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Tulare County Office of Education (TCOE) in partnership with California State University, Bakersfield (CSUB), School of Social Sciences & Education, Department of Teacher Education, and CSUB Department of Computer and Electrical Engineering and Computer Science,¹ and Visalia Unified School District (VUSD) is pleased to submit the *Teacher Residency for Rural Education* (TRRE) project to the U.S. Department of Education, Office of Elementary and Secondary Education for the 2019 Teacher Quality Partnership Grant Program (TQP).

The *Teacher Residency for Rural Education* (TRRE) is a teacher preparation program for graduate students seeking to obtain their single subject credential in math, science, English or special education, earn a Master's degree in Education with

The mission of teachers is to create learning opportunities by removing barriers to learning, creating equal access for all. Fueled by the social injustices in educational systems, teachers can empower students to lead self-determined lives.

~ **Dr. Linda Lengyel, Cambridge, MA**

emphasis on curriculum and instruction, and participate in high quality professional development in computer science. TRRE offers a unique synthesis of theory, research and practical hands-on experience, combining a year-long classroom clinical experience while taking credential and master's coursework through CSUB. All aspects of project are guided by principles of social justice and educational equity.

The Tulare County Office of Education (TCOE), California Center on Teaching Careers (the Center) is a statewide body charged with helping meet California's teacher demand through collaborative leadership, personalized digital pathways to teaching, and a repository for best practices in recruitment, selection and hiring, as well as resources to help navigate the process. Based on nearly two decades of experience in teacher recruitment and support, TCOE was awarded the 2017 California Center on Teaching Careers Grant in partnership with seven

¹ CSUB equivalent of Colleges/Schools of Arts & Sciences, and Education

regional satellite centers (County Offices of Education from Tulare, Riverside, San Diego, Los Angeles, Sonoma, Ventura, and Shasta) dedicated to increasing the teacher workforce, particularly in the recruitment of ethnically diverse/bilingual math, science, and special education teachers. The Center, as a statewide collaborative organization, is uniquely positioned to scale up the *Teacher Residency for Rural Education* model, provide statewide access for organizations on best practices in residency models, and provide leadership on replication of sustainably funded teacher residency programs.

Teachers get in on the ground floor of the most important investment there is: our future. By improving our craft, we create greater opportunity for generations to come. Invest in the future, become a teacher.

~Residency graduate

TRRE involves collaboration among key partners at multiple levels including the Center, CSUB, Stanford Teacher Education Program, VUSD, the Bank Street School, EnCorps STEM Teachers Program, and a cadre of community-based partners committed to supporting

the development of high-quality teachers for high need rural students.

(a) QUALITY OF THE PROJECT DESIGN (40)

i. Extent proposal demonstrates a rationale

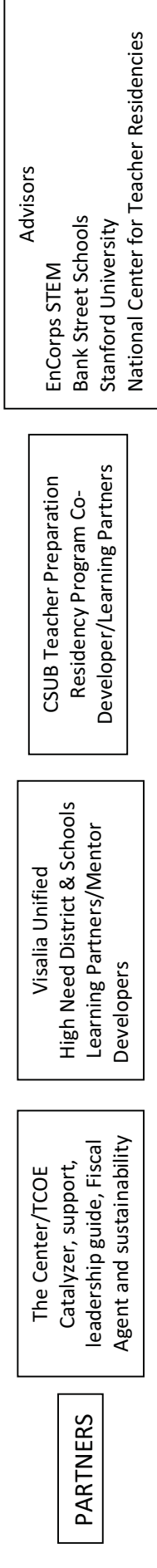
Rationale/Theory of Action: *By providing an innovative residency model approach to recruit and retain teachers for high needs fields and locations and by offering residents strong content and clinical preparation, early career mentoring, and a strong cohort model of support, teachers will be better prepared, more effective, and responsive to the wide-ranging needs found within classrooms in high need rural schools. Research suggests that well-designed and well-implemented teacher residency models can create long-term benefits for districts, for schools, and ultimately, and most importantly, for the students they serve.*

The design and implementation of the Center's TRRE Residency Model is founded on research and best practices in teacher residency programs as an innovative approach to recruiting

and retaining high-quality teachers for high-need, hard-to-staff schools. TCOE and its partners believe, and research supports, that educator effectiveness is the most important school-related factor affecting learner achievement; all students, particularly our most vulnerable, deserve qualified and effective teachers to guide them to be successful in school and graduate college- and career-ready. The project is grounded in: 1) careful recruitment and selection of residents and mentor teachers within a strong partnership between the Center, the district, and the university; 2) tightly integrated curriculum based on a year-long clinical placement in high-need classrooms; 3) adequate financial assistance; and 4) mentoring supports including a graduate Professional Learning Cohort (PLC) as candidates take on classrooms and move into their second and third year of teaching.

The TRRE proposal addresses *Absolute Priority 1: Partnership Grants for the Establishment of Effective Teaching Residency Programs* by providing a Residency model that offers pathways leading to teacher certification and Master's degree as well as a pathway for mentors to obtain National State Board Certification. The project will leverage the learning and existing partnerships from the Center's best practices in recruitment and selection and teacher residency programs developed by CSUB and the National Center for Teacher Residencies (NCTR). The project residency model has been designed based on a comprehensive needs assessment, research on best practices of effective residency models and lessons learned in implementation of successful local models with the goal to prepare prospective and new teachers with strong teaching skills and competencies to work in high need rural schools.

The logic model on the following page (and included as Appendix G) illustrates the shared relationships among the resources, activities, outputs, outcomes and impact for the proposed TRRE project.



UNDERLYING CONDITIONS

Critical teacher shortage • Decreased enrollment in teacher prep programs • Significant # of teachers on waivers • Few teachers prepared for STEM/Computer Science
 Significant teacher turnover • High rates of poverty and English Learners • Difficulty recruiting teachers for rural areas • Lackluster student achievement in core content

<p>Resources</p> <ul style="list-style-type: none"> Model teacher residency program at CSUB; School and district need for instructional support; Experts in STEM computer science; Experience and expertise in innovative recruitment and selection; Experience in induction support; Statewide network of collaborators and partnerships; Statewide digital portal/clearing house for best practices; TQP grant stipends Platform and protocols for candidate/mentor selection; Partnership with CA Commission for Teacher Credentialing (CTC) 	<p>Activities</p> <ul style="list-style-type: none"> Oversee establishment of TRRE; Coordinate with partners; Recruit and select residents; Select mentors; Year-long clinical practice (3-4 days/wk); Coursework in cohorts; Monthly meetings for training, calibration and review of resident data; Professional learning and conferences for residents and mentors; National State Board Certification for mentors (Stanford Teacher Ed Program) STEM/Computer Science LAB and multi-disciplinary training 	<p>Outputs</p> <ul style="list-style-type: none"> TRRE graduates are certified teachers with Masters degrees Mentors hold National State Board Certification TRRE graduates have certifications that match the needs of LEA partners TRRE graduates have induction support in a graduate PLC TRRE graduates hired and persist in high need schools 	<p>Short term outcomes</p> <ul style="list-style-type: none"> TRRE residents apply content and pedagogical knowledge in instructional strategies; Use data to inform instructions; Increase number of residents recruited from underrepresented groups in STEM+C <p>Mid term outcomes</p> <ul style="list-style-type: none"> 85% of residents attain initial certification (GPRA 1) 85% of residents trained to integrate STEM+C pedagogy (GPRA 2) Student benchmark data trends show improvements in academic success measures in classrooms with residents (GPRA 6) <p>Long term outcomes</p> <ul style="list-style-type: none"> 80 Single-subject credential completers over 5 years 85% 1-year persistence in residency program (GPRA 3) 85% 1-year retention rate for teachers hired in local and high need districts (GPRA 4) 85% 3-year retention rate for teachers hired in local and high need districts (GPRA 5) 100% of completers placed in high need schools Pipeline of highly qualified teachers prepared in STEM+C fields to work in partner districts Resident graduates outperform other teachers in student achievement - 5% growth in aggregate learning outcomes of students taught by TRRE completers (GPRA 6) The Center, CSUB, VUSD develop and sustain partnerships and institutionalize residency model The Center disseminates best practices statewide and nationally
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The *Teacher Residency for Rural Education* project draws on successful teaching residency models like those developed at California State University, Dominguez Hills (TQP 2009: 98% earning credential and 94% two-year retention rate, 2009), CSUB (TQP 2014: 100% Cohort 3 graduates teaching in high-needs schools; 88%

I set up the classroom with my cooperating teacher the week before the first day of school...and I started from the very, very first day of school. I got to see an entire year, five days a week. Just seeing the full year, I knew what to expect, and I felt like I had so much more experience.

~SFTR graduate

in a rural school), the San Francisco Teacher Residency Program (after 5 years, 80% of San Francisco Teacher Residency Program (SFTR) are still teaching in SFUSD; of all graduates over the last 5 years, 97% are still teaching with 89% teaching in SFUSD), the Bank Street School Prepared to Teach (leader in sustainable residency models), and the National Center for Teacher Residencies. TRRE integrates rigorous graduate-level coursework that leads to a master's degree (M.A. in Education, emphasis in Curriculum & Instruction), deep clinical practice tightly aligned with coursework and structured inquiry (900 clinical hours), a cohort structure that facilitates professional collaboration, and mentoring support that extends through induction.

TRRE innovations are based on current research connected to high leverage practices (Ball & Forzani, 2011); evidence-based practices in equity and access for vulnerable populations (Gershenson et al., 2017; Grossman & Loeb, 2008; Haynes, Maddock & Goldrick, 2014); community immersion approaches (Waddell, 2013); intensive clinical preparation (Darling-Hammond & Lieberman, 2012); improvement sciences (Bryk, A., et al., 2015); and alignment to Common Core State Standards and national standards (College/Career, Next Generation Science Standards); and priorities in STEM+C. The program structures and strategies are designed based on the Logic Model (p. 4).

Teaching in high poverty schools with students having a wide range of languages, cultures, and home settings requires a diverse set of skills and competencies beyond those required in schools serving more affluent and better-supported students. Decades of research on student academic achievement highlight the importance of the teacher’s ability to bridge the knowledge and values that students bring to the classroom with academic content and competencies. TRRE integrates knowledge of students, families, school and communities to prepare teachers to support student achievement in rural high-need school. The program braids support in the form of coursework and experiences which build upon the coherence of the cohort structure, the importance of building community embedded into teacher preparation, and the synergy of the project’s foundational supports: 1) *content and pedagogy*; 2) *a cohort model*; and 3) *community and family competence in rural teaching*.

The first foundational support, *content and pedagogy*, rests on the premise that all students deserve access to high-quality core content instruction that is differentiated to meet their needs, grounded in research, and provides increasingly intensified tiered levels of instructional and behavioral support. Teaching Residents will learn content and pedagogy through a focus on discipline-specific pedagogy. TRRE curriculum aligns with California standards such as the Next Generation Science Standards (NGSS) and Common Core State Standards in mathematics and English, that provides opportunities for all students to engage in discipline-specific approaches (including evidence-based practice and high-leverage practices) highlighting reasoning skills, integrated literacy instruction, and authentic experiences. Certification coursework will inform classroom experience through discipline-specific courses; professional development will take place concurrently with clinical practice and on-site. Residents will develop knowledge of formative and summative assessment practices to use data to inform instruction. Additionally,

TRRE requires frequent feedback and performance-based assessments of residents' classroom practice. As part of their preparation, residents will complete the Performance Assessment for California Teachers (PACT) – a portfolio modeled on that used for National Board Certification.

Residents will have multiple opportunities to form and interact as a *cohort in clinically-rich settings*. TRRE will use a twofold cohort structure, integrating site-specific pathway cohorts of 3-5 residents who meet three times each month and a single Residency Cohort bringing all residents together once a month. Peer observation and structured debrief as a core practice in each cohort's clinical experience shows its demonstrated effectiveness in fostering cultures of collaboration (Marzano, 2011) and enhancing professional inquiry around authentic problems of practice (Goodwin, Del Prete, Reagan & Roegman, 2015). Following completion of the program, graduates will be supported through ongoing induction mentoring support in and out of the classroom and through a Graduate Professional Learning Cohort (PLC) to continue the collaboration established in their clinical experience.

Preparing teachers for long-term effectiveness in high-need rural areas requires that they engage with the knowledge of the different contexts their students encounter in their everyday lives. Research supports high quality residency programs that are co-designed between districts and university to ensure residents get to know the students and families in the communities in which they will be teaching and are rigorously prepared to teach in the community and school context. The project's third foundational support, *community and family competence in rural teaching*, emphasizes a proactive problem-solving stance of civic engagement aimed toward fostering a more sustained teacher resident investment in their local community. Developing teachers' abilities to engage and support student learning in rural communities requires a number of related strategies, all of which emphasize 1) drawing on the strengths of rural communities to

bridge school-based and locally-valued knowledge and practices and 2) building community connectedness into teacher preparation (Hammer et al., 2005). Preparing teachers in ways that are integrated with existing community practices builds teachers' social capital in rural communities, which promotes both student learning and teacher efficacy while also building a base of local professional support for the teacher in the community (Adams & Woods, 2015).

The TRRE project addresses the need for highly qualified STEM educators with an emphasis on computer science (STEM+C) educators who are able to create and facilitate interdisciplinary STEM+C lessons that engage local issues and help students translate concepts into the broader digital infrastructure - skills that will prepare them for the competitive world in which they live. The scope of this project thus addresses ***Competitive Preference Priority 1: Promoting Science, Technology, Engineering, or Math (STEM) Education, With a Particular Focus on Computer Science***. Research relating to the kinds of knowledge that computer science teachers require (subject matter knowledge, pedagogical knowledge, and curricular knowledge) is both clear and consistent (Gal-Ezer, J & Stephenson, C., 2010) as is the importance of interweaving theory and practice (Jaworski & Gellert, 2003) into the experience of pre-service teachers before they become responsible for classrooms of their own.

The TRRE project will launch with a summer STEM+C Lab School which will take place before residents begin their clinical practice at their respective sites. The Lab School will be integrated into the summer school program at VUSD and will bring together Residents, IHE faculty mentors, district teacher mentors and middle and high school students to participate in a 2-week clinical co-teaching experience. During the first Lab, incoming Residents will assume the role of observers and co-teachers with mentor teachers from the district as they begin to engage with STEM, computer science, and the intersections of these disciplines. Participation in the first

Lab will enable Residents to experience a STEM+C unit and build their capacity to include a STEM+C unit in their clinical placement during the following academic year. During the year-long clinical placement, Residents will also participate in the District's Computer Science Pathway (year-long) one to two days per month to explore hands-on, project-based lessons in a computer science class. As a capstone experience, the Residents participate in the same Lab the following summer as part of the lead teacher group. Residents will begin their program as a pre-teacher candidate and finish as a teacher leader for the incoming cohort of residents.

In terms of sequence of the Summer Lab School, each day of week one will be composed of a morning session in which Residents will observe and co-teach in a clinical gradual release model with LEA mentor teachers and IHE content area specialists in teacher education and STEM+C and an afternoon session in which Residents, LEA mentor teachers and IHE content-area specialist engage in knowledge and skill building regarding STEM+C curricula and pedagogy. The afternoon sessions will also include coaching sessions and Lesson Study, in which Residents will participate in cycles of planning, reflection and revision following their observations. In the second week, Residents will begin co-teaching with the LEA mentor teacher and content area specialists during the morning and the afternoon will, again, be composed of knowledge and skill building.

To help Residents translate their learning from the STEM+C Lab into their respective classrooms in ways attuned to the needs of the community, the TRRE project will curate a team of IHE faculty in teacher education and computer science, VUSD science specialists and mentors to engage in cycles of observation, reflection and revision with the Residents in their classrooms. In particular, the curated coaching team will help residents hone their ability to facilitate multidisciplinary STEM+C curricula and pedagogy, as well as understand and implement

empirically-based practice and scientifically valid research related to the effective use of technology, instructional techniques, and strategies consistent with the principles of universal design for learning and through positive behavioral interventions and support strategies to improve student achievement including integration of literacy learning and strategies for students with learning challenges. Graduate residents will participate in high level professional development and may obtain a Microcredential (developed with Digital Promise in partnership with the project) in Computer Science based on coursework completion, assessment and participation in the TRRE project-based STEM+C learning lab.

Coaches will ensure Residents understand and implement student learning methods; analyze student academic achievement data and use such data to improve classroom instruction; meet the specific learning needs of all students, including students with disabilities, students who are limited English proficient, students who are gifted and talented, and students with low literacy levels; differentiate instruction for all students; and effectively participate as a member of the individualized education program team, as defined in section 614(d)(1)(B) of the Individuals with Disabilities Education Act (IDEA), as well as Student academic achievement standards and academic content standards under section 1111(b)(1) of the ESEA. These intensive levels of differentiation will be introduced at the Summer STEM+C Lab School (Launch) as Residents engage with clinically-based exemplars of high quality, empirically-based differentiation and will be part of a sustained conversation with their coaches throughout the year-long coaching experience. Residents will be expected to model high-quality, empirically based differentiation for the incoming cohort of Residents during their STEM+C Lab and the outgoing cohort's STEM+C Lab (Capstone). These dimensions of research-based teaching practices will also be tightly connected to the residents' coursework in each of their respective methods courses.

Given the gap in literature regarding best practices in STEM+C curricula and pedagogy, the TRRE project will, in part, use the design-year of the grant to bring together content area experts in the fields of education and STEM+C to develop innovative curricula and pedagogy that integrates research-based pedagogical practices in the respective fields and aligns content to state and national standards. The result will be a series of unit plans that Residents and LEA districts can use as a way to scaffold the infusion of STEM+C education in 6-12 classrooms, as well as the redesign of the literacy, social studies, math, and science methods courses within the Residency programs and throughout the traditional teacher education program. The sum of these units will comprise the curriculum and pedagogy of a STEM+C Elective Course. The elective course will be piloted during year 2 of the grant at Divisadero Middle School and then be scaled to the other LEA school sites through either their afterschool programs or as an elective course. Ultimately, the course will be designed for scalability to other schools in the LEA and other districts in the years following the funding years of the grant with management and funding fully transitioning to the LEA districts.

TRRE will support existing school-site leaders, administrators, superintendents, LEA district specialists, and IHE faculty by providing calibrated, research-based professional development through in-person, web-based, and hybrid technology. The professional development will be co-created and co-implemented with the TRRE partners and will integrate research-based, high leverage practices for student achievement; teacher recruitment, retention, and induction; the content areas of civics, STEM, and computer science; and the capacity building needed to develop and sustain high quality STEM+C curriculum, pedagogy, assessment, and related programming at the end of the federal assistance period.

ii. Goals, objectives, and outcomes are clearly specified/measurable

The overarching goal of the project is to increase student achievement by developing teachers with a diverse set of skills and competencies to provide high quality instruction in the context of our local high need schools. TRRE will prepare 80 highly qualified teachers across four cohorts over the five-year grant period. Each TRRE cohort of 20 residents will complete the program over 18 months, from July (Year 1 of their residency in clinical practice) through January (Year 2 completion of graduate coursework in induction phase). Residents will engage in: 2-week STEM+C Lab in July focused on multidisciplinary project based STEM+C activities; a year-long residency experience; pedagogical coursework required for Residents' specific certification areas; and professional development and community-engagement activities, including integration of strategies to integrate literacy across content and strategies to integrate lessons for English Learners and students with disabilities.

I've always wanted to be a teacher. I love to show people new things, learn from people, and provide new experiences. And I've stayed a teacher because of the impact I'm making on my students and their parents.

~ LAUSD Apprentice

Year 1 of the project will be devoted to co-planning, recruitment and selection of residents and mentors with the launch of the program in July 2020 with the STEM+C Lab. In Year 2, Cohort 1 Residents will begin their clinical practice and graduate coursework. In Years 3-4, the project will launch another cohort of residents while revising and renewing protocols/procedures and co-creating professional learning opportunities. Year 5 continues with induction support of previous cohorts and launch of the final cohort as the project transitions to strategic support for self-sustainability. After the funding period, VUSD will continue induction support for the final cohort of residents; the Resident PLC structure will also provide peer support during the induction phase. The following chart illustrates the progression of cohorts in the project

Year	Residency										Induction	
	Recruitment	Selection	SUMMER STEM+C Lab School	Residency Placement	YEAR-LONG STEM+C Lab School	Residency Employment Placement	Certification	Masters	Y1	Y2		
1	Cohort 1	Cohort 1	Cohort 1									
2	Cohort 2	Cohort 2	Cohort 2	Cohort 1	Cohort 1	Cohort 1	Cohort 1		Cohort 1			
3	Cohort 3	Cohort 3	Cohort 3	Cohort 2	Cohort 2	Cohort 2	Cohort 2	Cohort 1	Cohort 2	Cohort 1		
4	Cohort 4	Cohort 4	Cohort 4	Cohort 3	Cohort 3	Cohort 3	Cohort 3	Cohort 2	Cohort 3	Cohort 2		
5				Cohort 4	Cohort 4	Cohort 4	Cohort 4	Cohort 3	Cohort 4	Cohort 3		
6								Cohort 4				Cohort 4

Post funding period

The proposed TRRE project has 4 core goals: *Goal 1:* Recruit and prepare qualified single subject residents in STEM+C, and English; *Goal 2:* TRRE graduates will be hired and retained as teachers in high-need partner LEA; *Goal 3:* Students of TRRE graduates will outperform students of non-participating novice math and science teachers in the rural Central Valley; and *Goal 4:* the Center, CSUB, and rural high need partner LEA and schools will develop and sustain project partnerships and institutionalize its residency program model to drive improved student outcomes. The chart on the following page identifies objectives and outcomes by goal.

Objectives and Outcomes by Goal	
OBJECTIVE	OUTCOME
Goal 1: Recruit and prepare qualified single subject residents in STEM+C, English, Special Education	
1. By June of each year, the project will have a cohort of at least 20 trained mentors for resident pathway.	<ul style="list-style-type: none"> • 20 mentors meeting selection criteria • Mentors trained (Center, CSUB faculty) • Complete National Board Certification (Stanford)
2. By June 2024 (Year 5), the project will have 80 single subject credential completers.	<ul style="list-style-type: none"> • 80 candidates meeting rigorous performance standards and selection criteria: 20+ candidates annually selected for each cohort (Years 2-5) for a total of 80+ residents • EnCorps STEM teachers program recruiting STEM professionals into teaching aligning with the Center's recruitment • Completion of year-long clinical practice (900+ hours); pedagogy and curricula with skills matched to district needs • Master's degree (Education, Curriculum & Instruction) • Meet district need STEM+C certification
3. By June 2021 (Year 2) and annually, 85% of residents will attain initial certification as measured by results on CalTPA. (GPRA 1)	<ul style="list-style-type: none"> • Residents will complete coursework in cohort group (Thurs) • Co-teach with mentors M-W in high need classrooms • Coursework completion for preliminary credential delivered by CSUB and district content specialists • Monthly meetings for training, calibration and review of resident data
4. By June 2022 (Year 3) and annually, 85% of residents will be trained to integrate STEM+C by passing necessary certification assessments within one year of program completion. (GPRA 2)	<ul style="list-style-type: none"> • STEM+C lab 2 Fridays/month to focus on multidisciplinary integration of computer science/project-based activities at sites • Lab school focused on project-based STEM+C activities in summer for residents and district teachers • Pipeline of highly qualified teachers prepared in STEM+C fields to work in partner high need districts
5. By June 2022 (Year 3) and annually, 85% of residents will persist in the TRRE program as (GPRA 3 – 1-year persistence).	<ul style="list-style-type: none"> • Completion of clinical practice hours • Participation in STEM+C labs • Mentor assessment • Credential coursework
Goal 2: TRRE graduates will be hired and retained as teacher in high need partner LEA	
6a. By June 2024, 100% of completers will be placed in local high need schools	<ul style="list-style-type: none"> • Highly qualified teachers fulfill district hiring needs • Each completer will meet all applicable state certification and licensure requirements

Objectives and Outcomes by Goal	
OBJECTIVE	OUTCOME
6b. In Year 3 of the program and annually, 85% of the program completers employed as teacher of record in partner LEA will persist for 1 year. (GPRA 4: 1-year persistence)	<ul style="list-style-type: none"> • Participation in Professional learning cohorts during the induction phase of the project • Completion Masters coursework • Center, VUSD, and CSUB continue support structure for induction phase including preparation for CalTPA or other certification assessments
6c. In Year 5, 85% of program completers hired in partner LEA will complete three consecutive years after initial employment. (GPRA 5 -- 3-year retention)	<ul style="list-style-type: none"> • Diverse set of skills and competencies within local context • Build the capacity of the district to provide high-quality instruction • Preparation and induction support targeted to the needs of the district • Teachers are prepared within the context of high need districts in areas of need
Goal 3: Students of TRRE graduates will outperform student of non-participating novice math and science teachers.	
7. By June 2022 and annually, there will be a 5% growth in aggregate learning outcomes of students taught by TRRE completers as measured by ELA, math and science assessments. (GPRA 6)	<ul style="list-style-type: none"> • Improved student success • Equal access to highly effective teachers • Increased achievement of school site academic goals • Enhanced school improvement efforts
Goal 4: The Center, CSUB, and rural high need partner LEA and schools will develop and sustain project partnerships and institutionalize its residency program model to drive improved student outcomes.	
8. By June 2024, the project will have developed a self-sustaining program model that can be scaled statewide as evidenced by sustainability plan.	<ul style="list-style-type: none"> • Advisory Council established in Year 1 • Sustainable program model through partnership funding • Best practices toolkit for sustainability

One of the key characteristics of the TRRE residency program is the strong partnerships that have been established between the Center, VUSD, and CSUB. Each key partner brings unique resources to the project.

TCOE

The Center developed and brings to the project, state-of-the-art strategies to recruit teachers including a virtual recruitment platform, hosted at

After 15 years of teaching, Los Angeles Unified School District has found the Center's platform a viable means to recruit quality candidates. We attended two virtual fairs and I was able to meet over 80 people virtually. I have personally interviewed candidates from Tennessee, Virginia, and San Jose that I would not have normally had access to as a result of this via video and text interview on this platform. This technology is cost effective and targeted to our market.

~ LAUSD HR Administrator

CaliforniaTeach.Org. This platform is used to not only attract diverse candidate pipeline but also to provide a plethora of resources and information for becoming a teacher resident. This venue will allow potential candidates to obtain electronic information as well as interact with the Center's team conducting live webinars covering a wide range of topics such as program design,



eligibility and course requirements; program application and enrollment procedure; financial aid and living stipend opportunities; pathways for earning additional income; program, school and community support; housing and living

information; and travel and attractions. The advanced digital platform allows for potential candidates and program administrative teams to connect without having to travel out of the office. It's an innovative venue for meaningful interaction and informative meetings to take place at any scheduled time of the day. It will also attract a wider pool of potential candidates giving the recruitment and selection team the opportunity to truly select those who match the student population and needs of the schools this project will be serving.

IHE Partner

CSUB is a diverse Hispanic Serving Institution (HSI), over 60% of students are underrepresented minorities and nearly 2/3 of students enrolled at CSUB are first-generation college students. CSUB serves a large rural and urban area and is the only four-year public institution of higher education within a 100-mile radius of Bakersfield. CSUB maintains full accreditation by the Senior College Commission of the Western Association of Schools and Colleges (WASC).

The School of Social Sciences & Education is the largest of the four schools at CSUB and within the school, the Department of Teacher Education offers preliminary credentials in multiple subject and single subject. In the 2016-2017 academic year, CSUB's teacher preparation program had 222 program completers (CSUB, 2017). All programs are accredited by the Council for the Accreditation of Educator Preparation (CAEP) and meet all California Commission on Teacher Credentialing (CTC) requirements. On the most recent CTC Annual Report Card on California Teacher Preparation Programs for the Academic Year 2016-2017, CSUB received summary pass rate for program completers of 96% (CTC Report Card, 2017). Passing competencies indicate CSUB is classified as one of the highest-performing teacher preparation programs in the State (State Report Card under section 205(b) of the HEA). The Department of Teacher Education at CSUB has been impacted in very significant and positive ways as a result of TQP funding. The current TQP-funded Kern Rural Teacher Residency program (2014) has prepared more than 80 multiple subject teachers in year-long clinical preparation with highly trained mentor teachers. The credential program coursework has been transformed to include multiple opportunities for candidates to learn, practice, and apply the California Content Standards including the Common Core Standards, the Next Generation

Science Standards, and the English Language Development Standards. See Coursework Graphic for TRRE participants in Misc Attachments.

The CSUB **Department of Computer and Electrical Engineering and Computer Science** (CEE/CS) offers bachelor of science degrees in Computer Science (CS), Computer Engineering (CE), and Electrical Engineering (EE). The CS degree program is designed to meet the ACM 2013 CS Curriculum Guidelines, which provides students with a broad foundation in computing principles and prepares them for a wide range of careers in computing and technology. CEE/CS faculty have been involved in a variety of engineering and computer science educational efforts, including multiple U.S. Department of Education Minority Science and Engineering Improvement Program (MSEIP) grants, multiple U.S. Department of Education Title V Hispanic Serving Institutions grants, a National Science Foundation Improving Undergraduate STEM Education grant (IUSE).

School District Partner

Visalia Unified School District is located in the heart of the agricultural Central Valley and serves 28,879 students; 67% are considered socioeconomically disadvantaged students, 68.7% are Hispanic, and 14% are identified as English language learners (EL). VUSD believes that all students deserve to be surrounded by the very best educators and support personnel and recognizes the benefits of having well-prepared, diverse teachers – strong teachers stay in the classroom longer, continuously build their professional abilities and stabilize schools that have high turnover (Carver-Thomas & Darling-Hammond, 2017). The district is confident that the project will have a dramatic impact on their student population as well as the teaching profession in the Central Valley and is providing both financial and in-kind contributions totalling over \$700,000 annually. This support includes resident stipends, mentor teacher stipends, substitute

pay for Residents, classroom coursework, and professional learning co-developed and co-taught with the Center, CSUB faculty and VUSD content specialists; mentor teachers and content specialists will have release time to substantially participate in all activities to support residents.

Advisors

The *National Center for Teacher Residencies* (NCTR) will partner with CSUB and TCOE in Year 1 to provide technical assistance to the project to develop a residency program/pipeline that supports the needs of Tulare County. In October-November 2019, the NCTR team will work with the Project Management Team to launch program design, facilitate the project team's vision of effective teaching (defining core skills, knowledge and dispositions of the ambitious educator) and partnership development including metrics for success and delineation of partner roles and responsibilities. CSUB has worked closely with the NCTR over the last 5 years to assist with the residency model and best practices for implementation and sustainability. CSUB brings this knowledge learned through the implementation of the residency model to the Project Management Team process. See NCTR Scope of Work in Misc Attachments.

The *EnCorps STEM Teachers Program* and the *California Center on Teaching Careers* (the Center) are the only programs in California and the nation dedicated to recruiting STEM professionals into teaching. They recruit STEM professionals committed to teaching into credential programs in California, and a primary emphasis of the program is preparing STEM professionals for teaching roles in low-income, high need secondary schools in the state.

EnCorps will establish a computer science pathway to teaching for the CSU Bakersfield residency program and recruit at least five computer scientists or STEM professionals each year with significant computer science experience to enter the residency program. EnCorps will work with such recruitment partners as professional associations (e.g., the IEEE Computer Society,

Association for Women in Computing), corporate partners, retiree networks, its community of STEM professionals, and will run ongoing social media campaigns to identify computer scientists who want to give back by teaching.

EnCorps will collaborate closely with the Center to ensure it recruits candidates who meet the criteria established by the CSUB residency program and the school district partner. Once the candidates are identified, EnCorps will work with them in a pre-residency experience that prepares them to enter and succeed in the residency program. Once admitted to the residency program cohort, the EnCorps recruits will pursue a computer science authorization.

The *Prepared to Teach: Sustainable Funding for Quality Teacher Preparation Project* at **Bank Street College** will work with TCOE to support strategic planning, development and replication of sustainably funded residencies for the TRRE project. Bank Street College launched Prepared to Teach (formerly the Sustainable Funding Project) to help districts, states and teacher preparation programs find ways to develop sustainable streams of public funding to support high-quality teacher preparation. Bank Street's networks of learning partnership across the nation promote the diffusion of ideas, where creative thinking generated locally inspires others across the network to innovate. *Prepared to Teach* functions as a hub, supporting long-term strategic planning between sectors as a means of building and maintaining momentum for change. Bank Street will work with the project to develop partnerships and a strategic funding plan to allow for resource allocation to sustain the programs with local funding. With strategic supports, districts and their teacher preparation partners can redesign their work so that dollars spent that once resulted in few lasting benefits can be re-invested to develop strong teachers and schools.

Goal 1: Recruit and prepare qualified single subject residents in STEM+C and English.

Teaching Resident Recruitment and Selection: The Center will lead recruitment and selection that reflect our aim of identifying Residents who possess qualities that research has shown are related to student achievement, such as strong content preparation, superior academic skills, motives to teach that include a strong social commitment to contribute to society through education, demonstrated ability to interact positively with children, and well-developed communication skills. The Center will collaborate with VUSD and CSUB in the recruitment and selection of the residents to ensure that residents meet local hiring needs. In addition, the program aims to broaden and diversify the local teacher workforce by selecting high quality candidates through a competitive screening process to participate in an intensive clinical residency. Residents will be recruited from a wide variety of backgrounds, including recent college graduates and mid-career professionals and military retirees. The Center will deliver a statewide multimedia public service advertisement (PSA) campaign to attract and encourage diverse populations; the campaign will provide additional information about the profession to recruit students in the science, technology, engineering, English and math fields to become teachers, reaching out specifically to ethnically diverse groups, including splash page advertisements on the EDJOIN website. The campaign will utilize 21st century recruitment strategies that include: 1) developing intensive advertisement on the Center's website and in print, radio and television: 2) linking and interfacing with the EDJOIN state teacher recruitment website, California Resource Network

Prior to admittance, the candidate must have:

- Earned a Bachelor's degree
- Passed the CBEST
- Passed at least 2 of the 3 subtests for CSET

Resident Candidates must be prepared to:

- Substitute teach for VUSD for at least 3 days per month
- Maintain a minimum cumulative GPA of 3.0
- Be enrolled in the single subject credential program
- Meet all University and discipline related requirements
- Pass all Single Subject credential courses with a C or better
- Teach in VUSD for 3 years after program completion if offered a position and re-elected

(CCRN), California Association for African American Superintendents and Administrators (CAAASA), California Association for Latino Superintendents and Administrators (CALSA), California County Superintendents Educational Services Association (CCSESA), California Career Center (CCC), Teach California, and other web based career portals; 3) creating a YouTube channel for PSAs; and 4) utilizing social media platforms such as Facebook, Instagram, LinkedIn, and Twitter to reach broader audiences.

To attract top-notch candidates, the project will apply rigorous selection criteria. A study of 30 teacher residency programs funded through the TQP grant noted that the screening process of these programs favored recent college grads or mid-career professionals with the following attributes: strong content knowledge or record of accomplishment in the chosen field, strong oral and written communication skills (Silva et al, 2014). A study of Aspire and Denver residency programs found that those programs considered candidates' dispositions – persistence, resourcefulness, understanding of cultural differences, belief they could impact student's academic success and coachability - as reflected in an interview and an essay, in addition to their GPA and transcript (Perlstein et al., 2014). TCOE has successfully used Target Success Sketch as a screening tool. The Sketch is a simple multiple-choice online questionnaire that develops behavior profile based on a carefully selected set of behavioral job-related attributes. The information derived from that profile can be used to greatly improve hiring efficiency and effectiveness in situations both where there is a large applicant pool that requires screening and where there is a small pool that requires a greater focus on selecting and less on screening. To fill this uniquely demanding position, the TRRE project team will use a strategic and targeted Resident selection process which includes, an informational session, application, and a formal interview (in person or video conferencing) in which applicants must communicate their beliefs

about education and schooling and also address how their qualities and experiences will help them positively impact the academic achievement and social development of students in high-need, rural communities. This process will ensure that we only admit candidates who have the knowledge, skills, and professional dispositions to successfully handle the rigor of graduate student and the clinical intensity of a residency program while appropriately addressing the academic needs and cultural assets of students in rural contexts; the process also ensures that applicants thoroughly understand the obligation to teach for three years in a high-need rural school.

Stipends, Teaching Obligation and Repayment. Residents will apply for and receive stipends of \$28,000 (\$18,000 in TQP funds + \$10,000 from VUSD) over 12 months (Year 1 residency) with installments each semester. Residents will receive pay (\$185/day) to substitute at their school site up to 3 Fridays/month. Additionally, Residents may apply for a Teacher Education Assistance for College and Higher Education (TEACH) grant (\$4,000) and other scholarship programs through CSUB. They will sign an agreement that details all the provisions in the Absolute Priority. The Project Team will track hiring and placement to ensure that participants teach for three years in a high-need school. We will require participants to provide written proof of employment from the chief administrative officer of the district at the start and end of each school year. Additionally, the agreement will state that those failing to complete the credential, master's or teaching requirements will repay, with interest, the stipend, pro rata, unless the TRRE partners approve the participant's request to consider extraordinary circumstances: deferral on grounds of health, incapacitation, inability to secure employment in a school served by the partnership, being called to active duty in the Armed Forces, or other extraordinary circumstance. Any returned funds will be applied to TRRE activities.

Teaching Mentor Selection, Training, and Support: Each resident will be paired with a Teaching Mentor (mentor) from a partner school who has undergone a rigorous selection process

The mentorship experience re-inspired me. I became a more reflective educator by working closely with someone daily and my students benefited by having two teachers in the classroom. Mentoring also made me think back to everything that I had stopped doing and reminded me how to be a better teacher.

~ NCTR mentor

which includes an application, observation of their classroom practice (using the Danielson Framework for Teaching), an interview, and principal's recommendation. This process is designed to make sure that prospective mentor's

classroom practice aligns with program goals and coursework and that mentors have 3 years or more of teaching experiences with full licensure in the subject area(s) sought by the resident. Principal recommendation and an observation protocol (including analysis of lesson plan) will be aligned with selection criteria including a prospective mentor's ability to: collaborate with colleagues to improve instruction; use multiple strategies to assess students' academic needs and strengths; create learning experiences that make the discipline(s) accessible and meaningful for learners; engage and support students with different learning styles; use a variety of strategies and tools to encourage learners to develop deep understanding of content areas and their connections to other disciplines; analyze gains in student learning based on multiple valid and reliable measures; and use evidence to continually evaluate his or her practice particularly the effects of choices and actions on students, families, and other learning community professionals. Mentors will receive a \$2,000 mentor teacher stipend from the district. Beyond the monetary compensation, there are non-financial rewards to mentoring in teacher residency programs. Notably, mentors themselves benefit by improving their own practice; 94% of NCTR mentor participating in 2014-15 reported that mentoring residents made them a more effective teacher (National Center for Teacher Residencies, 2016).

Mentors will participate in meetings to learn about mentor roles and responsibilities as a component of school site visits by members of the TRRE project team and the CSUB program team. In June 2020, prior to the start of the residency, mentors will have a three-day orientation session that will cover the co-teaching model: scope and sequence of the residents' coursework to ensure consistency and alignment with teaching activities; implement literacy strategies across content areas; integration of STEM+C across disciplines; strategies for problem solving, conflict resolution, and communication; and how to work with the TRRE Residency Professional Development Provider (RPDP) from CSUB to ensure a coordinated growth experience for the residents.

During the residency, the mentors will work with the RPDP in monthly support and professional learning meetings organized by cohort. These meetings, for which mentors will receive compensation, have a dual purpose: 1) shared reflection on the day-to-day work with their resident, including solution-oriented discussion around challenges and opportunities of mentoring; and 2) ongoing professional development in mentoring and collaborative supervision practices. Mentors will also attend two one-day retreats over the course of the year (fall and spring) focused on specific dimensions of the mentor's role (i.e., feedback strategies when observing) and their own professional learning (i.e., trainings in inquiry-based teaching offered by the CSUB STEM+C team).

Through a partnership with Stanford Graduate School of Education, the project will offer mentors the opportunity to pursue National Board Certification. Research shows that candidates for National Board Certification (NBC) demonstrate significant improvement in their teaching practice and that students taught by NBC teachers make higher gains on achievement tests than those taught by teachers who are not board certified. This certification provides routes for NBC

teachers to advance as master teachers, school leaders and mentors. The project will also provide career advancement opportunities for experienced teachers within VUSD to serve as mentors, supervisors, and instructors in the programs.

Goal 2: TRRE graduates will be hired and retained as teachers in high-need partner LEA.

The Induction Program. Research suggests (and our needs assessment supports) that teachers, especially those new to the profession, move out of rural high poverty schools at a disproportionately high rate (Darling-Hammond, 2013; Learning Policy Institute, 2017). Studies also show that beginning teachers who are provided with multiple supports, mentoring programs, and collective group and networking activities, and who, in particular, collaborate with other teachers on instructional matters, are less likely to move to other schools and less likely to leave the teaching occupation altogether after their first year (Ingersoll & Strong, 2011). Informed by these perspectives and grounded in the premise that collaboration in the form of inquiry-driven research for improved practices is how teachers most effectively sustain their professional growth (Learning Policy Institute, 2017), the TRRE induction program will extend the cohort model into a framework of sustainable professional development activities focused on pedagogical support for both new and experienced teachers. In building the capacity of local schools to support all teachers and enhance teachers' social capital in their rural communities, the induction program will promote knowledge, sensibilities and skills that will allow new teachers "to feel more at home and more powerful in a rural setting" (White & Reid, 2008).

In California, there is already a rich induction program for all new teachers. In order to move their credential from preliminary status to clear status, every new teacher must participate in a two-year induction program run by either the district, TCOE, or other approved entity. When the project Resident earns their credential and is hired by the LEA, and as they progress through the Induction Phase program, they will retain their TRRE faculty mentor as a support to their

transition into the teaching profession by providing content expertise and expertise in teaching. The faculty mentor will be in addition to the induction program provided by the district, in turn creating an induction support team comprised of Induction Phase support provider (VUSD), faculty mentor, and a CSUB faculty content expert as well as cohort support through the graduate PLC. This team of support will prioritize the use of empirically-based practice and scientifically valid research on teaching and learning to ensure applicants meet all state licensure requirements, including special education teachers.

Goal 3: Students of TRRE graduates will outperform students of non-participating novice math and science teachers in the rural Central Valley

Rigorous content and pedagogical preparation, intensive field experiences in rural high need partner schools, high levels of mentoring and networking support and ongoing professional development among all participants will increase student achievement in mathematics, English, and science. As detailed in our evaluation plan, through continued collaboration with the Center and VUSD to obtain student- and teacher-level data, WestED will have access to all standardized achievement results of all students taught by TRRE graduates as well as teacher-linked results of all students that complete the same assessments. Student data will be disaggregated by subgroups. District and school-level data for target schools, demographically matched schools and schools statewide are available online from the California Department of Education, Testing and Accountability. Given the small sample size of the number of residents who will complete the residency program, the external evaluation team will wait until the final award year to pool student achievement data.

iii. *Project is designed to build capacity and yield results beyond funding*

Goal 4: The Center, CSUB, and rural high need partner LEA and schools will develop and sustain project partnerships and institutionalize its residency program model to drive improved student outcomes.

The project is designed to build long-term collaborative capacity throughout the partnership schools, school districts and surrounding communities and is committed to understanding and replicating successful elements of its program to inform future iterations of the residency program. By developing mutually beneficial partnership with high need rural districts and schools, engaging both residents and

Throughout my journey working in education, I have learned how important good teachers are to fighting inequities in the system. I want to find a way to help students and their families feel included and be successful. Working with student gives me life and motivates me to work hard to be my best self for the students I work with
~ **Resident, Seattle Teacher Residency**

participating teachers in high-quality professional development, research, networking, mentoring relationships and community partnerships, TRRE will provide a means of building local and institutional capacity for ongoing school and program improvement. Additionally, the project will engage in sustainability planning from the beginning of the program. The particular expertise that *Prepared to Teach* (Bank Street School) will bring to TRRE is around strategic planning and design for sustainably funded residency partnerships. The Center's goal is to be able to continue not only to sustain the primary residency effort that the CSU Bakersfield and VUSD is launching but also to find ways to grow residency partnerships through sustainably funded pathways for the Central Valley. *Prepared to Teach* will provide strategic supports to help the Center achieve this goal and work to align the project with other efforts in California.

The innovative STEM+C curriculum, pedagogy, assessment, and professional development created and revised over the five-year federal assistance period will inform lasting changes to each Residency. These changes will also be scaled and translated into the CSUB multiple subject

and single subject preparation courses and clinical experiences, more broadly. Given that we will be creating a K-12 arch with the integration of the new 2018 California Computer Science Education Standards, the curriculum, pedagogy, assessment, and professional development created through the project will be shared as a guidepost throughout Tulare County and California.

After 15 years of teaching, I have experienced everything-elation, frustration, fury, terror, amusement, astonishment-but never boredom. The job is never the same from day to day, from hour to hour.

~Dr. David, Cambridge, MA

iv. Exceptional approach for meeting statutory purposes and requirements

Teaching is a profession of practice, requiring ample opportunity to put theory into practice in collaboration with experienced colleagues in order for teachers to become strong professionals. TRRE residents co-teach in an accomplished teacher's classroom for a year while studying in a program that aligns with district needs and embraces the best research on content, pedagogy, and learning science. Co-teaching is the cornerstone of the TRRE program. Research shows that co-teaching is a way to: 1) build stronger connections between IHE and school partners; 2) provide both support and professional development for mentor teachers; 3) build strong relationships; and 4) offer residents more opportunities to teach. Programs such as the TRRE project that have been able to offer candidates compensation during their year of residency training have attracted strong, diverse candidates into the profession and retained teachers well beyond district averages, including in schools serving low-income and diverse families (Eisner, Fulbeck, Zhu, Citkowicz, & Manzeske, 2017). Ideally, all new teachers would prepare for their profession in clinically-rich programs such as TRRE; the project's focus on strategic planning (beginning in Year 1) to build capacity provides a replicable model of sustainably funded residencies for the state and adds to best practices in residency models.

TRRE is a true collaborative effort in that the Center, CSUB, and the district are co-equal

partners in design of the program, selection of residents and mentors, designing and delivering coursework that is tightly integrated with clinical experiences, and providing support for residents and mentors. Frequent feedback and performance-based assessments of candidates' classroom practice enhances professional competence and provides the individualized support needed for success.

Through its digital presence (the Vortal), the Center collects and disseminates a wealth of information to hiring districts/agencies and institutes of higher education, current and prospective teachers, county and regional school leaders, policymakers, funders, thought leaders and the general public. Specifically, the Vortal houses: In-person and virtual recruitment services; Matching systems that connect candidates and educational agencies; Marketing and advertising; Webinars and tutorials; A highly customizable reporting system for electronic applications with support and employment tracking; Credential tracking and ongoing support including mentoring, coaching and MA coursework and completion assistance. The Center's Vortal creates an online experience tailored to education agencies and teaching candidates by enabling both to create personalized profiles within the site. The Center's Credential Tracker and Support App monitors credential and program progress; facilitates virtual support to and from mentors, school administrators, master teachers and program administrators; and tracks Master's coursework and program completion. The Center's resources will contribute to best practices in the use of digital platforms and social media to recruit prospective candidates and career changers to Residency programs throughout the state.

Combined efforts of the Center recruitment strategies and EnCorps STEM Teachers Program and CSUB for outreach will result in a diverse teacher candidate pool for the residency program. Rigorous selection criteria will ensure that candidates have the potential to be

successful in this challenging educational program.

(b) ADEQUACY OF RESOURCES (20)

i. Adequacy of support including facilities, equipment, supplies, and other resources

In addition to grant funds, the project partners have committed to the integration of funds from other sources for a total of \$6,721,766 dedicated to project activities. TCOE, project lead agency, has committed \$2,092,802 over the 5-year project period. This in-kind commitment (delineated year by year in the match budget) includes implementation and delivery of recruitment and outreach strategies (Years 1-4) including virtual and in-

What I really enjoy about being a mentor teacher is the fact that it doesn't keep me stale in my teaching. It really keeps me young. It keeps me engaged.

*~Teacher Mentor, San Francisco
Teacher Residency Program*

person recruitment and outreach and effort to recruit program participants nationwide including college graduates, career changers, and military retirees. TCOE will provide support for determining enrollment qualifications, selection of quality participants, counsel prospective program participants throughout the application process, and monitor program enrollment and completion (Years 1-4). In Years 2-5, TCOE will provide pathways through the Center for program participants and employing agencies for placement as well as finding and matching mentors for program participants. In addition, the Center will provide resources to both candidates, LEAs and IHEs for monitoring support and professional development for candidates and mentors and continued support through induction and tracking employment performance. See TCOE Letter of Support/Match Documentation in Appendix I.

VUSD is providing in-kind contribution of facilities for the residency and the summer STEM+C Lab including use of the VUSD Computer Science Academy classrooms and resources; equipment such as Chromebooks for residents, STEM+C equipment such as robots, computers, coding programs; transportation for summer LAB; substitute pay and teachers' time for planning

and coursework. The total for these in-kind contributions is \$304,842 each year of the project. VUSD's has committed annual cash contribution totaling \$431,250. Cash contributions include: resident stipend (\$10,000/resident); mentor teacher stipend (\$2,000/resident); cost of CUE conference (Computer-Using Educators) for mentor and resident (\$75,000/cohort; 1 Cohort in Year 2; 2 Cohorts in Year 3); professional development including technology in the classroom (7 days @\$150/day); and additional substitute pay at \$60/day (approximately 20 days/yr). See VUSD Letter of Support/Match Documentation in Appendix I.

CSUB is providing \$650,603 annually in in-kind support for the project that includes curricular materials, faculty support, and TRRE Residency Professional Development Provider. NCTR is contributing \$100,000 (in-kind; discounted fee) in research-based training for residents and mentors. For in-kind supports, Prepared to Teach (Bank Street School) is committing personnel resources equal to 50% of the requested budget each year, at Prepared to Teach's regular consultancy rate of \$2500 per day for a total of \$82,500 over the project period. See Letters of Support/Match Documentation in in Appendix I.

There is a great deal of support for the project from all the stakeholders demonstrated in their cash and in-kind contributions detailed above. One of the greatest strengths of the project is in the partnerships that exist; relationships that span years and involve collaboration on multiple federal and state projects. TCOE, project team members and consultants/advisors bring decades of experience in education, teacher preparation, including residency models, research on best practices, and curriculum and instruction. The experience and expertise across content and programming and teamwork to improve the quality of teachers and teaching in our high need region affords a wealth of resources that will significantly and positively impact the goals and objectives of the project. The project includes formative and summative assessment co-

developed and co-implemented in partnership with WestEd and our TRRE partners to ensure progress is measured for our short-term, mid-term, and long-term outcomes and that the quantifiable outcomes are of value to our stakeholders, such as equitable access to effective teaching for the students of color and English Language Learners and educator retention within our LEA districts.

The benefit of improving the quality of teacher preparation that leads to increased teacher quality and retention in high needs schools cannot be adequately quantified. The benefit to teaching and learning will increase exponentially every year that our TRRE teacher cohorts are teaching. The students will benefit by increased school success in classrooms with highly qualified teachers for as long as our teachers teach. The high needs districts will benefit by having highly skilled teachers with the skills and competencies to work and stay in high need rural classrooms.

ii. Relevance and demonstrated commitment of each partner to implementation and success

Tulare County Office of Education has a long and successful history of collaboration across districts, county offices, community colleges, universities, and business and community organizations to develop and implement programs and services that share a vision of high-quality teacher recruitment, selection and preparation practices throughout the state. TCOE provides support and service to over 104,000 students in 45 school districts in Tulare County and has a demonstrated record of bringing promising new practices to scale in a variety of settings. Following the implementation of the first California Teacher Recruitment Centers, TCOE partnered as the lead LEA of a powerful consortium of statewide agencies, school districts, community colleges, county offices of education (COE), and Institutions of Higher Education (IHE) in the Central Region of the state to prepare teachers to increase math, science, and

English achievement in schools, particularly for underrepresented populations. TCOE led and managed two U.S. Department of Education *Transition to Teaching (TTT)* grants (2001, 2004) and two *Teacher Quality Enhancement (TQE)* grants (2002, 2005). The program offered the opportunity to develop alternative routes to certification through the TCOE New Teacher Development Department, traditional pathways with CSU Fresno, Fresno Pacific, and other regional universities. TCOE was one of 5 partners for the 2009 Teacher Quality Partnership with California State University, Bakersfield, CSU Monterey Bay, California Polytechnic University, San Luis Obispo, and Kern County Superintendent of Schools. Retention of our program interns participating in the program is 97% over 3 years and 91% over 5 years.

CSUB has established teacher residency programs in 3 high needs districts (TQP) and brings their knowledge and skills in collaborative planning, approved professional preparation programs, implementation of traditional residency models, NCTR training, co-teaching strategies and professional development. CSUB will be the credentialing agency and will provide the curriculum for the project (in kind) as well as the STEM+C training in cooperation with the district STEM specialists.

Visalia Unified School District and its participating middle and high schools is dedicated to the project as evidenced by its contributions of cash and in-kind resources. The district's 5-year commitment to providing highly skilled content experts as part of the professional development team that will mentor, coach, co-plan, co-teach and work with the Center and CSUB faculty mentors and experts is further evidence of the district's level of commitment and support.

In addition to our key partners, our program advisors, the NCTR, Prepared to Teach, and EnCorps STEM Teachers Program bring expertise to our recruitment, planning, programming and sustainability. NCTR will work with the project team in Year 1 to facilitate responsive,

research-based programming designed to improve impact and outcomes for the TRRE by developing a shared vision, metrics for success and delineate partner roles and responsibilities.

(c) QUALITY OF MANAGEMENT PLAN (20)

i. *Adequacy of plan to achieve the objectives on time and within budget*

The Center's TRRE project expects far reaching and significant improvements to teacher education as implemented for our project residents in partnership with CSUB and our high need district, Visalia Unified. Recognizing the significance of the project's scope and complexity, the Center developed a project management structure and operations intended to achieve all the goals, objectives and outcomes of the project and to meet all statutory reforms and improvements

The program sets its residents up for success. Entering into the program, I wasn't expected to know it all, just have a willingness to learn and receive feedback.

*~Danielle, Nashville Teacher
Residency*

specified in the TQP grant application with clearly defined responsibilities, timelines, and milestones for accomplishing activities. TCOE, the Center, will be the lead applicant and fiscal agent. CSUB, VUSD, and rural high need schools will formalize their partnerships with

MOUs documenting roles, responsibilities and resources allocated to the project. The combined project team and an advisory council structure will ensure that all partners and stakeholders can provide input and guidance into the implementation of the residency program as well as ensure that TRRE will accomplish project tasks within budget and according to specified timelines.

The **Project Team** will facilitate programmatic operations and provide a continuous feedback loop into project guidance and operations. The TRRE Principal Investigator (PI), Donna Glassman-Sommer, will have fiscal and administrative responsibility for the grant and will lead the project team. Along with the PI, the project team will consist of the Residency Professional Development Provider (RPDP), Dr. Kristina LaGue (CSUB); Marvin Lopez, TCOE Program and Recruitment Coordinator; Director of Science and Mathematics Education (VUSD),

and the VUSD Liaison. The project team will meet weekly to coordinate the various components of TRRE and will ensure that responsibilities and activities are clearly defined and implemented.

An **Advisory Council** will coordinate with members of the project team to monitor progress, provide feedback, plan long-range implementation and institutionalize activities of the residency including fund development strategies for sustainability. The Advisory Council will convene quarterly and will consist of representatives from the various partners involved with the project including, the PI, IHE Coordinator, Recruitment Coordinator, representative of EnCorps STEM Teacher Program, a representative of Stanford University Education Program, Karen DeMoss of Bank Street Schools, school principals, and residency mentors. The proposed project 5-year plan includes a Planning and Design Year (Year 1), Launch Year (Year 2), two Revision and Renewal Years (Years 3-4) and a Revision, Renewal, and Transition Year (Year 5). The program management plan (see pages 39-40), aligned with program goals and the logic model, illustrates our plan to implement and continuously improve TRRE.

Donna Glassman-Sommer, TCOE Executive Director for the California Center on Teaching Careers, will serve as the Principal Investigator for the project and oversee TRRE processes, programs, and operations. Mrs. Glassman-Sommer holds a M.A. in Education Administration. She has extensive experience in the administration of statewide initiatives to improve teacher and administrator quality, including serving as Assistant Director of Central California Teacher Recruitment and as Lead Consultant on a statewide initiative to train over 180 mentors across the state who work with intern teacher candidates. Ms. Glassman-Sommer will devote .3 FTE of her time and will be responsible for ensuring goals and outcomes are met on time and within budget. She will facilitate the Project Team meetings and serve as the Chair of the Advisory Council.

Marvin Lopez, TCOE Program & Recruitment Coordinator for the California Center on

Teaching Careers, will serve as the TRRE Recruitment Coordinator (.3 FTE). Mr. Lopez holds a M.S. in Human Resources Management and a M.S. in Business Administration. He has worked as the TCOE Recruitment and Accounts Manager for the New Teacher Development and as lead recruiter under U.S. Department of Education Teacher Quality and Transition to Teaching Grants. With an extensive background in research and best practices, Mr. Lopez will be responsible for participant recruitment, screening and selection in cooperation with CSUB and EnCorps; program marketing and advertising; collaboration in development and improvement of web-based mediums; work closely in the development of media video journaling and training videos; delivery of participant orientations, and liaison responsibilities between the project lead and other partners.

Kristina LaGue, Ph.D., professor and Department Chair, Department of Teacher Education, California State University, Bakersfield, will serve as the Residency Professional Development Provider. She holds a Doctor of Philosophy, Education with a specialization in Language, Literacy and Composition Studies and a Master of Arts in Education, with specialization in Literacy. Dr. LaGue has a Reading and Language Arts Specialist Credential, and a Professional Teaching Credential. She has served as Principal Investigator for the Kern Urban Teacher Residency (Bechtel Foundation), the Kern Rural Teacher Residency. Dr. LaGue will be responsible for curriculum development in partnership with the district; ongoing training of district administrators and mentor teachers on residency standards and components; ongoing design and facilitation of co-teaching and pairs trainings; and ongoing data collection, analysis, and dissemination for continuous improvement of the residency partnership.

The project will contract for the services of an external evaluator from WestEd, Jaclyn Tejwan. Ms. Tejwan has extensive experience in research and evaluation with large federal

grants, including TQP. Ms. Tejwani's management and evaluative work has encompassed a variety of evaluation designs as well as content areas, including teacher preparation and teacher residencies, teacher and principal evaluation, school safety, dropout prevention, and charter and magnet school monitoring. She serves as project director for the evaluations of California State University Bakersfield's (CSUB) two Teacher Quality Partnership Grants (2014 and 2018 awards), evaluating their Kern Rural Teacher Residency Program and Citizen Scientist Residency Program, and for Cal Poly San Luis Obispo's Teacher Quality Partnership Grant (2018 award).. Tejwani also serves as the evaluation lead for CSUB and Fresno State on Bechtel Foundation's New Generation of Educators Initiative grant evaluation. She holds and M.A., Evaluation/Applied Social Psychology and an in M.A., Psychology.

The Project Team will include a VUSD district liaison selected during Design Year 1. The District Liaison (DL) will hold a teaching credential and M.A. in Education. Experience mentoring new teachers and monitoring local, state and federal programs is required. The DL will be responsible for participating in the delivery of participant orientations, navigation of school policies, provide support to participants, monitor participant progress, assist with employment placement, and act as the liaison between the project lead and other partners.

The project will also include the services of a Teaching Credential and Program Advisement Specialist (CSUB). This individual will hold an Associate's Degree and possess knowledge of Education Code, laws and regulations regarding teacher credentialing, as well as knowledge of credential types and requirements. Duties include support for statewide teacher candidates, provide technical assistance for teaching credentials, evaluation of transcripts, assist in registration of coursework, and collaborate project lead and other partners.

Activity	Timeline	Person(s) Responsible	Project Year				
			1	2	3	4	5
<i>Human Resources (HR); Principal Investigator (PI); Project Director (PD); Budget Office (BO); National Center for Teacher Residencies (NCTR); Program & Recruitment Coordinator (PRC); Bank Street College (BSC)</i>							
Post and hire Project Manager and key staff	Oct-'19	HR	X				
Schedule and convene project team	Oct-'19 & Weekly	PI	X				
Development of STEM+C elective course	Sep-'19	PI, PRC, The Center, CSUB, VUSD	X				
Finalize project budget with key stakeholders	Nov-'19	PI, BO	X				
Contract & coordinate with key project partners	Nov-'19	PI, BO, The Center	X				
Provide technical assistance/develop residency pipeline	Nov-'19	The Center, NCTR, PD	X				
Design Summer and Year Long STEM+C Lab School	Nov-'19	PI, PRC, The Center, CSUB, VUSD	X	X			
Invite key stakeholders to join Advisory Council	Dec-'19	PI, PRC, The Center, CSUB, VUSD	X				
Recruit, select, and contract teacher mentors (annually)	Dec-'19	PI, PRC, CSUB, VUSD, The Center	X	X	X	X	X
Create & launch targeted national multi-media campaign	Dec-'19, ongoing	PI, PRC, The Center	X	X	X	X	X
Recruit, select, and contract residents (annually)	Jan-'20	PI, PRC, The Center, CSUB, VUSD, EnCorps	X	X	X	X	X
Schedule/convene Advisory Council meeting (annually)	Feb-'20; Quarterly	PI, PRC, CSUB, VUSD	X	X	X	X	X
Orientation/training for mentors on co-teaching model	Mar-'20, annually	PI, PRC, The Center, CSUB, VUSD	X	X	X	X	X
Match mentors with residents (annually)	May-'20	PI, PRC, The Center, CSUB, VUSD	X	X	X	X	X
Orientation for mentors & residents on Lab School	Jun-'20, annually	PI, PRC, The Center, VUSD	X	X	X	X	X
Develop and implement Professional Learning Community (PLC) for residents (years 1-3)	Jul-'20	PI, The Center, CUSB	X	X			
Launch one week STEM+C Lab School	Jul-'20	PI, PRC, The Center, CSUB, VUSD	X				
Conduct surveys of residency candidates/novice teachers	Aug-'20, Ongoing	BSC	X	X	X	X	X
Organize & schedule strategic sustainability planning	Aug-'20, Ongoing	BSC	X	X	X	X	X
Pilot year 2 of STEM+C elective at target school	Sep-'20	CUSB, The Center, VUSD	X	X	X	X	X

Activity	Timeline	Person(s) Responsible	Project Year				
			1	2	3	4	5
<i>Human Resources (HR); Principal Investigator (PI); Project Director (PD); Budget Office (BO); National Center for Teacher Residencies (NCTR); Program & Recruitment Coordinator (PRC); Bank Street College (BSC)</i>							
Schedule meetings for training, calibration and review of resident data	Sept-'20; Weekly	PI, PRC, The Center, CSUB, VUSD	X	X	X	X	X
Coordinate retreat for mentors 2x per year	Fall-'20, Spring-'21	PI, PRC CSUB, VUSD		X	X	X	X
Recruit, select, and contract induction mentors	Fall-'20	PI, PRC, The Center, CSUB, VUSD		X			
National Board Certification opportunity for mentors	Fall-'20, annually	Stanford Graduate School of Education		X	X	X	X
Develop, refine and implement coursework	Jan-'21, ongoing	CUSB, The Center, VUSD		X			
Attain initial certification for preliminary credential for residents (Cohort 1-4)	Jun-'21	CUSB		X	X	X	X
Employment placement of residents in high-needs schools	Jun-'21	PI, PRC, The Center, VUSD		X	X	X	X
Place residents in high-needs schools for clinical and co-teaching experience	Apr-'21	PI, PRC, The Center, VUSD		X	X	X	X
Implement induction support	Sep-'21	Induction Mentors, PI CSUB, VUSD HR		X	X	X	X
Complete masters degree/certification requirements for induction	Jan-'22	Residents, CUSB			X	X	X
Scaled STEM+C elective at other sites	Sept-'22, ongoing	CUSB, The Center, VUSD			X	X	X
Disseminate best practices regionally, statewide and nationally.	May-'23	PI, PRC, The Center, CUSB, VUSD, BSC				X	X
Institutionalize residency model	Sep-'23	Project Team, The Center					X

(d) QUALITY OF PROJECT EVALUATION (20)

WestEd, the proposed external evaluator, will use a mixed-methods approach (Teddle & Tashakkori, 2008) to evaluate the Teacher Residency for Rural Education (TRRE) by providing both objective- and performance-driven data. WestEd will collect and analyze quantitative data on GPRA, HEA, and the TRRE Project performance measures; on the proposed project goals, objectives and outcomes; and for a Quasi-Experimental Design (QED) assessing whether the TRRE Project results in improved teacher and student outcomes relative to traditional teacher preparation programs. WestEd will compare findings on performance measures for participants of the TRRE Project with national and state standards of excellence in teacher preparation, as well as to the outcomes of other credentialing programs. WestEd will collect and analyze qualitative data to explain quantitative findings and maintain all data in a longitudinal database to assess progress and allow for within- and cross-cohort comparisons.

i. Methods of evaluation will provide valid and reliable data on relevant outcomes

WestEd will collect, analyze, and report on valid and reliable performance data on relevant outcomes. In addition to reporting on relevant GPRA, HEA, and project-based measures, the evaluation will include a study of program implementation and built-in support for continuous improvement to help ensure that implementation efforts are informed by data. The table below presents an aligned plan that includes the project goals and how the evaluation will collect valid and reliable performance data to report on relevant outcomes. The following section includes a detailed description of the evaluation sources and how they will inform the performance measures.

Teacher Residency for Rural Education (TRRE) Evaluation Plan	
Project Goals & Evaluation Methods and Sources	
Goal 1: <i>TRRE will recruit and prepare 80 qualified math and science teachers with skills matched to the needs of students in the high-need partner LEA.</i>	
<ul style="list-style-type: none"> • Program data on total number applied, number accepted, number enrolled, subject area of licensure, including demographic data to identify teachers from underrepresented groups and those with STEM and education-related backgrounds • Program data on one-year persistence rates, and completion data • Performance on CalTPA, CSET (number of attempts) • Surveys and interviews with TRRE residents on motivations for participating in the TRRE and teaching as a career, attitudes and beliefs about teaching STEM subjects, and on quality of preparation activities and perceived self-efficacy for teaching STEM-C curricula and pedagogy, integrating technology effectively and using data to improve instruction • Surveys and interviews with mentors on their training and support to TRRE residents • Interviews with district partners, faculty, and project leadership (i.e., from the Center, Visalia and CSUB) on recruitment efforts, and development of TRRE and program components • Reviews of program documents, including recruitment materials and resident portfolios 	
Goal 2: <i>TRRE graduates will be hired and retained as teachers in high-need partner LEA.</i>	
<ul style="list-style-type: none"> • Program and HR data on hiring, subject areas taught, and placement in high need areas and schools • Retention data from program and district HR depts • Surveys and interviews with TRRE graduates on quality of retention efforts and PLCs • Interviews with principals, faculty, staff, and project leadership to understand retention efforts 	
Goal 3: <i>Students of TRRE graduates will outperform students of non-participating novice math and science teachers in the rural Central Valley.</i>	
<ul style="list-style-type: none"> • Student state assessment and pre-post benchmarks assessments data • Analysis of student work • Data from surveys of Program Completers, Year One Teachers, and Employers of Year One Teachers (EdQ) • Surveys and interviews with TRRE graduates, mentors, principals, and project leadership to gather the narrative impact of TRRE on student academic outcomes 	
Goal 4: <i>The California Center on Teaching Careers, CSUB, and rural high need partner LEA and schools will develop and sustain project partnerships and institutionalize its residency program model to drive improved student outcomes.</i>	
<ul style="list-style-type: none"> • Surveys and interviews with the Center, Visalia and CSUB leaders to understand sustainability and expansion plans • Interviews with other potential partners • Reviews of program materials and documents to assess sustainability plans and institutionalization of the work 	

Project Implementation. In collaboration with the TRRE Project, WestEd will collect formative data on project implementation, including the collaboration among partners, the development of new curriculum, resident recruitment and preparation, and induction support. A clear understanding of the TRRE will enable WestEd to suggest ways in which outcomes may be related to specific the project components, highlighting which components may be most critical, for whom, and under which conditions. Throughout the project period, WestEd will attend to the following: (1) grounding the evaluation in the TRRE’s well-articulated logic model; (2) reviewing project documents and meeting often with leadership to ensure an up-to-date and complete picture of the relevant features of the TRRE context; and (3) assessing the extent to which the project components are being implemented through surveys and interviews with relevant stakeholders, including mentors, residents, graduates, district partners, principals, faculty, staff, and project leadership, using protocols with open and closed-ended questions about how participants experience the program.

Continuous Improvement. The formative evaluation will include the use of built-in methods supporting continuous improvement to ensure that implementation efforts are informed by data that help project staff make midcourse corrections as needed. We will draw on an improvement science approach (Bryk, Gomez, Grunow, & LeMahieu, 2015), which WestEd has been supporting within many teacher preparation programs. The theory underpinning this approach is that substantial, sustained improvement is most likely to result from sustained inquiry into the way a teacher preparation program produces its current outcomes and “testing” of changes that could lead to better outcomes. To establish and maintain effective feedback loops, WestEd will work with project staff to create a formal reporting cycle as well as ongoing informal collaboration and learning opportunities. All reporting of data and findings from the evaluation

will be designed to help project staff use the information to reflect on current performance and assess high leverage opportunities on which to target ongoing improvement efforts.

ii. Methods of evaluation are thorough, feasible, and appropriate to goal/objectives/outcomes

The comprehensive evaluation approach is aligned to the four overarching goals of the TRRE Project and will utilize qualitative and quantitative data from a variety of sources to strengthen the validity of the results. For the duration of the study, WestEd will provide annual summaries of the quantitative teacher and student outcomes measures, including the GPRA and HEA performance measures. WestEd will report progress on measures to ED and program stakeholders through Annual Performance Reports (APRs) and annual evaluation reports. The performance data, including GPRA and HEA measures, are organized and described below according to the four goals of TRRE Project.

TRRE Project Goal 1: *TRRE will recruit and prepare 80 qualified math and science teachers with skills matched to the needs of students in the high-need partner LEA.*

Evaluation questions related to implementation and impact include: How and to what extent is the TRRE Project: 1) encouraging diverse candidates to apply to the TRRE and selecting high-quality candidates for participation? 2) effectively preparing residents to integrate STEM-C curricula and pedagogy, and to use technology to collect and analyze data to improve teaching and learning outcomes? and 3) creating a pathway to graduating and certifying single subject candidates that meets the needs of their high-need partner LEA?

Recruitment and Selection. To assess the effectiveness of the TRRE Project recruitment campaign and track progress on recruitment and selection, we will assess project measures on recruitment targets; selection rates; candidates from underrepresented groups; candidates with STEM and education-related backgrounds (based on prior employment, career path, major, and granting institutions); GPA; and CBEST and CSET passing rates. These data will be collected

from program data on the total number who applied, number accepted, number enrolled, subject area of licensure, and demographic data. We will also use surveys and interviews with residents to assess their motivations for participating in the TRRE Project and teaching as a career, and attitudes and beliefs about teaching STEM subjects; interviews with principals, faculty, staff, and project leadership (i.e., from the Center, Visalia and CSUB) to understand development and implementation of recruitment efforts; and reviews of program documents, including recruitment materials.

Teacher Preparation. Measures assessed related to teacher preparation include GPRA *Performance Measure 3: One-Year Persistence*. *The percentage of program participants who were enrolled in the postsecondary program in the previous grant reporting period, did not graduate, and persisted in the postsecondary program in the current grant reporting period (85% target), HEA Percentage of teachers trained to integrate technology effectively into curricula and instruction, including technology consistent with the principles of universal design for learning, and HEA Percentage of teachers trained to use technology effectively to collect, manage, and analyze data to improve teaching and learning for the purpose of improving student academic achievement.* Project measures regarding teacher preparation will also assess candidates' specific subject matter preparation area and quality of preparation activities (i.e., the extent to which the TRRE and other preparation components contribute to resident-perceived self-efficacy for teaching STEM-C curricula and pedagogy, integrating technology effectively, and using data to improve instruction). Data for the measures will be collected through the TRRE Project archival program data, including data on CalTPA passage rates, a review of program documents, surveys and interviews with TRRE residents on the quality of the preparation activities and perceived self-efficacy, interviews with mentors, district partners, faculty, and

project leadership on the development of the TRRE and specific program components, and reviews of program documents and resident portfolios.

Graduation and Certification. GPRA and HEA each require measures related to graduation and certification. WestEd will assess GPRA *Performance Measure 1: Certification/Licensure. The percentage of program graduates who have attained initial State certification/licensure by passing all necessary licensure/certification assessments within one year of program completion* (85% target), and GPRA *Performance Measure 2: STEM Graduation. The percentage of math/science program graduates that attain initial certification/licensure by passing all necessary licensure/certification assessments within one year of program completion* (85% target) by obtaining data from the TRRE Project on degrees and specific teaching certifications (including authorized subject matter and grade spans) obtained by residents and dates awarded, to assess whether they were obtained within the measure-specified timeframe. To assess passing of initial and necessary certification/licensure assessments, we will obtain residents' scores on the state licensure exams, the CSETs, as well as data from the CalTPA assessment tasks and the RICA, from the TRRE Project documents (as the programs are responsible are for verifying passing of assessments). HEA also requires a measure on *achievement for all prospective and new teachers, as measured by the eligible partnership, and improvement in the pass rates and scaled scores for initial State certification or licensure of teachers.* To assess achievement for prospective and new teachers as well as the improvement in the pass rates, we will collect results from the CalTPA directly from the program.

TRRE Project Goal 2: *TRRE graduates will be hired and retained as teachers in high-need partner LEA.*

Evaluation questions related to implementation and impact include: How and to what extent is

the TRRE Project: 1) placing teachers in high-need subject areas? and 2) supporting and retaining teachers in high-need districts?

Placement. As noted above, the HEA requires a measure on *achievement for all prospective and new teachers, as measured by the eligible partnership*. For new teachers WestEd will compile data by district human resources (HR) departments on number of completers hired by the LEAs, a process which will be formalized with data sharing MOUs between WestEd and the TRRE Project and their partner district, Visalia Unified School District. The HEA also requires measures regarding hiring, subject areas taught, and placement in high need areas and schools. Specifically we will assess the percentage of highly qualified teachers: (1) *hired by the high-need LEA participating in the eligible partnership*; (2) *who are members of underrepresented groups* (e.g., African-American, Hispanic/Latino, or Native Hawaiian or other Pacific Islander); (3) *who teach high-need academic subject areas* including reading, mathematics, science, and foreign language, including less commonly taught languages and critical foreign languages; (4) *who teach in high-need areas*, including special education, language instruction educational programs for limited English proficient students, and early childhood education; and (5) *who teach in high-need schools* (100% target) in the partner district. All data on hiring, subject areas taught, and placement in high need areas and schools will be collected annually from the program and surveys of its completers and will be verified with data from district HR departments.

Retention. We will assess measures of retention, specifically, *teacher retention in the first three years of a teacher's career*, an HEA measure, and two GPRA measures: *Performance Measure 4: One-Year Employment Retention. The percentage of program completers who were employed for the first time as teachers of record in the preceding year by the partner high-need LEA program and were retained for the current school year* (85% target), and *Performance Measure 5: Three-*

Year Employment Retention. The percentage of program completers who were employed by the partner high-need LEA program for three consecutive years after initial employment (85% target). We will calculate annual retention rates using the initial number of completers per cohort, as opposed to the number of teachers remaining in the cohort in the prior year. Annually we will collect data directly from Visalia District's HR department on TRRE graduate teaching placements to determine the teachers retained in teaching from each cohort. We will gather information on which teachers resigned a teaching position or obtained a non-teaching position and what new position within or outside the district the former teacher assumed. Analyzing these data will yield findings for all retention measures. We will also use surveys and interviews with TRRE graduates to assess the quality of the retention supports including the PLCs; interviews with principals, faculty, staff, and project leadership and reviews of program documents to understand development and implementation of retention efforts.

We will determine the *GPRA Efficiency Measure: The Federal cost per program completer (in the final year of the project period)*, by assessing grant expense budget reports to calculate the grant funds spent divided by the number of program completers.

TRRE Project Goal 3: *Students of TRRE graduates will outperform students of non-participating novice math and science teachers in the rural Central Valley.*

The evaluation question related to implementation and impact includes: How and to what extent is the TRRE Project improving teacher effectiveness and achievement outcomes of students taught by TRRE graduates?

Using a QED to Analyze Student and Teacher Outcomes. In alignment with GPRA Performance Measure 6: Student Learning. *The percentage of grantees that report improved aggregate learning outcomes of students taught by new teachers (5% growth target), we will*

calculate the learning growth of students taught by graduates, as well as select teacher outcomes resulting from participation in the TRRE Project, using a QED. In the final year of the evaluation, pending appropriate comparison data, we will implement a QED to address whether the TRRE Project model is more effective at preparing teachers than traditional teacher preparation program pathways. Waiting until the final year of the evaluation will allow us to pool data from all available appropriate cohorts to increase our sample size. The teacher outcome variables for the QED will be measures of teacher preparation drawn from the surveys of Program Completers, Year One Teachers, and Employers of Year One Teachers available from the EdQ Center and teacher performance as measured by the CalTPA; teacher placement in a high-needs school; and teacher retention. Student growth will be measured by an aggregate score based on a combination of end of year state assessments, pre-post common benchmarks assessments and an analysis of student work.

To facilitate acquisition of comparison teacher data for a QED we will develop a data sharing MOU with the EdQ Center. Beginning in 2014, EdQ began developing an integrated warehouse system that consolidates several existing but previously unconnected data collection efforts across all 23 CSU campuses. This effort will result in a longitudinal data system that compiles measures of professional educator practice and placement and retention outcomes in a centralized system. The EdQ data warehouse and dashboard system currently includes data collected through three annual surveys as follows: Program Completers (perceptions of preparation, confidence in career placement and success at the end of the candidate year); Year One Teachers (placement, experience, and perceptions of preparedness for teaching at the end of the first year in teaching); and Employers of Year One Teachers (perceptions of the skills and abilities of CSU completers relative to current needs). Beginning in the 2018-19 academic year,

EdQ data will also include candidate demographic and “pipeline” data. These data will include: CSU program applicant data (e.g., undergraduate institution and GPA, demographic information), CSU program completer and credential data, post-completion placement data, and retention in teaching data.

TRRE Project Goal 4: *The California Center on Teaching Careers, CSUB, and rural high need partner LEA and schools will develop and sustain project partnerships and institutionalize its residency program model to drive improved student outcomes.*

The evaluation questions related to this goal include: 1) How and to what extent is the TRRE Project institutionalizing the residency model to sustain the work after the grant period? and 2) Developing plans to expand on the residency model with additional partners?

Sustainability and Expansion. To assess the extent to which the TRRE is able to sustain and expand on the work to other partners, WestEd will utilize surveys and interviews with the Center, Visalia and CSUB leaders to understand sustainability and expansion plans, in addition to a document reviews of program materials to assess sustainability plans and institutionalization of the work. WestEd will also interview other potential partners to assess their interest and ability to partner in future residency work.