation of WeTeachNYC, a

digital resource repository and learning environment for the city's 80,000 teachers. Dr. Lynch's research sits at the intersection of software theory and English education. Currently, he is examining the relationship between K-12 computer science and literacy.

Sam Houston State University (SHSU), the lead applicant, is a Carnegie Doctoral Research Intensive University graduating over 500 new teachers each year, 48.4% of whom are from underrepresented groups and 35.6% are 1st generation students. Further outlined in the statement of eligibility (see Appendix E), SHSU is an institute of higher education with a record of significantly improving student achievement through successful partnerships with local LEAs and their schools, producing teachers who impact student performance in K-12 schools, placing teachers in high needs schools, and retaining and graduating students. SHSU staff and faculty bring expertise in instructional pedagogy and work closely with the SHSU 4+1 TEACH leadership team to conceptualize what it means to support the development of teacher leaders. SHSU faculty are particularly interested in the working with LEAs to create a more effective novice teacher induction preparation program while supporting initiatives already in existence. This interest aligns with the college's goal to *seek alternative solutions to current dilemmas in PK-20 education*.

A.5. Serving Those with Greatest Need. The SHSU CoE's 10-year strategic plan outlines the vision and mission for the college for the coming decade. The first goal of the CoE is to seek alternative solutions to current dilemmas in PK-20 education, which is the impetus behind the creation of the 4+1 TEACH program. As the CoE faculty examined the needs of our partner LEAs, it became evident that it was imperative that we supply highly prepared teachers to serve in schools with students who had the most to gain from a well-trained novice teacher workforce. The 4+1 TEACH program prepares pre-service and in-service teachers in partnership with

traditionally underserved LEAs. Currently, the program partners with nine Houston-area LEAs: Aldine ISD, Cy-Fair ISD, Huntsville ISD, Klein ISD, New Caney ISD, New Waverly ISD, Splendora ISD, Spring ISD, and Willis ISD. These partners were strategically chosen because they serve students of great need and because of their consistent difficulty in recruiting and retaining teachers.

Today, these districts serve approximately 307,000 students, with 60% of these students qualifying as economically disadvantaged. Unfortunately, most of these students attend Title I campuses, which typically experience even greater difficulty attracting and retaining teachers (Kersten, 2008; Peterson, 2002). Our partner LEAs also struggle with subpar student academic performance, with approximately 49% of students not meeting grade level standards in reading and 48% not meeting grade level standards in mathematics. The student achievement dilemma is exacerbated by these LEA's high percentage of novice teachers, over half of which are prepared through alternative certification programs that provide little training and minimal, if any, field experiences. Finally, our partner LEAs lose approximately 3,390 teachers annually, which has tremendous student achievement and financial implications. As a whole, the partner LEAs have a demonstrated need for well trained, highly committed teachers such as those trained by 4+1 TEACH. Appendix C, Tables 3, 4 & 5 display detailed information for each partner LEA and the overall project.

Section B. Significance

B.1. The Importance of Results Likely to be Attained. 4+1 TEACH currently partners with 9 LEAs that include 240 campuses that employ 19,250 teachers who educate approximately 307,000 students, most of which qualify as at-risk. Over the span of the granting period, the 4+1 TEACH program will recruit and train an estimated 292 teacher candidates who will complete 3-

year residencies in partner LEAs. These residents will directly teach approximately 47,304 (estimated using 1:54 ratio based on history SHSU graduate employment records) students during their residencies and exponentially more after the granting period concludes. Additionally, the program will provide professional learning opportunities to approximately 300 SBMs in partner districts, who will also teach approximately 48,600 students over the course of the grant period. These students receive the direct benefit of having a 4+1 TEACH trained teacher, but all other students benefit from these teachers' renewed focus on professional learning and teacher leadership. In addition to the teachers served, an estimated 200 principals will participate in the Principals' Academy. This focused time spent on improving novice teachers' induction experiences will benefit all novice teachers on these principals' campuses for years to come. Finally, approximately 2,200 K-12 students will benefit from the rich CT experiences provided at the STEM+C Camps during the granting period. These experiences will enrich their learning during the academic year, create a college-going culture, and encourage their pursuit of STEM+C careers, especially teaching.

Through this project's broad reach, we will improve traditionally underserved LEAs' access to well-prepared novice teachers and position these LEAs to improve student academic achievement. First, 4+1 TEACH will provide a pipeline of high quality teachers who are committed to teaching in high-needs fields. 4+1 TEACH residents will fill positions historically left open at the start of the school year. These positions represent student learning gains typically lost when these positions are filled with long-term substitutes. We also aim to retain high quality teachers in our partner LEAs by attracting committed individuals who desire to teach in traditionally underserved communities. SHSU prepared teachers have historically had exceptional 5-year retention rates (87.7% for the 2010 graduating class), and we anticipate that

4+1 TEACH residents' retention rates will exceed this because of their extended preparation (Andrew & Schwab, 1995).

Furthermore, this project aims to impact the way pre-service teachers are trained, novice teachers are inducted, and university-LEA partnerships are conceptualized. The success of this program will serve as a model other universities can follow to prepare preservice teachers in a way that meets the needs of the changing demographic of college students. With an increasing number of non-traditional students entering universities, colleges of education must consider alternative preparation pathways to meet students' needs without sacrificing the quality of training provided. This program will also demonstrate the viability of universities actively participating in the novice teacher induction process. Many teacher preparation programs conceptualize their role in teacher training being completed upon graduation, but this model does not provide the support teachers need during the critical transition from student to teacher. Finally, our deep partnerships with LEAs will demonstrate the viability and benefits of collaborative teacher preparation and induction. Through SHIPS, we anticipate helping other universities and LEAs being similar mutually beneficial partnerships.

B.2. Cost effectiveness. 4+1 TEACH intends to use grant funds for two primary purposes: training preservice teachers through a nontraditional teacher preparation program that leads to an advanced credential (AP1.1 & AP1.3) and training experienced educators in evidence-based instructional practices, some of which will receive an advanced degree (AP1.2 & AP1.3). Funds will be used specifically to train teachers in integrating CT strategies across the curriculum (CPP) and acquiring micro-credentials as a display of the skills and competencies developed as part of their personalized PLPs (IP). Although these goals are inherently costly, the benefits far outweigh the monetary output and offset the financial burden absorbed by LEAs plagued by high

teacher attrition. Approximately $7 billion (~$17,000 per teacher) is spent annually to recruit, hire, and train new teachers to replace those who have left the profession or their campuses (AFEE, 2014). This estimate translates to approximately $57,000,000[1] spent by our partner LEAs annually in teacher attrition related costs. 4+1 TEACH will reduce these costs by providing well trained novice teachers who are committed to remaining in their placement schools and by increasing experienced educators' longevity through systemic support and professional learning.

The cost benefit of this project is further evident in the breadth and quality of the program. As outlined in B.1, we estimate that 4+1 TEACH will produce and support 270 new teachers, train and support 300 experienced teachers, collaborate with 200 principals, and directly impact 96,208 K-12 students throughout our 9 partner LEAs in the north Houston area. The costliest aspect of our project, the 4+1 TEACH coursework culminating in the M.Ed. in C&I, provides an opportunity for professional growth and learning most novice teachers are unable to access. Furthermore, at a cost of only $13,000 per candidate, the SHSU M.Ed. in C&I is among the most affordable graduate degrees in the country (NCES, 2017). Additionally, the partner LEAs have agreed to absorb the cost of residents' salaries, furthering the cost effectiveness and sustainability of the project and allowing residents to fully devote themselves to a successful residency experience. The experiences gained in the M.Ed. in C&I coursework are multiplied through another critical, yet less costly, aspect of the project: novice teacher mentorship. The multi-year support provided by SBMs, FRMs, and 4+1 Coordinators ensures that the cost of the M.Ed. in C&I is not wasted. Finally, 4+1 TEACH never utilizes "sit and get" professional development that has become the norm in many schools. Instead, each teacher

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[1] Approximately 3,390 teachers annually (see Appendix C, Table 4) at $17,000 each

creates a personalized PLP tailored to teachers' and campuses' needs. Each PLP consists of

sustained professional learning experiences (35-45 hours) over an extended period of time,

ensuring the transfer of skills to teachers' classrooms.

B.3. Sustainability Beyond Granting Period. The sustainability of the 4+1 TEACH program lies

primarily in the human capital created. Each new teacher, SBM, and principal will work closely

with 4+1 TEACH personnel and begin to embody the program's norms, using key strategies in

their classrooms and schools. As the norms and practices of the program begin to be embodied

by additional LEA personnel, the sustainability of the project multiplies. Partner LEAs are

committed to gradually assume primary technical and fiduciary responsibility for training and

supporting teachers while sustaining the supportive partnership. Additionally, the teachers and

principals trained during the grant period will become facilitators of the trainings they have

received such as the CTI and Principals Academy. This trainer-of-trainers model ensures these

professional learning opportunities can continue to be offered and that additional educators can

benefit from the project even after the funding ends. Once processes have been established,

partner LEAs are also committed to taking responsibility for developing and facilitating

personalized PLPs for novice teachers and their SBMs as part of standard practice. Personalized

PLPs are a relatively low-cost form of professional development, which will allow LEAs to

continue to implement this practice after the grant period without a substantial financial burden.

The final element of human capital sustainability lies in the immersion of the doctoral fellows in

4+1 TEACH norms. The fellows will have the unique experience of teaching courses in the

program, visiting residents on their sites, collaborating with campus and district leaders, and

assisting with the project evaluation. The combination of these experiences will prepare the

fellows to become ambassadors for the 4+1 TEACH model as they take on roles as teacher educators and LEA leaders.

Additionally, the SHIPS partnership has existed for many years and will continue to be a valued partnership after the grant period. This group of committed individuals will ensure that the 4+1 TEACH vision and mission is incorporated into the culture of their respective organizations. These cultural and practical shifts include hiring well-qualified teachers earlier in the year; providing quality mentorship for at least 3 years; reducing novice teachers' workload and assignments; and valuing partnerships with local universities. Because of the partner LEAs' desire to recruit and retain high quality teachers, they have committed to continue paying the salaries of 4+1 TEACH residents, ensuring that 4+1 TEACH residents will continue to fill high-needs vacancies in the traditionally underserved LEAs long after the grant period.

B.4. Project Dissemination. The 4+1 TEACH leadership team and external evaluator have extensive experience disseminating programmatic information through scholarly journals, practitioner publications, policy reports, and professional conferences. The members of this team will disseminate findings from the 4+1 TEACH project to inform policy and practice in the fields of teacher preparation, novice teacher induction, and university-LEA partnerships. The external evaluator, Dr. Carol Stuessy, will publish annual and final research reports that will be submitted to 4+1 TEACH leadership and the SEED granting agency, as appropriate. As the culmination of the research, at least one empirical article that meets WWC standards will be published in a top-tier education journal such as AERJ or AEQ. Several other articles will be published highlighting the mixed-methods evaluation design and specific elements of program findings in relevant research journals (e.g. JTE). The team will also present at AERA (the largest educational research conference in the US) and other relevant conferences (e.g. ATE, AACTE, SERA).

Because the aim of the project is to impact practice, we will also focus our efforts on disseminating 4+1 TEACH findings in practitioner journals such as *Insight* and *Assessment and Evaluation in Higher Education*. In addition to publication, we will present findings to practitioner professional associations (e.g. Texas Superintendents' Collaborative, Associate Deans & Director of Texas, Texas Association of Teacher Educator), focusing on project implementation processes and possibilities for replication. Finally, SHIPS members will assume responsibility for sharing LEA experiences with other LEAs through regional Education Service Centers. The members of the 4+1 TEACH leadership team also participate in state and national policy initiatives (e.g. US PREP, Texas Teacher Preparation Data Project, Association of Teacher Educators Governmental Relations Committee), which will provide pathways for dissemination of findings to policymakers.

Section C. Quality of the Management Plan

C.1. Goals, Objectives, and Outcomes. Figure 1 below outlines the goals, objectives, projected outcomes, and measures for the 4+1 TEACH project.

Figure 1. Goals, Objectives, Outcomes & Measures

Objectives	Outcomes & Measures
Goal 1: **RECRUIT, PREPARE, SUPPORT, & RETAIN NEW TEACHERS** (AP1; CPP; IP) Recruit, support, and retain a diverse novice-teacher workforce who are prepared to meet the needs of students in high-needs schools	
Increase the number of teachers prepared to fill shortage-area positions,	The number of teachers certified to teach in shortage areas increases (AP1.1) [Number of new teachers certified by 4+1 TEACH in shortage areas designated by TEA]

especially related to STEM (CPP), in traditionally underserved LEAs	The number of vacant positions at the start of the school year decreases within partner districts (AP1.1) [Number of vacant positions at start of school year]
Increase novice teachers' knowledge of evidence-based instructional practices and integration of CT in their curricula	Residents implement evidence-based practices in their classrooms (AP1.2) [T-TESS Observation Rubric]
	Residents display positive attitudes toward integrating CT across the curriculum (CPP) [CAQ]
	Residents intend to integrate CT into their respective curricula (CPP) [CAQ]
	Candidates are conferred the M.Ed. in C&I (AP1.3) [Number of candidates completing M.Ed.]
	Candidates complete the requirements for and are awarded micro-credentials as recognition of their skills and competencies (IP) [Number and type of micro-credentials awarded]
	K-12 students taught by 4+1 TEACH residents demonstrate increased academic achievement [STAAR]
Support novice teachers during years 1-3 through a novice teacher induction system	K-12 students taught by 4+1 TEACH residents demonstrate increased academic achievement [STAAR]
	Candidates continue working in traditionally underserved LEAs during their residencies and beyond (AP1.1) [Retention rates]
	Residents implement evidence-based practices in their classrooms (AP1.2) [T-TESS Observation Rubric; SPS]

	Residents display teacher leader behaviors (AP1.3) [TLMSI]
Retain well-trained novice teachers in traditionally underserved LEAs	Candidates continue working in traditionally underserved LEAs during their residencies and beyond (AP1.1) [Retention rates]
Increase novice teachers' perceptions of success and development of teacher leadership qualities	Residents report sufficient support from their mentors, positive classroom climates, commitment to the profession, and intent to continue in the profession (AP1.1) [PSI-BT]
	Residents report the ability to use evidence-based strategies in their classrooms to teach a diverse group of students (AP1.1) [PSI-BT]
	Residents foster a collaborative culture to support educator development and student learning; access and use research to improve practice and student learning; promote professional learning for continuous improvement; facilitate improvements in instruction and student learning; promote the use of assessments and data for school and district improvement; improve outreach and collaboration with families and community; and advocate for student learning and the profession (AP1.2)
Goal 2: Support in-service educators in their professional learning goals and in their development as teacher leaders	
Increase teachers' knowledge of evidence-based instructional	Site-based mentors implement evidence-based practices in their classrooms (AP1.2) [T-TESS Observation Rubric; SPS]
	Site-based mentors display positive attitudes toward integrating CT across the curriculum (CPP) [CAQ]

practices and integration of CT in their curricula	K-12 students taught by 4+1 TEACH residents (who work alongside their experience mentors) demonstrate increased academic achievement [STAAR]
Retain highly effective teachers in traditionally underserved LEAs	Site-based mentors continue working in traditionally underserved LEAs during their mentor commitment and beyond [Retention rates]
Increase teachers' leadership behaviors	Site-based mentors foster a collaborative culture to support educator development and student learning; access and use research to improve practice and student learning; promote professional learning for continuous improvement; facilitate improvements in instruction and student learning; promote the use of assessments and data for school and district improvement; improve outreach and collaboration with families and community; and advocate for student learning and the profession (AP1.2) [TLMSI]
Goal 3: Develop and sustain district-university partnerships that support novice teachers' induction experiences	
Increase novice teachers' perceptions of success during and after their residencies	Residents report sufficient support from their administration, colleagues, and students' parents (AP1.1) [PSI-BT]
	Residents report sufficient access to instructional resources and reasonable workloads (AP1.1) [PSI-BT]

Increase administrators' awareness of CT strategies and benefits	Improved administrator attitudes toward CT (CPP) [CAQ]
Analyze the needs of LEAs	Collaboratively develop personalized PLPs for residents and their mentors that meet LEA needs (AP1.2) [Interviews with SHIPS members' and program faculty]
	Refine M.Ed. curricula to meet LEA needs (AP1.2) [Interviews with SHIPS members' and program faculty]
Share knowledge gained from this project	Timely sharing of knowledge and needs between partners (AP1.2) [SHIPS members' and program faculty reflections]
	Presentation of 4+1 TEACH findings to partners, teacher preparation programs, and policy makers [Number of presentations made]

Note. Measures are indicated in [blue].

C.2. Management Plan. The 4+1 TEACH project coordinators began coordinating and managing this project in January 2017 when the project was conceptualized. The first half of 2017 was spent gaining support from partner districts and collaboratively planning to meet LEAs needs. A proposal was put forward to the Sam Houston State University College of Education executive council in August 2018 and was granted unanimous approval. After being granted approval, the project coordinators undertook recruitment efforts for the first cohort and have implemented administrative policies and procedures within the university to ensure that the first cohort of students could be admitted. 4+1 TEACH admitted the first cohort of 22 candidates on April 2, 2018, and Year-1 residencies have been secured. The combination of the knowledge,

skills, and experiences of the Dean of the College of Education (Stacey Edmonson), 4+1 TEACH

Director (Christina Ellis), 4+1 TEACH coordinators (Victoria Hollas, Mae Lane, and Jaime

Coyne), and STEM+C coordinator (Hannah Gerber) to implement and monitor the project are

highlighted in their CVs (see Appendix B). The leadership team has outlined the milestones,

responsible parties, and deadlines in Appendix C, Table 5 to ensure that milestones are reached

on the projected timeline.

C.3. Procedures for Feedback and Continuous Improvement. The SHSU CoE department of

Planning and Assessment have adopted the motto "Assessment for Improvement Matters." As

part of the CoE, the leaders of 4+1 TEACH (Dean, directors, and coordinators) also believe that

continually assessing the program's implementation and outcomes is a core responsibility of the

leadership team and stakeholders. As outlined in our Project Management Plan, the project is

guided by a system of goals, objectives, and outcomes that will ensure data are consistently

gathered and reflected upon. The SHSU CoE has established a data analysis and reflection cycle

for all programs that includes goal setting, progress checking, and annual reporting, which is also

used for 4+1 TEACH program review. For nearly 50 years, the SHSU CoE has used this process

to ensure that program and project directors are assessing program performance and taking

action if benchmarks are not being met. Because of this philosophical and historical base, the

project leaders have established a continuous improvement framework using the Context, Input,

Process, and Product (CIPP) evaluation model that is comprised of four teams.

The first team is the *4+1 Leadership Team*—consisting of the dean, project director, and

coordinators—meets weekly to plan upcoming activities, discuss past activities, and discuss any

problems and successes that have arisen over the last week, a key component of monitoring the

processes as part of the CIPP evaluation plan. This weekly meeting is always focused on

continuous improvement and planning for success. The *Advisory Committee*—consisting of the

dean, project director, coordinators, one representative from each 4+1 partner, and one SHSU

faculty member—meet monthly to review preliminary reports from the external evaluator and to

create long-term plans for the project. This team will primarily be responsible for the input and

process evaluation portion of the CIPP model (Zhang, 2011). The *SHIPS collaborative*—

compromised of the Dean, project director, coordinators, 3 SBMs, 3 FRMs, 3 4+1 TEACH

principals, and 3 SHSU faculty—is the third group that engages in the continuous feedback

process. SHIPS meets monthly to discuss and reimagine novice teacher induction and teacher

recruitment practices. Through this collaborative space, members are able to share best practices

and inform the novice teacher induction support practices of their LEAs. SHIPS is vital to the

implementation of the CIPP model through ensuring quality inputs. The last element of the

continuous improvement process is the *bi-annual 4+1 TEACH retreat.* All stakeholders—

including the Dean, director, coordinators, principals, SBMs, FRMs, and SHIPS members—will

come together to review progress toward meeting goals, objectives, and outcomes, give

feedback, and adjust programming as needed.

Section D. Quality of the Project Evaluation

4+1 TEACH will use a variety of valid and reliable measures throughout the grant period

to ensure we are accountable to the goals and objectives we have outlined in the management

plan and that we deliver evidence related to key outcomes that meet What Works Clearinghouse

(WWC) standards with reservations. Complementing the internal evaluation effort led by the 4+1

TEACH leadership team, Dr. Carol Stuessy will serve as the external evaluator for this project

(see Appendix D for letter of support). Collaboratively, the 4+1 TEACH leadership team has

extensive experience monitoring program implementation and evaluating project outcomes (see

Appendix B for Key Personnel Vita). Additionally, Dr. Stuessy has served in multiple capacities including PI, co-PI, internal evaluator, and external evaluator on 38 grant-funded projects (14 federally funded), which demonstrates her expertise and ability to serve in this capacity (see Appendix B for external evaluator vita). Dr. Stuessy will be assisted by the 4+1 TEACH doctoral fellows in collecting and analyzing data. The study will address 6 research questions outlined in sections D.1. and D.2

D.1. Project Evaluation Plan. The leadership team and external evaluator will follow a research plan consistent with accepted program evaluation methods. A mixed-methods research design will be employed to provide timely information to the 4+1 TEACH leadership team to monitor and adjust the program in order to meet program goals and objectives. Dr. Stuessy, assisted by 4+1 TEACH doctoral fellows, will provide the leadership team with formative assessment information through weekly meetings, monthly calls, bi-annual briefings, and annual reports. Dr. Stuessy will also produce evaluation reports that will be accessible to 4+1 TEACH stakeholders, including policymakers and practitioners at other institutions. These findings will be disseminated in the field through professional conferences and publications in practitioner and peer-reviewed journals. Appendix C, Table 6 displays the program evaluation timeline.

Dr. Stuessy will use the 4+1 TEACH logic model (see Appendix G) to inform the inputs, outputs, and expected outcomes. Dr. Stuessy will utilize the rich data collected by the 4+1 TEACH leadership team and will supplement this information with site-visits, interviews, and focus groups. As new partner LEAs are established, Dr. Stuessy will assess what is required to implement the 4+1 TEACH induction model on new sites including policies, personnel, communication, and time. These findings will help inform the teacher preparation community and other LEAs of the resources needed to implement similar programs in other regions.

RQ 1: How are novice teachers supported and mentored during their induction years, and how does that compare to evidence-based practices outlined in the literature?

Findings from research question one will provide partners will information relevant to the fidelity of implementation of the 4+1 TEACH novice teacher induction model, which is founded in evidence-based best practices. Dr. Stuessy will work with the 4+1 TEACH leadership team to establish acceptable levels of implementation for each of the components of the model. The fidelity of implementation will be assessed through site-visits, stakeholder interviews, and program surveys. These data sources will be triangulated to create a well-rounded view of program implementation. The findings from this research question will provide the 4+1 TEACH leadership team and partners with relevant areas for improvement in subsequent program years.

D.2. Produce Evidence that would meet the WWC Standards with Reservations

The 4+1 TEACH evaluation plan is designed to meet WWC standards with reservations through a quasi-experimental design. Propensity score matching (Caliendo & Kopenig, 2008) will be used to create a matched sample of 4+1 TEACH residents and SHSU Business as Usual (BAU) graduates that are equivalent in important characteristics so that the findings meet WWC standards with reservations. Because of the expected low attrition rate, we estimate total matched sample of 550 teachers. The following factors will be used to create the matched sample: *position*—grade, subject; *school*—percent economically disadvantaged students, English language learners, student academic achievement (reading & math); and *teacher characteristics*—years of experience. In following with WWC standards, comparison groups will not vary by more than .25 standard deviations on baseline characteristics. We expect a low attrition rate among 4+1 TEACH residents because of the commitment required upon entering the program. The same matched sample group will be used for research questions 2-6.

An additional matched sample group will be created to compare 4+1 TEACH SBMs and LEA's BAU SBMs. BAU SBMs will be engaged in mentoring non-4+1 TEACH novice teachers. The matched sample will be created using the following factors: *position*—grade, subject; *school*—percent economically disadvantaged students, English language learners, student academic achievement (reading & math); and *teacher characteristics*—years of experience teaching, years of experience as a SBM. This matched sample will be used in the analysis for RQ 3 and RQ 6.

RQ 2: **How does 4+1 TEACH positively impact teacher retention?** Employment records for 4+1 TEACH residents and SHSU BAU matched sample novice teachers will be requested through the Texas Education Agency annually. We will specifically examine these teachers' 3-year and 5-year retention at their original campuses, within their original districts, and within the state. We will test the hypothesis that 4+1 TEACH residents' retention in all three areas will exceed the matched sample of SHSU BAU novice teachers. An additional investigation, not meant to meet WWC standards, will be conducted to describe the number of teachers of color produced by 4+1 TEACH and the number of teachers produced in shortage areas. This aligns with 4+1 TEACH's first goal of producing teachers that meet LEA needs.

RQ 3: To what degree does 4+1 TEACH positively impact teachers' implementation of evidence-based instructional practices (including CT)? Two primary measures (described in D.3) will be used to measure teachers' implementation of evidence-based instructional practices, including computation thinking. First, the average ratings on the T-TESS observation instrument will be compared for dimensions related to instructional practices. An additional measure of teachers' implementation of evidence-based strategies, the Student Perception Survey, will be compared for the matched sample. Additionally, residents, SBMs, and their

matched samples will complete the CAQ as a measure of their attitude toward CT and intent to implement CT strategies in their classrooms. This RQ will test the hypothesis that 4+1 TEACH residents and their mentors will better implement evidence-based instructional practices, will have better attitudes toward CT, and will more frequently intend to implement CT strategies.

RQ 4: To what degree does 4+1 TEACH positively impact student outcomes? The academic achievement of students taught by 4+1 TEACH residents and their matched sample will be compared with one modification. Because not all 4+1 TEACH residents will teach in tested grade levels, a smaller matched sample (approximately n=190) will be used. Student academic achievement will be controlled for prior year achievement and student characteristics. Student academic achievement will be measured by students' scores on the State of Texas Assessment of Academic Readiness (STAAR) in reading, math, science, and social studies in grades 3 through high school End of Course (EoC). This analysis will test the hypothesis that students taught by 4+1 TEACH residents will display higher academic achievement than students taught by SHSU BAU novice teachers.

RQ 5: To what degree does 4+1 TEACH positively impact novice teachers' **perceptions of success?** The goal of 4+1 TEACH is to support novice teachers during their induction years. Therefore, the residents and their matched sample will be compared on their perceptions of success as measured by the Perceptions of Success Inventory for Beginning Teachers. This analysis will test the hypothesis that 4+1 TEACH residents will perceive themselves to be more successful on eight factors related to novice teacher success than will SHSU BAU novice teachers. We will also conduct exploratory research related to RQ 5 that is not designed to meet WWC standards. As part of this exploration, we will conduct interviews with 4+1 TEACH residents to gain insight into their induction experiences and perceptions of

success during these years. These interviews will guide programmatic improvement as well as complement the information gathered in the quasi-experimental study.

RQ 6: Is there a positive impact of 4+1 TEACH on teachers' display of teacher leadership qualities? An outcome of the intensive professional learning inherent in the 4+1 TEACH model is teachers' development of teacher leader behaviors. To measure this construct, residents, SBMs, and their matched samples will be rated on the Teacher Leader Model Standards Instrument by their principals. This analysis will test the hypothesis that 4+1 TEACH residents and their SBMs will more readily display teacher leader behaviors than their matched samples. This research question will also have an exploration aspect that is not designed to meet WWC standards. To further understand the experiences that residents and SBMs perceive to have influenced their leadership, we will conduct interviews and focus groups. These qualitative interviews will help us to better understand ways in which we have facilitate the development of teacher leaders.

D.3. Valid and Reliable Performance Data on Relevant Outcomes. The evaluation plan utilizes multiple data sources to answer each research question in order to triangulate data and create a well-rounded view of program implementation and outcomes. For research questions 2-6, employment records (vacancy information, new hire demographics, and placement records), program records (applicant/candidate demographics, field experience locations, and course-based assessments) observations (conducted by principals, SBMs, and FRMs using T-TESS), surveys (SPS, PSI-BT, CAQ, and TLMSI), interviews (individual and focus groups), and student academic achievement tests (STAAR disaggregated by teacher and student demographics) will all be used. Appendix C, Table 7 aligns the research questions to relevant outcomes and data sources.

The evaluation plan uses valid and reliable measures to assess the impact and outcomes of the 4+1 TEACH program. Given the experiences of the leadership team and external evaluator with collecting and analyzing survey data, using state and district data systems, conducting large-scale program evaluations, and managing large data sets, we are confident in our ability to manage an evaluation plan of this magnitude. The SHSU CoE has historically been successful in accessing data housed within partner LEAs (e.g. employment records, assessment results, observations, etc.), so we expect similar successes in this project. The following valid and reliable measures will be used to assess 4+1 TEACH outcomes.

Perceptions of Success Inventory for Beginning Teachers (PSI-BT). The PSI-BT was developed to measure beginning teachers' experiences during their induction years related to eight factors that have been found to be related to novice teacher success (Corbell et al., 2010). The developers used factor analysis to confirm the eight-factor model displayed good fit, which suggests construct validity. Additionally, the developers used structural equation modeling to examine the predictive power of the PSI-BT. This analysis revealed four of the factors (administration support, classroom management, instructional resources, and assignment and workload) were significant predictors of commitment and satisfaction. This analysis also revealed that satisfaction and commitment were significant predictors of teachers' intentions to stay in the profession and actual retention after 1 year. Each 4+1 TEACH resident and matched sample SHSU BAU novice teachers will complete the PSI-BT in April of each of their 3 residency years. Data from this instrument will be used to answer research question 5.

Texas-Teacher Evaluation and Support System (T-TESS) Observation Protocol. The Texas Education Agency adopted the T-TESS instrument as the state recommended observation protocol. Although LEAs can elect to use other instruments, the 4+1 TEACH partner LEAs all

use the T-TESS to appraise their teachers. T-TESS is organized into 4 domains and 16 dimensions. For the purposes of this research, the dimensions related to planning, instruction, and learning environment will be used to measure teachers' implementation of evidence-based practices for research question 3. Through a multi-year pilot, the observation instrument has demonstrated internal consistency and the ability to differentiate teacher performance (Lazarev, Newman, Nguyen, Lin, & Zacamy, 2017). We will collect summative T-TESS observations, conducted by certified raters, from LEAs at the conclusion of each academic year.

Colorado's Student Perception Survey (SPS). The SPS was designed to measured 3rd-12th grade students' experiences that are most closely correlated to a teacher's ability to impact student growth. Both versions of the instrument (Grades 3-5 and Grades 6-12) will be used in this study. The survey is organized into four elements: student learning, classroom community, classroom management, and student-centered environment. Both versions have displayed high levels of internal consistency ($\alpha > 0.9$) (The Colorado Education Initiative, 2013). Additionally, the SPS is highly correlated to two educator evaluation measures, demonstrating construct validity (The Colorado Education Initiative, 2013). The SPS will be administered to each resident's and matched sample's students in April of each year.

Teacher Leadership Model Standards Instrument. As part of the LEADERS project funded by the National Science Foundation, the PSI-BT was developed to assess teachers' leadership behaviors outlined by the Teacher Leadership Model Standards (TLMS) (Doraiswamy et al., 2016). This instrument asks the observer to rate teachers on a scale of 0-3 in each of the seven domains of the TLMS and to provide one global capsule score on a sale of 1-5. The developers established validity by comparing rankings of teacher leaders to scores given on the TLMSI, which resulted in a strong correlation, $\rho = 0.713$, $p < .001$. Furthermore, the instrument

was developed to be consistent with an established set of professional standards, imputing face validity. Inter-rater reliability was established by comparing assessments conducted by experts in the field of teacher leadership, resulting in a population reliability coefficient of 0.86 and a sample reliability coefficient of 0.90. Residents and SHSU BAU novice teachers will be evaluated by their SBMs and principals. Additionally, 4+1 TEACH residents will be scored by their FRMs. For SBMs, their principals will provide their assessment. Data from this instrument will be used to answer research question 6.

Computing Attitude Questionnaire (CAD). The CAD was developed to measure teachers attitude toward CT and their intention to implement CT strategies into their instruction. This survey consists of 21 4-point Likert scale questions organized into five categories: (a) definition, (b) comfort, (c) interest, (d) use in classroom, and (e) career/future use. However, only the first four dimensions will be used in this study. Internal reliability has been established at ($\alpha = 0.76$). Residents and SBMs will complete the CAD one month after completing the CTI and the STEM+C Camp, and the matched sample will complete the CAD simultaneously without having completed the CTI or STEM+C Camp. Data from this instrument will be used to answer research question 3.

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