

Cal Poly Teacher Quality Reform: Pathways and Partnerships to Ensure Student Success

A Proposal for the Teacher Quality Partnership Grant

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Project Narrative

Absolute & Competitive Selection Priorities

Cal Poly Teacher Quality Reform: Pathways & Partnerships to Ensure Student Success addresses *Absolute Priority #1: Partnership Grants for the Preparation of Teachers*. Building on initial reform efforts to three post-baccalaureate credential programs (elementary, secondary, and special education), our proposal includes the following goals:

1. Recruit teachers from underrepresented populations and teacher shortage areas (STEM fields, special education, agriculture, bilingual education) so that eligible partnerships can hire highly-qualified teachers;
2. Create deliberate and sustaining partnerships with high-need partner districts in order to transform the curriculum and clinical experiences of our teacher preparation programs through key reforms identified in Absolute Priority I;
3. In collaboration with partner districts and county offices of education, implement a two-year, formalized induction program that includes high-quality mentoring, structured observations, instructional rounds, and professional development in order to promote teacher retention and K-12 student achievement;
4. Develop teacher learning around K-12 literacy skills across the subject areas (particularly in STEM and computer science) including the implementation of literacy instruction and assessment in order to provide individualized and targeted instruction with an emphasis on ELD integration; and
5. Use the practices of improvement science to engage in continuous improvement and program reform using teacher performance and K-12 student success data.

This proposal is also designed to address *Competitive Preference Priority 1: Promoting Science, Technology, Engineering, and Mathematics (STEM) Education, With a Focus on Computer Science* and *Competitive Preference Priority 2: Promoting Effective Instruction in Classrooms and Schools*.

Competitive preference priority 1.STEM Education is infused in Goals 1-4 of our project (as seen in the work plan, Appendix J) and in the letters of support from the College of Science and Mathematics, the Computer Science department, the Center for Excellence in STEM Education (CESAME), and 100Kin10 (see Appendix I).

For Goal 1 (recruit teachers for teacher shortage areas) and Outcome 1.1 (Starting in Year 2, increase by 7% each year of the project the number of graduates who are highly-qualified and prepared to teach in teacher shortage areas including STEM), our project activities strive to recruit and train more highly-qualified educators in STEM, with a focus on computer science. Recruitment efforts include augmenting already established early field experiences offered through CESAME and the STEM Teacher as Researcher (STAR) program to include a pathway into teaching for computer science majors. This pathway will include a summer training program to empower educators with basic skills for teaching computer science in an inclusive manner. The program is designed for teachers from any discipline and will be offered in the summer providing access for prospective teachers entering or exiting the credential program, interested undergraduates, and in-service teachers seeking to transition from other subjects to STEM fields . In addition, program reform includes the development of a computer science credential implemented by Year 5 of the grant in order to specifically address this teacher shortage area.

Goals 2-4 include sustained, evidence-based professional development for STEM educators, including professional development provided to prospective and master teachers

throughout the yearlong clinical experience (Goal 2), new teachers during the two-year induction program (Goal 3), and in-service teachers through literacy across the subject areas training (Goal 4). Our project budget designates funding for STEM faculty release time and compensation to facilitate collaboration with School of Education faculty and high-need partner districts to develop and implement professional development to support the teaching of rigorous STEM standards. STEM professional development will draw on evidence-based professional development (Wojnowski & Pea, 2013) and previous professional development implemented by the College of Science and Mathematics and CESAME (e.g., two-week workshop on modeling in physics). Literacy professional development will include novel engineering and MakerSpace, with teachers developing curriculum and receiving ongoing, sustained feedback from partnership literacy coaches on implementation. Furthermore, our logic model (see Appendix C) identifies the STEM professional development and is informed by research findings, suggesting that the project component will lead to relevant outcomes.

Through these recruitment and evidence-based professional development strategies, our project will (1) improve K-12 student achievement in STEM (with an emphasis on computer science) and (2) increase the number of educators prepared to deliver rigorous instruction in STEM fields.

Competitive preference priority 2 . The recruitment and retention of educators who are effective and diverse are infused within Goal 1, Outcome 1.2 (Starting in Year 2, increase by 5% each year the number of highly-qualified prospective teachers from underrepresented populations) of the work plan (see Appendix J).

Our proposal seeks to recruit and graduate more highly-qualified teachers of color who reflect the cultural and language heritage of the children in California's rural settings.

Recruitment efforts will include determining barriers that prevent diversity, implementing community college pathways for diverse applicants to enter the teaching profession, and creating coursework and a campus climate that is supportive of students from underrepresented populations. Partnering with the Office of University Diversity and Inclusion (OUDI) at Cal Poly (see letter of support, Appendix I) will allow us to participate in campus-wide diversity strategic planning and programs meant to recruit students from underrepresented populations (e.g., Cal Poly Scholars Program, a university-wide program for recruiting and retaining low-income students) and support these students once they have been admitted (e.g., BEACoN mentors, a program to educate, empower, and advocate for students from underrepresented populations).

In Goal 2, Outcome 2.1 (Beginning Year 2, increase annually by 2% prospective teacher knowledge and skill in research-based instructional strategies and other stipulated reforms), curriculum reform will include the coteaching of methods courses with a social justice faculty member and infusion of culturally sustaining pedagogy in program coursework and vision. Culturally sustaining pedagogy is a framework which fosters the linguistic, cultural, and social practices of marginalized student populations and has been shown to improve student engagement and educational outcomes of students of color (Paris & Alim, 2017). In addition, faculty will attend diversity in the curriculum workshops and will revise curriculum to include diversity objectives and topics for each course.

Through the development of pathways, course reform, and structured mentoring, our project is designed to support the recruitment and retention of educators who are effective and increase diversity. This goal aligns with the needs of our rural, high-need partner districts all of whom identified on the needs assessment the need for “...more teachers that mirror our student population (Latinx/bilingual).”

Background on IHE

Overview of campus. California Polytechnic State University (Cal Poly) is a public university located in San Luis Obispo, California and is one of 23 campuses in the California State University (CSU) system, the largest four-year public university system in the United States. The university is organized into six colleges, offering 64 bachelor's and 32 master's degrees and four credential programs (elementary, secondary, special education, and administrative leadership), enrolling 20,425 undergraduates and 881 graduate students. The six colleges include the following, with colleges and departments relevant to this proposal **bolded**:

- **College of Agriculture, Food, and Environmental Sciences**
 - **Departments including Agriculture Education and Communication**
- College of Architecture and Environmental Design
- Orfalea College of Business
- **College of Engineering**
 - **Departments including computer science and engineering**
- **College of Liberal Arts**
 - **Departments including English, ethnic studies, history, women's and gender studies, world languages and cultures**
- **College of Science and Mathematics**
 - **School of Education**
 - **Departments including biology, chemistry, liberal studies, math, physics**

Teaching philosophy. Known for its “learn by doing” philosophy, coursework is hands-on and encourages students to combine theory with practice to solve real-world problems. Both

undergraduates and graduates engage in problem-based learning (Markham, 2011), authentic experiences in the field, and research. With state-of-the-art laboratories and equipment and interdisciplinary studies in liberal arts (e.g., a minor in Ethics, Public Policy, Science, and Technology and a major in Liberal Arts and Engineering Studies), Cal Poly embraces its “polytechnic” roots, specializing in engineering and science while valuing the humanities.

Student demographics. As of 2018, Cal Poly has the least racially diverse student population of all California State University and University of California campuses and does not reflect the demographics of the state. In 2011, the student population was 63 percent Caucasian; in fall of 2017, it was less than 55 percent. Recent university-wide diversity action initiatives include diversifying faculty, staff, and students; creating an inclusive campus climate; and embedding diversity in the curricula, co-curricular areas, and in the learn-by-doing philosophy. In addition, a major future goal is to move toward becoming an Hispanic Serving Institution (HSI - 25% Latinx/Hispanic).

Although progress has been made, much more needs to be done. Faculty from Cal Poly’s School of Education, housed within the College of Science and Mathematics, have been actively engaged in proposing and implementing these diversity initiatives, collaborating with the Office of University Diversity and Inclusion (OUDI), an on-campus center developed out of the Diversity Action Initiatives. The School of Education and OUDI have formalized a partnership, resulting in the creation of a faculty associate position in OUDI, providing release time for a School of Education professor to coordinate outreach efforts with K-12 schools (see Appendix I for a letter of support from OUDI).

Overview of credential programs. The School of Education, housed within the College of Science and Mathematics at Cal Poly, offers three post-baccalaureate teacher credential

programs, one administrative credential, and one authorization program (Spanish Authorization for Bilingual Educators). The three credential programs included in this proposal are elementary, secondary, and special education. All three programs follow a cohort model with prospective teachers simultaneously completing three-quarters of coursework and a yearlong clinical experience, working collaboratively with a master teacher and clinical practice supervisor throughout the yearlong experience.

All credential programs in California are governed and evaluated by the California Commission on Teacher Credentialing (CTC). The CTC is responsible for setting the standards for educator preparation, accrediting teacher preparation programs, and licensing educators. In June 2016, the CTC adopted new Teacher Performance Expectations, which all teacher preparation programs needed to implement by fall of 2017. Cal Poly's credential programs are fully accredited through the CTC, meet all applicable State certification and licensure requirements that promote teacher quality and student academic achievement, and adhere to the qualifications described in section 612(a)(14)(C) of the Individuals with Disabilities Education Action (IDEA).

Overview of initial reform. Cal Poly's School of Education, housed within the College of Science and Mathematics, has been supported in recent teacher preparation reform through a S.D. Bechtel Grant. Through our work on the Bechtel Grant over the past two years, we have begun to build continuity between teacher preparation and the yearlong clinical experience.

Below are some of our piloted reform efforts:

- Piloted a district partnership model including pod placements, district and university partnership liaisons, and collaboration on professional development for prospective and

master teachers; partnership model resulted in an increase in yearlong clinical experience placements and the hiring of program graduates within the partner district

- Implemented clinical practice supervisor workshop series including (1) norming and calibration with the unit-wide adopted Danielson-Aligned Clinical Practice Observation Tool, (2) defining qualities of effective feedback on instruction, (3) providing professional development in research-based practices included in the observation tool, and (4) coaching in learning focused supervisor (Lipton& Wellman, 2013) to improve the quality, depth, and accuracy of the mentoring and feedback provided to prospective teachers
- Created a new staff position in the School of Education (i.e., Clinical Practice Coordinator) to support partnerships

In addition to these Bechtel reform efforts, the School of Education, housed within the College of Science and Mathematics, is organized in such a way that the School of Education interacts with faculty in subject matter areas, specifically STEM fields. In addition, the Center for Excellence in STEM Education (CESAME) has created an infrastructure of rich, early field experiences for prospective STEM teachers, including opportunities to teach in the Learn By Doing Lab, tutor in K-12 schools, complete research as part of the STEM Teacher and Researcher Program (STAR) as well as receive financial support to pursue a career in STEM education through the NSF funded Noyce Scholarship program.

Next steps for reform. While our credential programs have experienced recent advancement, we are not complacent or satisfied. Moving forward, we plan to create continuity and coherence through the development of a teacher preparation continuum in order to prepare

highly-qualified teachers to teach in rural communities and teacher shortage areas. Our reform efforts are grounded in the following:

- Create pathways to teaching for students from underrepresented populations and teacher shortage areas
- Create deliberate and sustaining partnerships grounded in reformed curriculum and yearlong clinical experience
- Implement a two-year, formalized induction program grounded in high-quality mentoring, collaboration, and data-driven reflection
- Provide sustained, collaborative professional development in CCSS-ELA, CCSS-M, ELD, NGSS, and literacy across the subject areas

As we work with our high-need partner districts in building coherence in teacher preparation and meeting the needs of district partners, K-12 student success will guide our reform efforts.

Vision for Reform

Our vision for teacher preparation reform prioritizes establishing deliberate and sustainable partnerships across multiple contexts and stakeholders to promote a collaborative view of teacher preparation. Historically in teacher preparation, universities “partner” with local schools for the purpose of placing prospective teachers in the field. However, these placements often feel disjointed from teacher education coursework and are more out of convenience rather than resulting in the *mutual* interests of both the teacher preparation program and the district; prospective teacher learning may occur as a result of this field experience; however, this learning may be out of chance rather than by design.

Our proposal includes the deliberate partnering at all levels of teacher education, taking an interdisciplinary approach to teacher preparation. Partnering with four colleges and two

centers on campus, our proposal truly embodies our “polytechnic” roots of specializing in engineering and science while embracing the humanities. This university-wide collaboration allows us to develop content-rich field experiences, particularly targeting teacher shortage areas, and creating pathways to education for community college students. Our partnerships extend into four high-need partner districts located north, south, and east of our campus with an emphasis on not only supporting the learning of prospective teachers throughout the yearlong clinical experience, but also extending collaboration into a two-year induction program and in-service teacher professional development. Furthermore, partnerships with county offices of education are crucial for creating continuity in teacher support.

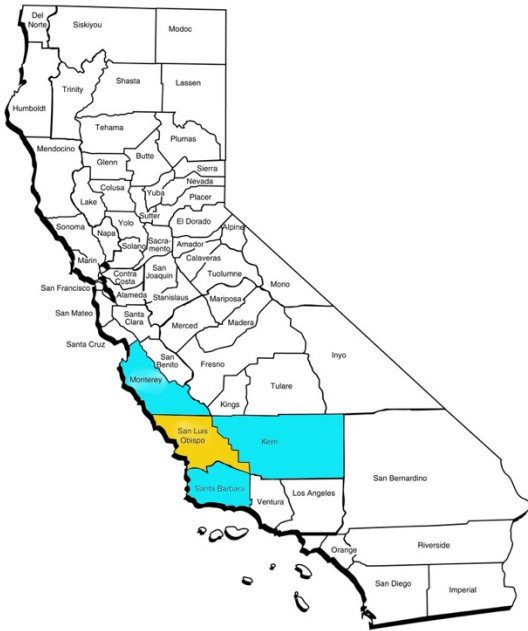
At the core of all of our reform efforts is collaboration grounded in coteaching.

Coteaching was recommended by the NCATE Blue Ribbon Panel of 2010 as one of the best models for improving clinical practice, creating a space for a prospective and master teacher to coplan, coconstruct, and coassess, resulting in K-12 student learning (Bacharach, Heck, & Dahlberg, 2010; Hang & Rabren, 2009) and teacher learning (Badiali & Titus, 2010; Beers, 2008; Guise, Habib, Thiessen, & Robbins, 2017; Roth & Tobin, 2004; Scantlebury, Gallo-Fox, & Wassell, 2008; Tobin & Roth, 2005). We extend coteaching beyond the yearlong clinical experience and embed it in all aspects of our proposal, positioning all reform participants (e.g., university faculty, prospective teachers, partnership liaisons, literacy coaches) as members of a learning community grounded in collaboration. Our clinical experience and reform efforts are informed by Lave and Wenger’s (1991) notion of situated learning and social constructivism (Bruner; Vygotsky), positioning learning as taking place in interactions with others in a community of practice. Through coteaching, we aim to create and sustain a culture of inquiry and continuous improvement.

We believe that teacher preparation is an iterative, cyclical relationship that extends throughout the longevity of the individual teacher's career and requires collaborative partnerships to result in teacher and student learning. We posit that through these deliberate partnerships and concern for the local context of high-need partner districts, a model for teacher preparation can be developed for the state and nation.

LEA Needs Assessment

Cal Poly will partner with four districts in the rural and high-need settings that stretch north from our campus to King City (South Monterey County), south to Guadalupe (rural Santa Barbara County), and east to the rural agriculture communities in Kern County. The table in Appendix D shows these high-need qualifying districts and the number of students and teachers to be served in each district.



The four counties within the four high-need partner districts serve students of Latino heritage who are place-bound by poverty and low-wage agricultural employment. In Monterey County, located north of Cal Poly, only 4% of the adult population holds a bachelor's degree. In San Luis Obispo County, where Cal Poly is located, 28% of the families survive on less than \$25,000 per year. In Santa Barbara County, 14%

of the population lives below the poverty line. In Kern County, located east of Cal Poly, one in four families is living in poverty as defined by the U.S. Census.

Results from a partner district needs assessment (see Appendix C) reveal that teachers working in rural, remote schools do not have access to high-quality professional development needed to meet rigorous state standards including CCSS-ELA, CCSS-M, ELD, and NGSS. For example, one administrator stated, “We would love to have assistance in middle schools in shifting to the NGSS standards and an implementation of Cal Poly’s Learn by Doing model of instruction.” In addition, partner districts serve a significant number of limited English proficient students. In San Luis Obispo and northern Santa Barbara counties, the K-6 limited English proficient populations are 41% and 58% respectively (California Department of Education, 2018). Consequently, high-need partner district administrators called for “more culturally and diverse teachers” and identified a struggle to find “highly-qualified BCLAD and dual immersion teachers.” Furthermore, high-need district partners expressed a need for “filling our classrooms with high-quality instructors.”

Quality of Project Services (15 points)

The quality and sufficiency of strategies for ensuring equal access and treatment for eligible project participants who are members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age or disability.

In order to ensure equal access and treatment for eligible project participants who are members of underrepresented groups, we will partner with high-need partner districts, community colleges, and Cal Poly programs to implement the following:

- Develop community college pathways to teaching, including the creation of (1) an introduction to teaching course, (2) teaching club, and (3) education advisor so that community college students gain access to early field experiences and can transition seamlessly into a fifth-year teacher preparation program at Cal Poly;

- Coordinate with the Cal Poly's Office of University Diversity and Inclusion (OUDI) to develop marketing and curricular materials that utilize images and language representative of a diverse set of ethnicities, races, and cultures;
- Strategize recruitment efforts to publicize in locations and venues outside of those traditionally targeted;
- Include faculty and staff from the on-campus undergraduate STEM center (CESAME) in the development of targeted pathways, recruitment strategies, and curricula materials for students of color and underrepresented populations;
- Restructure credential program orientation workshops and informational sessions for prospective teachers, master teachers, and clinical practice supervisors to include bias training and/or social justice curriculum; and
- In collaboration with OUDI, offer annual bias training and social justice workshops to School of Education faculty and staff

The extent to which the services to be provided by the proposed project involve the collaboration of appropriate partners for maximizing the effectiveness of project services.

Partnerships are at the core of our proposal. Our proposal includes multiple partnerships at different levels of teacher preparation including partnerships within the university (four colleges, one school, and two centers on campus); outside of the university through our four high-need partner districts, four county offices of education, and community colleges; and collaboration across the California State Universities (CSUs) (see organizational chart, Appendix J, and letters of support, Appendix I). At each level, partner representatives collaborate to maximize the quality of the services to be received by prospective, new, master, and in-service

teachers and the K-12 students. Through these partnerships, we will identify clarified roles and delineate clear responsibilities to ensure the meeting of mutual needs.

Furthermore, coteaching is embedded throughout our proposal; we recognize the expertise that content and education specialists bring to teaching as well as the local knowledge base of high-need partner districts. Through collaborative curriculum development, instruction, sustained professional development, and mentoring, mutual and localized interests can be pursued and achieved.

The extent to which the services to be provided by the proposed project reflect up-to-date knowledge from research and effective practice.

The partnership model for teacher preparation proposed for this project is grounded in a set of high-leverage, effective teaching practices garnered from empirically-based, research practices including the work of C. Danielson, measures of effective teaching, edTPA, and other sources aligned with Absolute Priority 1. Recent research has identified prioritized teaching practices that have been identified to have large effect sizes on student achievement (e.g., high-leverage practices from Teaching Works), and we have done this work through the creation of a Danielson-Aligned Clinical Practice Observation Tool. Additionally, the yearlong clinical experience – grounded in a coteaching model – is supported by the NCATE Blue Ribbon Report (2010), the Council for the Accreditation of Educator Preparation (CAEP) Standards for Teacher Preparation (2013), and coteaching research (Bacharach et al., 2010; Guise , et al., 2017; Scantlebury et al., 2008). The model for professional development is grounded in theory-based recommendations of Birman, Desimone, Porter, & Garet (2000), Borko (2002), Guskey (2002), and Sparks (2002).

The extent to which the training or professional development services to be provided by the proposed project are of sufficient quality, intensity, and duration to lead to improvements in practice among the recipients of those services.

The structure of our professional development programs will respond to the theory-based recommendations of Birman et al. (2000), Borko (2002), Guskey (2002), and Sparks (2002). High-quality professional development has several important characteristics. First, professional development is sustained through a period of time that includes opportunities to attempt new skills and knowledge in classrooms with support through coaching. This continued support throughout the academic year is contextualized and takes into consideration the circumstances of student populations, school resources, curriculum, and school limitations. Second, modeling and coaching are key. Coaches can help neophytes master the elements of new instructional strategies through repeated trials and scaffolding over a few observations and modeled teaching episodes. Finally, supportive feedback and critique are provided to teachers as they attempt the application of new skills and knowledge. Feedback is most helpful if it includes further modeling of critical elements of the professional development in need of practice and is grounded in observational data.

In our proposed project services, whether receiving professional development through the yearlong clinical experience grounded in coteaching, as a part of the two-year induction program, or through the participation in professional development focused on integrated literacy and challenging state academic standards (CCSSELA, CCSS-M, NGSS), individualized, collaborative, and sustained professional development are at the heart of these services. For example, our two-year induction model includes new teachers in high-need partner districts coteaching with a Cal Poly math education faculty member in order to collaboratively plan,

instruct, and reflect with the modeling of high-leverage teaching practices and coaching from Cal Poly faculty to support those instructional practices. A similar professional model is implemented for prospective and master teachers whereby quarterly professional development is provided grounded in supporting coteaching, master teacher coaching, and targeted content to meet the particular needs of the high-need partner school context with coaching occurring throughout the yearlong clinical experience. Through these two examples and others provided in the work plan (see Appendix J, Goals 2-4), we move beyond stand-alone workshops proven ineffective to supporting teacher development (Birman et al., 2000; Borko, 2004). Instead, we ground our approach in targeted, contextualized content supported through coaching, modeling, and data-driven reflection.

Quality of the Project Design (40 points)

Description of the program. Our partners, working together, have declared four primary goals grounded in measurable outcomes with specific activities and milestones identified (see Work Plan, Appendix J). These mutually-created goals, the backbone of our partnership, show promise to creating a deliberate and collaborative continuum of teacher preparation that results in high levels of teacher and student learning. As our project evolves, we will collaboratively engage in data-driven improvement cycles to revise and enhance project goals, outcomes, and activities, ensuring the delineation of clear roles and responsibilities for mutual benefit. Furthermore, our partnership focuses on sustainability efforts, including leveraging resources and developing structures that will continue to support the mutual needs of all partners beyond project funding. Through our collaborative efforts, our partnership has the capacity and resources to meet the following project goals and objectives.

GOAL 1: RECRUIT TEACHERS FROM UNDERREPRESENTED POPULATIONS AND TEACHER SHORTAGE AREAS (STEM FIELDS, SPECIAL EDUCATION, AGRICULTURE, BILINGUAL EDUCATION) SO THAT ELIGIBLE PARTNERSHIPS CAN HIRE HIGHLY-QUALIFIED TEACHERS

Goal 1 objectives and outcomes. Results from a preliminary local needs assessment indicate that all four high-need partner LEAs are in need of a larger pool of highly-qualified STEM, special education, agriculture, and bilingual education teachers (See Appendix C). In alignment with competitive preference priorities 1 and 2, we will recruit and graduate more highly-qualified teachers to meet the needs of hard-to-staff schools in California's most rural and remote areas as well as teachers of color who reflect the cultural and language heritage of the children in California's rural settings. Recruitment initiatives in teacher shortage areas (STEM, special education, agriculture, bilingual education) and individuals from underrepresented populations will include (1) identifying barriers leading to lower enrollment of prospective teachers; (2) creating a recruitment plan in consultation with HR representatives from high-need partner districts; community colleges; and the Cal Poly recruitment specialist, program faculty, and campus centers (e.g., CESAME, OUDI); (3) developing an education minor; and (4) fostering sustainability of recruitment efforts through the creation of marketing and curricular materials and university infrastructure.

Goal 1 outcomes include the following:

- Outcome 1.1: Starting in Year 2, increase by 7% each year of the project the number of graduates who are highly-qualified and prepared to teach in teacher shortage areas including STEM, special education, agriculture, and bilingual education;

- Outcome 1.2: Starting in Year 2, increase by 5% each year of the project the number of highly-qualified prospective teachers from underrepresented populations; and
- Outcome 1.3: By Year 5, recruitment efforts will result in the enrollment of 14 undergraduate students in a newly created education minor

Recruitment of STEM teachers . The STEM recruitment plan will include partnering with Cal Poly's Center for Excellence in STEM Education (CESAME) to offer high-quality undergraduate early field experiences, developing targeted recruitment materials, and partnering with advising offices at Cal Poly and local community colleges to create pathways into STEM education.

Currently, one of Cal Poly's most successful methods of recruitment for STEM teachers has been the undergraduate early field experience programs offered by CESAME. CESAME's STEM Teacher and Researcher (STAR) program provides aspiring teachers the opportunity to conduct authentic STEM research at national labs (NASA, NOAA, Department of Energy, Department of Defense labs) and helps students translate their research experience into classroom practice. The program lasts nine weeks and has three major components: summer research internships, education workshops, and opening and closing conferences. The program is an incentive for highly-qualified STEM students to choose teaching, provides prospective teachers an experience to leverage when they become teachers, and the community of STAR fellows acts as a support network for retaining teachers once they enter the profession. STAR will continue to be one STEM recruitment mechanism for Cal Poly.

Leveraging the already-existing recruitment efforts of CESAME and STAR, we will expand these efforts by creating pathways for computer science and engineering majors to pursue a career in teaching. The Computer Science and Software Engineering Department,

School of Education, and CESAME will develop, pilot, and study a prospective teacher training program that empower educators with basic skills for teaching computer science in an inclusive manner. The program is designed for teachers from any discipline and will be offered during the summer providing access for prospective teachers entering or exiting the credential program as well as undergraduates and in-service teachers seeking to transition from other subjects to STEM fields. The program will consist of three segments focusing on development, application, and reflection/further development of computational skills through project-based learning.

Coursework and field experiences – including participation in Engineering Possibilities in College (EPIC) (a three-week session where over 500 middle and high school students come to the university to learn engineering and computer science) – will provide experience teaching core computer science ideas.

Capitalizing on the interest in the summer computer science program, Cal Poly will also establish by Year 5 a computer science credential, addressing the need of high-need partner districts to hire teachers with the appropriate skills in computer science. See Appendix J, work plan, for additional details about our STEM recruitment activities and milestones.

Recruitment of special education teachers Recruitment efforts for the special education program will include advertising pathways to a credential in special education to paraeducators in high-need partner districts. We will recruit paraeducators through the help of San Luis Obispo and Santa Barbara County Offices of Education and their Classified School Employee Teacher Credentialing Programs grant, a state-funded career pathway program for classified employees that helps to cover tuition, fees, and books associated with enrolling in a credential program. In addition, the special education program will create a credential-only cohort by Year 4, which will

recruit additional prospective teachers who may not be interested in a master's degree and credential.

Recruitment of agriculture teachers. In California, there is a teaching shortage in agriculture. To address this need, we plan on implementing similar recruitment efforts mentioned for the recruitment of STEM educators (e.g., recruitment plan, development of marketing materials, early field experiences, education minor). In addition, we will augment the 26-Hours of Science & Technology in Agriculture program, which has proven to be a successful university-wide effort at attracting students from underrepresented groups to agricultural majors in higher education. The 26-Hours of Science & Technology in Agriculture program brings K-12 students, counselors, teachers, and administrators to campus to participate in workshops and activities that immerse them in the world of high-tech agriculture, employing a “learn by doing” approach.

Recruitment of bilingual education teachers. In 2016, California electors approved the expansion of bilingual programs under Proposition 58. This increase in public demand for bilingual education has not been met with increased numbers of qualified bilingual educators. In 2015-2016, California authorized just 700 new bilingual teachers, which is less than half the number of bilingual educators the state authorized in the 1990s, when bilingual education was at its peak (Carver-Thomas & Darling-Hammond, 2017). To meet this need, we will attract prospective teachers to our Spanish Authorization for Bilingual Educators (SABE) program by developing undergraduate study abroad programs in consultation with the Liberal Studies department and Study Abroad Office. Through the support of our partner county offices and their state-sponsored Bilingual Teacher Professional Development Grant Program, we will develop a recruitment plan and materials to create a fully online version of our SABE program in order to

support full-time teachers in adding a bilingual authorization to their current credential. For more activities and milestones related to bilingual education, please see the work plan in Appendix J.

Recruitment of individuals from underrepresented populations. For the recruitment of teachers from underrepresented populations, in 2010, Former Secretary of Education, Arne Duncan called for a more diverse teaching force (Bireda & Chait, 2011). Our efforts will also focus on the issues that teachers of color encounter in order to develop a curriculum and an environment that meets the needs of and retains these teachers of color (Achinstein & Aguirre, 2008; Gorski, 2009; Ingersoll & May, 2011; Mabokela & Madsen, 2007; Montecinos, 2004). Activities will include conducting a needs assessment to determine issues that impact individuals from underrepresented populations from pursuing a career in teaching. We will also develop an undergraduate course that (1) uses a critical race theory framework to center the schooling experiences of youth of color, (2) places undergraduate students in racially- and ethnically-diverse schools to mentor youth of color, and (3) complete a service-inquiry project, examining how to teach for social justice. Similar coursework will be developed for a strand of the education minor developed. Although it is important to increase the number of applicants from underrepresented populations to pursue a career in teaching, we want to embody inclusive practices so that these prospective teachers feel welcomed on campus and can create inclusive environments for their K-12 students. See Appendix J (work plan) for additional activities and milestones for recruiting individuals from underrepresented populations.

Education minor as a recruitment strategy. An additional strategy for recruitment will be the development and implementation of an education minor. Although Cal Poly has rich undergraduate early field experiences that reside within CESAME (e.g., Learn by Doing Lab, Mentors Out of School Time, STAR), we do not have an education minor for undergraduates in

STEM or other majors (e.g., computer science, ethnic studies, English, liberal studies). By developing an education minor advertised to all colleges and departments on campus and grounded in research-based and collaborative teaching practices, we will create a pathway to education that feeds into our credential programs. In addition, undergraduates transferring from community colleges will benefit from this education minor by continuing their coursework in education when they arrive at Cal Poly. Furthermore, recruiting from community colleges via our partnership pathway will enable us to recruit mid-career professionals.

GOAL 2: CREATE DELIBERATE AND SUSTAINING PARTNERSHIPS WITH HIGH-NEED PARTNER DISTRICTS IN ORDER TO TRANSFORM THE CURRICULUM AND CLINICAL EXPERIENCES OF OUR TEACHER PREPARATION PROGRAMS THROUGH KEY REFORMS IDENTIFIED IN ABSOLUTE PRIORITY I

Goal 2 objectives and outcomes. Effective partnerships between teacher preparation programs and school districts significantly enhance the quality of recruitable and retainable teachers. Through partnering, districts have the opportunity to develop talent from the beginning of a teacher's training and collaboratively work together to train and support their teachers to better meet the specific needs of their population of students ().

Cal Poly plans to create and sustain collaborative partnerships between teacher preparation programs and high-need partner districts who have a mutual interest in training highly-qualified teachers and supporting K-12 learning. The partnership model will include (1) pod placements in which multiple prospective teachers across three credential programs are placed at one school site, (2) coteaching throughout the yearlong clinical experience with a focus on collaboration and data-driven reflection, (3) professional development for master teachers and

clinical practice supervisors in mentoring, and (4) partnership liaisons to foster communication and field-site alignment with credential program coursework. Furthermore, the partnership model will include district representation in credential program admission decisions, seeking to understand the qualities of highly-qualified teachers partner districts look for when making hiring decisions.

In addition, programs will adopt reforms in keeping with the federal statutes of teacher quality partnership programs and the design principles for clinically-based teacher preparation found within the NCATE Blue Ribbon Panel publication, *Transforming Teacher Education Through Clinical Practice: A National Strategy to Prepare Effective Teachers* . These reforms will be met through the identification and infusion of research-based effective teaching practices throughout the teaching preparation continuum.

Goal 2 outcomes include the following:

- Outcome 2.1: Beginning Year 2, increase annually by 2% prospective teacher knowledge and skill in research-based instructional strategies and other stipulated reforms, as measured by edTPA and the Danielson-Aligned Clinical Practice Observation Tool;
- Outcome 2.2: Enhance the clinical experience for all prospective teachers and improve K-12 student learning in field placement classrooms in established partnerships;
- Outcome 2.3: Establish deliberate and sustainable partnerships with high-need partner districts; and
- Outcome 2.4: By Year 3, achieve improvement in coteaching implementation in the secondary credential program made evident by a 10% increase on the adopted coteaching rubric and expand the scope of coteaching to include one additional teacher preparation program each of the project

Absolute priority 1: Required reforms. High-need partner districts and county offices of education will inform Cal Poly's existing knowledge base about performance areas of teachers that need development, and through thought-partnering on teacher preparation curriculum, revisions will occur. All revised course syllabi will be shared at executive council meetings (see Appendix J for organizational chart) and feedback will be provided for additional revisions. This partnership model to curriculum reform will support each of the required reforms addressed below, which will be included in fifth-year credential programs at Cal Poly.

(b) (2) (i) (ii) Reform Element: Using empirically-based practice and scientifically valid research about teaching and learning so that all prospective teachers understand and can implement research-based teaching practices in classroom instruction and have knowledge of student learning methods.

Cal Poly will call upon strong faculty resources to train and update colleagues in the three credential programs to understand and convey to their prospective teachers empirically-based practice and scientifically-valid research and its applicability to teaching in high-needs partner districts with limited English proficient, low-income, and rural students. The quality of the practices and research will be held to the highest standards, as exemplified by policy and examples of the Institute for Educational Sciences and similar institutes and agencies regarded for the quality of their research methodology. Faculty will also learn the latest research on student learning methods to include within their curricula.

Annually, faculty will examine course syllabi and assessments for empirically-based practices and scientifically-valid research, making revisions to be in alignment with this goal. In addition, faculty will embed empirically-based practices from the Danielson-Aligned Clinical Practice Observation Tool into their courses in order to ensure alignment between coursework

and the clinical experience. Prospective teachers will be assessed on their ability to employ these strategies through the required edTPA.

(b) (2) (iii) Reform Element: Possess skills to analyze student academic achievement data and other measures of student learning and use such data and measures to improve classroom instruction.

Cal Poly will call upon faculty, and as needed, external consultants and specialists, to train and update colleagues across the three credential programs to understand and convey to prospective teachers skills to analyze student data to improve classroom instruction. Particular attention will be given to formatively and summatively assessing student learning in regards to CCSS-ELA, CCSS-M, and NGSS. Additional assessment skills will focus on bilingual literacy assessment and diagnosis of reading challenges for limited English proficient learners, using practices recommended by the *National Literacy Panel on Language-Minority Children and Youth* (August & Shanahan, 2006).

Teacher education faculty will produce updated syllabi and adopt curriculum resources that convey skills to analyze student data to improve classroom instruction. Following this faculty curriculum work in consultation with partner districts, the university will approve revisions to syllabi, course content, and course description that include skills to analyze student data to improve classroom instruction.

In addition to course reform, the clinical experience will be reformed by providing professional development to clinical practice supervisors and master teachers in data-driven instruction so that these mentors can support prospective teachers in regards to this Absolute Priority Reform Element. In addition, prospective teachers will be expected to demonstrate their ability to use data to improve classroom instruction on the edTPA.

(b) (2) (iv) (A) (B) Reform Element: Possess teaching skills and an understanding of effective instructional strategies across all applicable content areas that enable general education and special education teachers to meet the specific learning needs of all students, including students with disabilities, students who are limited English proficient, students who are gifted and talented, students with low literacy levels; and differentiate instruction for such students.

Recent state-reform to credential program curriculum have included a focus on meeting the needs of all students. Although our prospective teachers are introduced to this empirically-based practice and scientifically-valid research, there are few opportunities built-in to coursework and the clinical experience to implement these practices and receive targeted feedback and coaching on these practices. Addressing this reform element, we will create an integrated model in which prospective teachers from our elementary and secondary credential programs will engage in lesson study with prospective teachers from our special education program. Together they will coplan, observe, and reflect on integrated lessons in order to meet the needs of students with disabilities and students who are gifted and talented. Similarly, our Spanish Authorization for Bilingual Educators (SABE) students will be partnered with prospective teachers from our three credential programs to engage in a lesson study cycle that supports limited English proficient students and students with low-literacy levels. In addition, opportunities to practice differentiated instruction and Universal Design for Learning (UDL) will occur when coplanning since the special education prospective teachers bring a wealth of knowledge in differentiated instruction but sometimes struggle with UDL, a framework that is deeply embedded in our elementary and secondary programs. When implemented effectively, lesson study has shown to improve teachers' content knowledge, instructional choices, and

reflection on student thinking and learning (Lewis, Perry, Friedkin, & Roth, 2012). Through this lesson study opportunity, prospective teachers will gain experience in collaborating as general and special educators and implementing DI and UDL.

These coteaching opportunities in coursework will continue in the clinical experience through strategic pod placements in high-need partner districts in which prospective students from all three credential programs will be placed at the same school site. This collaboration will culminate in an end-of-the year Mock IEP event. Through the embedding of cross-program coteaching and application, prospective teachers will be expected to demonstrate their skills and to differentiate instruction on the edTPA. Faculty will provide prospective teachers with teaching skills to meet a broad array of student needs, particularly those students found in the rural and remote communities of our high-need LEAs.

(b) (2) (v) Reform Element: Can effectively participate as a member of the individualized education program team.

Faculty specialist with expertise in the Individuals with Disabilities Education Act (IDEA) and the role and function of individualized education program (IEP) teams, will teach all faculty of teacher preparation programs the knowledge and skills prospective and new teachers will need to convey participation skills for individualized education program (IEP) team.

Building off of the School of Education's unit-wide implementation of a Mock IEP event from 2017, faculty and partner district representatives will refine this model by carefully scaffolding the experience earlier in the yearlong credential program and creating a clear context for the student and stakeholder roles. This Mock IEP event will also be extended to simulate a conference for supporting limited English proficient students with disabilities

(b) (2) (vi) Reform Element: Can successfully employ effective strategies for reading

instruction using the essential components of reading instruction (phonemic awareness; phonics; vocabulary development; reading fluency, including oral reading skills; and reading comprehension strategies).

Faculty experts of the CSU Center for the Advancement of Reading and Writing (see letter of support, Appendix I) will train Cal Poly faculty in effective strategies for reading instruction, including knowledge of assessments and their use, the effective use of national reading programs and their interventions, and the means to provide specialized assistance to students with particular needs, especially limited English proficient students.

Following this training, faculty will update and improve reading instruction for prospective teachers in all credential programs, including improvements to course syllabi and instructional resources. Faculty will also learn to assess and evaluate prospective teacher acquisition of reading instruction skills.

The clinical experience will be enhanced by providing prospective teachers from all three credential programs an opportunity to attend yearlong literacy professional development and work with a literacy coach hired in consultation with the high-need partner district (see Goal 4 for more details about this professional development).

Through course and clinical experience reform, faculty will monitor prospective teacher performance on the Reading Instruction Competency Assessment (RICA), a standardized test of reading instruction based on the essential components of reading instruction, and make adjustments to the curriculum and clinical experience to maintain high levels of performance on this exam.

(b) (3) Reform Element: Ensuring collaboration with departments, programs, or units of a partner institution outside of the teacher preparation program in all academic content

areas to ensure that prospective teachers receive training in both teaching and relevant content areas.

As described in the project management plan and organizational chart (see Appendix J), our project capitalizes on the interdisciplinary nature of Cal Poly and the unit-wide School of Education initiatives that have united our three credential programs (e.g., common observation tool used across all three credential programs). Content-area faculty outside of teacher education from a variety of departments and colleges (e.g., computer science, engineering, English, math, science, liberal studies) will develop curriculum, early field and clinical experiences, and professional development to ensure prospective teachers are highly-qualified, including subject matter course development and student advisement with regard to subject matter competency. The work plan (see Appendix J) and project budget show release time and compensation for content-area faculty, with letters of support from a variety of colleges and departments on campus (see Appendix I). Content-area faculty, department chairs, and deans of colleges outside of teacher education will serve on the executive council to ensure that faculty of the disciplines have a strong role in curriculum development, both in content and relevant pedagogy.

(b) (4) Reform Element: Developing and implementing an induction program.

Goal 3 of the project narrative and work plan (see Appendix J) is entirely dedicated to the creation, implementation, and evaluation of a two-year induction program focused on building continuity from a teacher preparation program to the first two years of employed teaching and providing recent graduates and new hires with support in the form of coteaching, coaching, and targeted professional development. Cal Poly will work closely with county offices of education and high-need partner districts to develop a shared support system for teacher induction. See Goal 3 for more details about this reform element.

(b) (5) Reform Element: Developing admissions goals and priorities aligned with the hiring objectives of the high-need locational educational agency (LEA) in the eligible partnership.

The on-going needs assessment of LEAs and their high-needs schools will be evaluated in collaboration with partner county offices of education. Furthermore, the LEA representatives at monthly partner team meetings and the project leadership team will identify employment needs of the high-need LEAs. High-need partner district human resource specialists will advise Cal Poly on targets for teacher recruitment and admission.

In addition, administrators and master teachers from the high-need partner districts will serve as representatives on Cal Poly prospective teachers interview panels. District representatives will provide input on revision to admission rubrics and materials submitted as well as conduct interviews and offer thoughts on admission decisions.

(b) (6) Reform Element: Implementing program and curriculum changes to ensure that prospective teachers have the requisite content knowledge, preparation, and degree to teach Advanced Placement or International Baccalaureate courses successfully.

The faculty of the disciplines outside of teacher education will review the requirements and expectations for teacher content preparation for teaching Advanced Placement courses or International Baccalaureate courses. The content specifications will be reviewed against course content of the approved subject matter programs at Cal Poly. Additional courses or enhancements to existing courses will be undertaken by the content faculty.

Reform to the clinical experience . Cal Poly has made recent improvements to the yearlong clinical experience by (1) developing and implementing in all three credential programs a Danielson-Aligned Clinical Practice Observation Tool grounded in high-leverage teaching practices, (2) yearlong professional development for clinical practice supervisors and master

teachers in mentoring, quality feedback, and learning focused supervision (Lipton & Wellman, 2013), (3) piloting of a partnership model with a local high-need district, and (4) implementation of coteaching in the single subject program with several publications in peer-reviewed journals and collaboration on coteaching within the CSUs. Although we have made advancements in the yearlong clinical experience, the proposed project would allow us to enhance these components of the clinical experience and expand to additional high-need districts.

Deliberate and sustainable partnerships Through previous piloting of a partnership model supported through a S.D. Bechtel grant, the partnership model shows promise in developing a joint vision to teacher preparation and establishing mutually beneficial relationships and open communication about clinical experience placements and high-need partner district student and teacher needs. Bridging teacher preparation coursework and the field, our proposed project expands the partnership model to four rural and remote schools seeking to support teacher preparation and ongoing teacher learning through pod placements, coteaching during the yearlong clinical experience, context-specific professional development, data-driven decision making, and partnership liaison support.

High-quality mentoring. With the recent increase in the time prospective teachers spend in their yearlong clinical experience, prospective teachers in our teacher preparation program engage in more face-to-face time in the field than they do in their credential coursework. Master teachers and clinical practice supervisors play a pivotal role in the development of the prospective teacher. Therefore, we will provide yearlong, evidence-based professional development to master teachers and clinical practice supervisors to ensure that they have the content and pedagogy knowledge needed and are trained in coaching and providing effective evidence-based feedback to ensure high-quality mentoring. Master teachers will receive release

time through the grant-funded hiring of substitute teachers so that mentoring workshops can occur during the school day. For mentoring workshops that occur outside of the normal work hours, master teachers and clinical practice supervisors will receive stipends for their participation. University and partner-district faculty involved in the development of the workshops will receive a reduced work load and/or compensation.

Coteaching fidelity and expansion. Previous research on the implementation of coteaching during the clinical experience has argued for the benefits of coteaching, benefits to a variety of stakeholders including K-12 students (Bacharach et al., 2010; Hang & Rabren, 2009) and prospective and master teachers (Badiali & Titus, 2010; Beers, 2008; Guise et al., 2017; Roth & Tobin, 2004; Scantlebury, et al., 2008; Tobin & Roth, 2005). Other research on the implementation of coteaching during the clinical experience have provided suggestions on how to support coteaching pairs who are implementing coteaching, often identifying challenges to this model and ways to address these challenges (Badiali & Titus, 2010; Darragh et al., 2011; Guise et al., 2017; Scantlebury et al., 2008).

Research has not examined the extent to which coteaching is implemented with fidelity during the coteaching experience. Although research shows that coteaching during the clinical experience is a model of learning how to teach that benefits the prospective teacher – resulting in numerous teacher education programs adopting this model – few programs have explored whether or not coteaching is effectively being implemented with fidelity.

Our project activities and research agenda explore issues of coteaching fidelity and support. First, we will develop a coteaching rubric for coplanning, coconstructing, and coassessing that includes measurable behaviors grounded in research on coteaching to determine what level of coteaching implementation occurs. This coteaching rubric will be used in clinical practice

supervisors trainings and as a self-assessment tool for prospective and master teachers. In addition, we will train clinical practice supervisors in coteaching coaching in order to support coteaching pairs in the field. We also will expand our coteaching to other credentials (e.g., elementary education), adding one program per year of the grant beginning Year 3.

GOAL 3: IN COLLABORATION WITH PARTNER DISTRICTS AND COUNTY OFFICES OF EDUCATION, IMPLEMENT A TWO-YEAR, FORMALIZED INDUCTION PROGRAM THAT INCLUDES HIGH-QUALITY MENTORING, STRUCTURED OBSERVATIONS, INSTRUCTIONAL ROUNDS, AND PROFESSIONAL DEVELOPMENT IN ORDER TO PROMOTE TEACHER RETENTION AND K-12 STUDENT ACHIEVEMENT.

Goal 3 objectives and outcomes. Results from a preliminary local needs assessment indicate that our high-need LEAs in are in need of quality induction programs, citing the cost of induction programs to be prohibitive for districts in addition to new teachers feeling like induction is a “hoop to jump through” rather than an enriching learning experience. These sentiments from our high-need partner districts resemble that of research on induction programs, which have resulted in little empirical evidence to support the impact of induction programs on developing and retaining teachers (Glazerman et al., 2008; Ingersoll & Strong, 2011).

In order to better support new teachers, Cal Poly will create and implement a two-year induction plan (in consultation with high-need district partners and county offices of education) whereby recent program graduates will continue to be supported by our teacher preparation programs in order to promote higher rates of retention and K-12 student achievement. This induction model will engage new teachers in targeted professional growth via professional learning communities emphasizing empirically-based instructional practices and instructional interventions aligned to CCSS-ELA, CCSS-M, ELD, and NGSS. Co-teaching opportunities with

university faculty and instructional rounds (City, Elmore, Fiarman, & Teitel, 2009) will support new teachers in areas of technology integration, learning process and assessment of learning, and using data to drive instruction. In the interest of continuous improvement, Cal Poly will use teacher and student data to determine efficacy of credential programs and make program reforms based on areas for growth, drawing on an improvement science approach (Bryk, Gomez, Grunow, & LeMahieu, 2015).

Outcomes for Goal 3 will include the following:

- Outcome 3.1: Beginning in Year 2 (in partnership with existing induction programs and high-need districts), create and implement a two-year induction model for 25% of new teachers hired in high-need partner districts; annually increase to 100% participation of graduates hired in high-need partner districts by Year 5;
- Outcome 3.2: Attain a retention rate of 80% or higher for new teachers hired in local and high-need partner districts three years after date of hire and demonstrate an increase in teacher preparedness to implement empirically-based, effective teaching skills;
- Outcome 3.3: New teachers in the developed induction program will show 10% higher levels of K-12 student achievement than new teachers who did not participate in the program, as measured by Smarter Balanced state testing; and
- Outcome 3.4: Beginning in Year 2, annual data from statewide new teacher surveys (CSU-EdQ) will inform teacher credential program, resulting in 3 program courses reformed each year

Induction program activities Cal Poly will work with high-need partner districts to collaboratively develop a two-year induction model for program graduates and all new teachers. The induction program will include the formation of a committee of stakeholders to determine

the model (grounded in coteaching, coaching, and instructional rounds) and implementation of the program. The program will be piloted in Year 2 with one partner district and continuous improvement data will be collected and analyzed to measure the efficacy of the model (including survey and teacher observation data) before expanding to an additional partner district each year of funding. In addition, the induction program will be refined and revised based on continuous improvement data and in communication with high-need partner district input to best meet the priorities and needs of the K-12 students in each rural district. New teachers and faculty mentors will be compensated for their participation in the induction program. Dissemination of this model to other CSU campuses in Years 4 and 5 will provide additional support for new teachers statewide and ensure sustainability of practice beyond the project period. See the work plan in Appendix J for additional details regarding activities and milestones associated with the induction program.

GOAL 4: DEVELOP TEACHER LEARNING AROUND K-12 LITERACY SKILLS ACROSS THE SUBJECT AREAS (PARTICULARLY IN STEM AND COMPUTER SCIENCE) INCLUDING THE IMPLEMENTATION OF LITERACY INSTRUCTION AND ASSESSMENT IN ORDER TO PROVIDE INDIVIDUALIZED AND TARGETED INSTRUCTION WITH AN EMPHASIS ON ELD INTEGRATION.

Goal 4 objectives and outcomes In response to a preliminary local needs assessment (see Appendix C), all four high-need LEAs indicated a need for cross-curricular professional development, specifically linking science/math and literacy within the subject areas. Cal Poly will engage teachers and prospective teachers from high-need partner districts in sustained professional growth around literacy skills across the subject areas with an emphasis on STEM education. Teachers and prospective teachers will be supported via literacy coaches who will

engage in sustained, data-driven and classroom-focused professional development efforts emphasizing the essential components of reading instruction and diagnostic assessments in order to provide differentiated instruction as a means for addressing CCSS-ELA, CCSS-M, ELD, and NGSS. The coaching role and coaches will be selected based on practices illustrated in the research (Deussen, Coskie, Robinson, & Autio, 2007).

Additionally, Cal Poly faculty with literacy and ELD expertise as well as faculty from STEM content-areas will collaborate with literacy coaches and partner district teachers to develop and implement an observational checklist and literacy rubric to support research-based practice in district classrooms. Literacy practices to be emphasized in the created literacy rubric, curricular materials, and professional development will be determined through a thorough process including reference to *Implementing Evidence-based Literacy Practices Roadmap*, International Literacy Association Standards for Reading Professionals (2010), and attention to evidence-based practices (Foorman et al., 2016; Kamil et al., 2008; Kosanovic & Foorman, 2016).

Outcomes for Goal 4 will include the following:

- Outcome 4.1: By Year 3, develop an observation checklist and rubric for teaching literacy across the subject areas emphasizing essential components of reading;
- Outcome 4.2: In partnership with high-need partner districts, hire and train two literacy/ELD coaches each year to emphasize essential components of reading, ELD instruction, and data-driven assessment in order to provide individualized and targeted instruction for students;

- Outcome 4.3: Beginning in Year 3, annually provide two workshops and three literacy coaching sessions to train teachers and prospective teachers in high-need district partnerships in literacy across the subject areas; and
- Outcome 4.4: By Year 4 of the project, ensure 40% of teachers and prospective teachers in high-need partner districts utilize strategies for teaching literacy across the subject areas as measured by the developed literacy observation checklist and rubric

Literacy observation checklist and rubric. A primary outcome of Goal 4 will be the development of an observation checklist and rubric that can be used by literacy coaches to provide targeted feedback to teachers on their implementation of the essential components of reading instruction. Currently, Cal Poly's Danielson-Aligned Clinical Practice Observation Tool, while grounded in research-based instructional practices, does not include a focus on literacy instruction. In collaboration with literacy and bilingual School of Education and high-need partner district faculty, content area faculty in the College of Science and Mathematics and the Department of Computer Science and Engineering, and the Center for Advancement on Reading and Writing, Cal Poly will develop a literacy observation checklist and rubric to include explicit and systematic instruction in]

activities and milestones associated with developing the literacy rubric and hiring literacy

Sustained professional development on teaching literacy across the subject areas.

Another outcome aligned with Goal 4 is to create sustained opportunities and provide training for teachers and prospective teachers in teaching literacy across the subject areas including the development of curriculum. In order to achieve this outcome, Cal Poly literacy faculty and partnership literacy coaches will develop curriculum for elementary, secondary, and bilingual authorization programs to include specific trainings for teachers and prospective teachers on literacy instruction across the subject areas. Curriculum and school-site experience opportunities will be developed in collaboration with faculty from STEM and computer science content areas and in consultation with ELD faculty within the School of Education. In addition, partner district need will guide the content of the literacy workshops and continuous coaching. Participation in literacy components and projects will be tracked via attendance at ongoing professional development, literacy coaching logs, and collection of created disciplinary-literacy curricular materials. Integrated literacy professional development will also include novel engineering and MakerSpace. Revisions to the professional development will be made annually based on analyzed data from participant surveys and interviews. A gradual scale-up of services to high-need partner districts will occur, beginning Year 3 with one high-need partner district and scaling up to one to two partner districts thereafter. See the work plan in Appendix J for additional information about the literacy professional development (Goal 4).

The extent to which the proposed project demonstrates a rationale (as defined in 34 CFR77.1 (c)).

Our logic model (Appendix G) and work plan (Appendix J) identify key project components informed by research and evaluation findings that suggest that the project components are likely to improve relevant outcomes, demonstrating a strong rationale for our project. For example, the sustained professional development in STEM that is provided to prospective, new, master, and in-service teachers as a part of Goals 2-4 is grounded in research-based models underlying systemic reform (Wojnowski & Pea, 2013). Furthermore, Goal 4 of our project includes sustained professional development on the essential components of reading instruction including sustained workshops and follow-up literacy coaching sessions. Both the content and structure of the literacy workshops and the practices implemented by the literacy coaches will be selected based on practices illustrated in the research (Deussen et al., 2007) with attention given to evidence-based practices (Foorman et al., 2016; Kamil et al., 2008; Kosanovich & Foorman, 2016). Furthermore, the teacher mentoring that occurs as a part of the yearlong clinical experience, two-year induction model, and literacy coaching includes clear criteria for the selection of teacher mentors, high-quality training of mentors, structured observations, time for collaboration, and the promotion of empirically-based practice and scientifically-valid research.

The extent to which the goals, objectives and outcomes to be achieved by the proposed project are clearly specified and measurable.

All goals, objectives, and outcomes are specific and measurable. The outcomes allow for setting a baseline value and looking for improvements from there each year. Each outcome is also aligned with the three acceptable inputs (ratio, percentage, or value) for the annual performance report measures. Some of the measurement tools include a score on a standardized assessment (e.g., edTPA, Smarter Balanced), quantitative and qualitative feedback from the

Danielson-Aligned Clinical Practice Observation Tool, and data from the EdQ Center (a CSU-wide database providing teacher preparation programs access to ongoing surveys of current-year graduates, alumni, and employers of CSU-trained teachers). In addition, continuous improvement and faculty/partnership research will include interviews and survey-data to further measure progress to achieving project goals.

Our work plan (Appendix J) identifies measurable outcomes for each project goal and includes a table of activities, timeline, responsible parties, and milestones for each outcome. Our milestones are products or services provided with targeted numbers of participants impacted identified. Table 1 displays an excerpt from the work plan, Goal 1, with a focus on recruiting more STEM and computer science teachers.

Table 1: Excerpt from Cal Poly’s Work Plan (Appendix J)

Activity	Timeline	Responsible Parties	Milestone
Work with the Computer Science and Software Engineering department to add a computer science credential	10/2018 - 9/2022	Leadership team, Computer Science and Software Engineering department chair and faculty, & credential analyst	-Develop and implement survey by 12/2018 to determine the need/interest for this added credential -Submit the required materials to the California Commission on Teacher Credentialing (CTC) by 6/2020 -Develop the methods and seminar courses for computer science with approval from Academic Senate Curriculum Committee to include in 2021-2023 catalog by 9/2020 -Recruit a computer science faculty member to teach the methods and seminar courses by 6/2022 -Advertise the credential to prospective students and recruit, with target goal of 15 students by 9/2022 -Implement credential by 9/2022

The extent to which the proposed project is designed to build capacity and yield results that will extend beyond the period of federal financial assistance.

The long-term success of the project and continuing operations beyond the period of federal funding have been built into the work plan (Appendix J), budget, and program management plan.

We have strategically built into the budget a decline in requested funds in year five. With this decline, we will explore ways that services can continue to be provided with “matching” fund support from both high-need partner districts and the university. First, if partner districts find value in the services provided through the partnership, districts will be inclined to provide “match” allocations to maintain services. For example, if a partner district has funds to provide professional development to its teachers every Tuesday of the month, we could capitalize on this existing structure. Cal Poly could provide the professional development within this structure with partner district teachers compensated for their time by already-existing district funds. Similarly, conversations with partner districts during Years 3-5 of the grant will occur surrounding district re-budgeting to establish sustainable support of the partnership liaison positions beyond the federal funding.

Similarly, the School of Education at Cal Poly will engage in unit- and college-wide discussions around the reallocation of funds and redefining of key personnel roles (e.g., clinical practice supervisors, assessment coordinator). For example, a clinical practice supervisor’s job could be redefined to include one less yearly observation replaced with a professional development workshop to enhance their ability to provide high-quality mentoring

Our project also invests in people across the five years. Investing in people (e.g., clinical practice supervisors, master teachers, partner district administrators, university faculty) enables

us to develop skills that surpass the length of the project and continue throughout the individual's involvement in teacher preparation. By building capacity for clinical practice supervisors to provide quality coaching (for example), when funding is no longer available, clinical practice supervisors will still be able to implement the research-based mentoring practices they developed.

Our project work plan (see Appendix J) indicates a number of milestones that describe curriculum revisions and structures, sustainable services, and other features specifically intended to be in place for the continuation of activity beyond the period of funding. Examples of milestones include revised curriculum and institutionalized practices whereby curriculum is annually reviewed and revised to align with high-leverage practices and the needs of prospective teachers and high-need partner districts, online modules providing professional development to a variety of stakeholders, and a literacy rubric used to coach teachers on reading instruction and the teaching of literacy across subject areas. Not only will resources be developed that can continue to be implemented past the funding, but an infrastructure for collaboration and continuous improvement will have been established.

Finally, the executive council and partner team meetings will have a standing agenda item to discuss issues of sustainability. In addition, collaboration with other TQP awardees through the TQP-TA Center will help to generate ideas regarding building capacity and sustainability.

The extent to which the proposed project represents an exceptional approach to the priority established for this competition.

Our proposed project represents an exceptional approach to Absolute Priority 1: Partnership Grants for the Preparation of Teachers. Cal Poly's teacher preparation programs are

unique in that we are housed in the College of Science and Mathematics. This unique organizational structure, our commitment to cross-disciplinary collaboration, and our reform efforts grounded in STEM expertise on our campus position us to make transformative changes to teacher preparation and the recruitment and training of STEM teachers.

Furthermore, our vision for reform is grounded in deliberate and sustainable partnerships valuing the individual needs of each partner district and recognizing the mutual benefits to thought partnering and working collaboratively to transform teacher preparation. Partnership components include collaborating on partner district hiring needs to inform credential program admission decisions, creating a shared vision and goals for the project, ensuring coursework alignment with the clinical experience, communicating frequently with structured time spent in schools, among others (Luczak et al., 2016).

Furthermore, our proposed project creates continuity across the teacher preparation continuum, developing pathways from community colleges to an education minor at Cal Poly to a rich, yearlong clinical experience with continued support throughout induction and the duration of one's teaching career.

Quality of the Management Plan (25 points)

We envision broad and significant improvements in teacher preparation for prospective, new, mentor, and in-service teachers; four county offices of education; four high-need rural LEAs; and four colleges and two centers on campus. In recognition of the scope and complexity of this undertaking, we have developed a project management organization and structure intended to achieve all of the goals and objectives of the project and to meet all statutory reforms and improvements stipulated in the teacher quality partnership grant application (see the organization chart for project management in Appendix J).

Leadership team. Dr. Megan Guise, Full Professor of English Education at Cal Poly, will serve as **Project Investigator** and chair of the leadership team. Dr. Guise will be responsible to the U.S. Department of Education for the achievement of project goals and objectives delineated in the work plan (found in Appendix J) and the prudent use of resources to achieve project ends. Other members of the leadership team will include two **Co-Principal Investigators** – Dr. Tanya Flushman, Associate Professor of Elementary Literacy Education, and Dr. Briana Ronan, Assistant Professor of Bilingual Education. In addition, Ms. Sarah Hegg will serve as **Project Director**.

Prioritizing the partnership essential to reforming teacher preparation, our leadership team also includes representatives from our high-need partner districts. All high-need district partners will be represented by a **partnership liaison**, designated by their superintendent, who's teaching assignment will include collaborating with the university-based partnership liaison and supporting the implementation of the partnership. In addition, **district lead** (i.e., administrator from each partner district) and **district HR representative** will also be members of the leadership team. The leadership team will meet **quarterly** while the core leadership team (PI, Co-PIs, and Project Director) will meet **weekly**.

The four primary project goals will be divided among the PI and Co-PIs based on expertise and interest in order to have a designated leader to ensure the accomplishment of each goal. For example, Dr. Megan Guise will lead Goal 2 (partnerships driven by curriculum & clinical experience reform) and Goal 3 (induction), capitalizing on Dr. Guise's expertise in curriculum development and published research on coteaching and mentoring programs to support new teachers. Dr. Briana Ronan will lead Goal 1 (recruitment) as an expert on bilingual education and member of the university curriculum committee. Dr. Tanya Flushman will lead

Goal 4 (literacy professional development with a focus on integrated literacy in STEM), drawing on her expertise teaching and researching literacy across the subject areas.

Executive council. Dr. Kevin Taylor, Director of the School of Education, will chair the executive council as it oversees the project, evaluates its effectiveness, and determines changes to be made in meeting goals and objectives of the work plan. The executive council includes the members of the leadership team; Director of the School of Education, representatives from four colleges/departments and two campus centers; and a representative from each of the four county offices of education. The executive council manifests the partnership, and it includes all key constituencies in the project.

The executive council will meet at least **twice each academic year** to review the progress of the grant and provide input to the annual report to be submitted to the U.S. Department of Education, which will include GPRA performance measures and Higher Education Act Section 204(a) objectives and measures. At each session, the executive council will receive reports of progress from (1) each high-need district partner – reporting on K-12 student success measures, (2) WestEd – the external evaluator, and (3) the School of Education Assessment Coordinator. Based on this information, the executive council will provide direction to the leadership team and engage in data-driven strategic planning. A standing agenda item for all executive council meetings will be building capacity and sustainability.

Partnership team meetings Valuing the individual needs and voice of each high-need partner district, **monthly partner district meetings** will be held. Representatives at these meetings will include the leadership team – including the district lead and partnership liaisons (district and university) – as well as three teachers (prospective, master, and new) from the high-need partner district. Monthly meetings with the partnership team will focus on grant initiatives,

evaluation of the effectiveness of these initiatives, impact on student and teacher learning, and strategic planning for continuous improvement.

Data management team. The data management team includes key School of Education personnel, such as the credential analyst and assessment coordinator, personnel not funded by the grant. The data management team will meet with the leadership team **quarterly** to determine a data collection plan to inform continuous improvement. In addition, reports from the external evaluator (WestEd) will contribute to data collection and program improvement decisions.

The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.

A detailed project work plan (see Appendix J) has been developed that outlines project goals and outcomes with clearly defined activities, responsibilities, timelines, and milestones. The work plan will be reviewed bi-annually by the executive council to collaboratively identify progress made and revisions needed.

The work plan includes the careful sequencing of project activities, distributing activities across all five years of the grant. In addition, clearly defined responsibilities are evident through the decision to have the PI and Co-PIs lead certain project goals while other project contributors have clear roles (e.g., job description for literacy coaches, partnership liaisons). Furthermore, the work plan includes timelines that identify a date range for completion (e.g., 4/2019-10/2019) for each activity (e.g., Create training materials for hired literacy/ELD coaches) with milestones identifying clear products or services created with specific deadlines within each timeframe identified to ensure success (e.g., Training session modules completed by 9/2019; literacy/ELD coach handbook created by 9/2019; training on the use of the literacy across the subject area

observation tool completed by 10/2019 with ongoing support). Through this careful planning, we are confident in our ability to achieve and surpass the objectives of the proposed project.

The potential for the incorporation of project purposes, activities, or benefits into the ongoing program of the agency or organization at the end of federal funding.

One goal of the project is to institutionalize an approach to teacher preparation that extends beyond the federal funding. For example, the development of an education minor – a recruitment strategy and an approach to providing rich, empirically-based field experiences to undergraduates – will be supported past federal funding through the School of Education’s support of an education minor advisor and the creation of curriculum. Furthermore, project milestones include the development and implementation of resources that will surpass the federal funding; a few examples include (1) pathway advising materials for community colleges, (2) reformed curricula, (3) computer science credential, (4) online bilingual education program, (5) research-based rubrics for coteaching and teaching literacy, among others.

Similarly, by cementing deliberate and sustainable partnerships with high-need partner districts that are mutually beneficial, partner districts will find value in this partnership and district and university funding can be reallocated in order to continue these partnerships post federal funding. For each goal of the work plan, Appendix J, an activity related to sustainability has been identified. For example, we will conduct a stakeholder assessment for sustainability of the induction model, and a sustainability plan will be developed so that the induction model is adopted as district practice.

The adequacy of support, including facilities, equipment, supplies, and other resources, from the applicant organization or the lead applicant organization.

The support for this project exceeds adequacy, drawing on state-of-the-art facilities and resources at Cal Poly. First, the layout of Cal Poly facilities encourage collaboration and Cal Poly's motto of "learn by doing," supporting hands-on, interactive learning. Equipment at Cal Poly includes fully-equipped STEM labs, cutting-edge technology, and a new School of Education technology lab that allows prospective teachers to gain experience with technology integration. Program participants have access to Swivel cameras and EdThena (a secure online platform for viewing, collaborating, and providing feedback on recorded classroom teaching) to capture classroom instruction and allow for critical reflection, mentoring, and feedback grounded in classroom data. Zoom video conferencing available to all program participants will enable communication, collaboration, and professional development to rural and remote high-need partner districts. In addition, Dean Wendt from the College of Science and Mathematics states in his letter of support (see Appendix I) that Cal Poly is able to match the 1:1 required percentage up to \$1,000,000 annually beginning Year 2 of the grant.

Quality of the Project Evaluation (20 points)

WestEd, the proposed external evaluator, will use a mixed-methods approach (Teddlie & Tashakkori, 2008) to evaluate our Teacher Quality Reform providing both objective- and performance-driven data. WestEd will collect and analyze quantitative data on GPRA, HEA, and our Teacher Quality Reform performance measures; on the proposed project goals, objectives and outcomes; and for a Quasi-Experimental Design (QED) assessing whether our Teacher Quality Reform results in improved teacher and student outcomes relative to traditional teacher preparation programs. WestEd will compare findings on performance measures for program participants 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.

The extent to which the methods of evaluation will provide valid and reliable performance 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. Table 2 presents an aligned plan that includes the project goals and activities 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.

Table 2. Cal Poly’s Teacher Quality Reform Evaluation Plan

Project Goals and Activities	Evaluation Methods and Sources
Goal 1: <i>Create pathways to teaching for students from underrepresented populations and teacher shortage areas</i>	
<ul style="list-style-type: none"> • Needs assessment to determine issues that impact individuals from underrepresented populations and teacher shortage areas from pursuing a career in teaching and district need • Recruitment plan and pathways created in consultation with recruitment specialist, Cal Poly program faculty, campus centers (e.g., CESAME, OUDI), high-need partner district leaders and HR, and community colleges • High-need partner district representation in credential program admission decisions • Development of education minor, as a recruitment strategy, grounded in early field experiences • Establishment of computer science pathway and credential • Creation of targeted recruitment marketing materials 	<ul style="list-style-type: none"> • Program data on total number applied, number accepted, number enrolled, subject area of licensure, number of candidates who graduate, including demographic data to identify prospective teachers from underrepresented groups and those with STEM and education-related backgrounds • Program and district HR data on hiring of completers, subjects taught, placement in high-need areas and schools • Performance on edTPA (number of attempts at passage), and observation results using the Danielson-Aligned Clinical Practice Observation Tool • Surveys of prospective teachers on motivations for participating in the program and teaching as a career and attitudes about teaching in high-need subject areas • Interviews with district partners, faculty, center staff, and program leadership on recruitment efforts • Reviews of program documents and recruitment materials
Goal 2: <i>Establish deliberate and sustaining partnerships grounded in reformed curriculum and clinical experiences</i>	
<ul style="list-style-type: none"> • Partnership model: (a) pod placements with multiple prospective teachers across 3 credential programs who coplan integrated lessons; (b) coteaching with focus on collaboration and data-driven reflection; (c) professional development for master teachers and clinical practice supervisors in mentoring, coteaching, and data-driven instruction; and (d) partnership liaisons to foster communication and field-site alignment with credential coursework 	<ul style="list-style-type: none"> • Performance on in-program assessments including edTPA data, RICA data, and observation results using the Danielson-Aligned Clinical Practice Observation Tool • Review of initial and revised program syllabi in elementary secondary, & special education programs

Project Goals and Activities	Evaluation Methods and Sources
Goal 2: <i>Establish deliberate and sustaining partnerships grounded in reformed curriculum and clinical experiences</i>	
<ul style="list-style-type: none"> Faculty embed empirically-based practices from the Danielson-Aligned Clinical Practice Observation Tool into courses to ensure alignment between coursework and clinical experience and in alignment with Absolute Priority 1 Yearlong literacy professional development Research on coteaching & creation of coteaching implementation rubric 	<ul style="list-style-type: none"> Surveys of prospective teachers on the quality of the preparation activities (e.g., pod placements, coteaching) and perceived self-efficacy for teaching special education, literacy, and using data to improve instruction Interviews with prospective teachers, district partners, partnership liaisons, master teachers, clinical practice supervisors, Cal Poly faculty, and program leadership on specific components of the preparation program and partnership development Reviews of program documents and coteaching rubric materials
Goal 3: <i>Develop a two-year induction program grounded in high-quality mentoring, partner collaboration, professional development, and data-driven reflection</i>	
<ul style="list-style-type: none"> Two-year induction plan to support recent program graduates hired in high-need partner districts Professional learning communities, workshops, and coaching emphasizing high-leverage instructional practices and instructional interventions aligned to CCSS-ELA, CCSS-M, ELD, and NGSS Coteaching and instructional rounds with Cal Poly faculty 	<ul style="list-style-type: none"> Retention data from program and district HR departments Data from surveys of Program Completers, Year One Teachers, and Employers of Year One Teachers (EdQ) Student state assessment and pre-post benchmark assessments Surveys and interviews with program completers on the quality of the retention efforts Interviews with district partners, partnership liaisons, Cal Poly faculty, and program leadership to understand the development and implementation of retention efforts
Goal 4: <i>Provide sustained, collaborative professional development grounded in evidence-based instructional strategies and the essential components of reading instruction to support implementation of literacy across the subject areas and CCSS-ELA, CCSS-M, ELD, and NGSS</i>	
<ul style="list-style-type: none"> Sustained, data-driven and classroom-focused professional development emphasizing reading instruction and assessing students in order to provide differentiated instruction as a means for addressing CCSS-ELA, CCSS-M, ELD, and NGSS Develop observation checklist and rubric to be used by literacy coaches to provide targeted, evidence-based feedback Literacy coaches support new and in-service teachers 	<ul style="list-style-type: none"> Professional development attendance data Literacy coaching logs Literacy rubric ratings to assess quality of implementation Surveys of and interviews with program participants on the quality of the professional development and use of learnings Interviews with district partners, literacy coaches, Cal Poly faculty, and program leadership on implementation of professional development Student state assessment in reading and math, ELD data in reading and math

Project implementation WestEd, in collaboration with Cal Poly, will collect formative data on project implementation, including the collaboration among partners, prospective teacher recruitment, induction support, and professional development design and implementation. A clear understanding of our Teacher Quality Reform will enable WestEd to suggest ways in which outcomes may be related to specific 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 program’s well-articulated logic model (see Appendix G); (2) reviewing project documents and meeting often with leadership to ensure an up-to-date and complete picture of the relevant features of our Teacher Quality Reform context; and (3) assessing the extent to which the project components are being implemented

through surveys and interviews with relevant stakeholders, including master teachers, prospective teachers, district partners, partnership liaisons, principals, clinical practice supervisors, Cal Poly faculty, literacy coaches, 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. WestEd 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.

The extent to which the methods of evaluation are thorough, feasible, and appropriate to the goals, objectives, and outcomes of the proposed project.

The comprehensive evaluation approach is aligned to the four overarching goals of our Teacher Quality Reform and will utilize qualitative and quantitative data from a variety of sources to strengthen the validity of 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 USDE 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 the Reform.

Cal Poly's Teacher Quality Reform Goal 1: *Recruit teachers from underrepresented populations and teacher shortage areas (STEM fields, special education, agriculture, bilingual education) so that eligible partnerships can hire highly-qualified teachers.*

Evaluation questions related to implementation and impact include: How and to what extent is Cal Poly's Teacher Quality Reform: (1) encouraging diverse candidates to apply to and enroll in its teacher preparation programs? (2) creating a pathway to certifying highly-qualified teachers prepared to teach in high-need shortage areas (including STEM, special education, agriculture, and bilingual education)? and (3) placing prospective teachers in these high-need subject areas in their partner districts?

Recruitment and enrollment. To assess the effectiveness of our recruitment initiatives, track progress on recruitment and enrollment in the program, and the newly created education minor, WestEd will assess project measures on recruitment targets; selection rates (total number applied, number accepted, number enrolled); prospective teachers from underrepresented groups; prospective teachers with STEM and education-related backgrounds (based on prior employment, career path, major, and granting institutions); prospective teachers' declared subject matter preparation area; prospective teachers' motivations for participating in the program and teaching as a career; and prospective teachers' attitudes about teaching in high-need subject areas. WestEd will collect program administrative data and documents and conduct annual surveys of prospective teachers to assess these areas and conduct interviews with district

partners, faculty, center staff, and program leadership on recruitment plan development and implementation.

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 completions* and *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* by obtaining data from Cal Poly on degrees and specific teaching certifications (including authorized subject matter and grade spans) obtained by prospective teachers and dates awarded, to assess whether they were obtained within the measure-specified timeframe. To assess passing of initial and necessary certification/licensure assessments, WestEd will obtain prospective teachers' scores on the state licensure exams, including the CSETs and edTPA, and from program data and documents (as the programs are responsible 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, WestEd will collect results from the edTPA data on number of attempts by candidates directly from the program and observation results as captured by the Danielson-Aligned Clinical Practice Observation Tool.

Placement. 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 LEA, a process which will be formalized with data sharing MOUs between WestEd and Cal Poly and each participating district. The HEA also requires measures regarding subject areas taught and placement in high-need areas and schools. Specifically, WestEd will assess the percentage of highly-qualified teachers: (1) *hired by the high-need LEAs participating in the eligible partnership* (40% target); (2) *who are members of underrepresented groups* (e.g., African-American, Hispanic/Latino, or Native Hawaiian or other Pacific Islander; 10% target); (3) *who teach high-need academic subject areas* including reading, mathematics, science, and foreign language, including less commonly taught languages and critical foreign languages (35% target); (4) *who teach in high-need areas* including special education, agriculture, and language instruction educational programs for limited English proficient students (20% target); and (5) *who teach in high-need schools* (40% target), *disaggregated by the elementary* (42% target) *and secondary levels* (50% target) in the partner districts. All related data will be collected annually from the preparation program and surveys of its completers and will be verified with data from district HR departments.

WestEd 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.

Cal Poly's Teacher Quality Reform Goal 2: *Create deliberate and sustaining partnerships with high-need partner districts in order to transform the curriculum and clinical experiences of our teacher preparation programs.*

Evaluation questions related to implementation and impact include: How and to what extent is Cal Poly's Teacher Quality Reform: (1) preparing prospective teachers to be effective

teachers through the partnership model, which includes coteaching and professional development? (2) improving prospective teacher knowledge and skill in research-based instructional strategies and other stipulated reforms? and (3) developing sustainable partnerships with high-need schools in local and high-need districts surrounding Cal Poly?

Teacher preparation. Measures assessed related to the teacher preparation experience 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*, HEA (i) *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 (ii) *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: prospective teachers' specific subject matter preparation area; quality of preparation activities (i.e., the extent to which the partnership model, pod placements, coteaching, and other preparation components contribute to prospective teacher perceived self-efficacy for teaching special education, literacy, and using data to improve instruction); teaching practices learned as measured by pedagogical methods employed (e.g., captured by the Danielson-Aligned Clinical Practice Observation Tool); and the development of partnerships with districts. Data for the measures will be collected through Cal Poly's archival program data, including data on edTPA and RICA passage rates; a review of program documents, including district partnership agreements and initial and revised program syllabi for the elementary, secondary, and special education programs; surveys of prospective teachers; and interviews with master teachers,

clinical practice supervisors, district partners, partnership liaisons, principals, Cal Poly faculty,

Cal Poly's Teacher Quality Reform Goal 3: *In collaboration with partner districts and county offices of education, implement a two-year, formalized induction program that includes high-quality mentoring, structured observations, instructional rounds, and professional development in order to promote teacher retention and K-12 student achievement.*

Evaluation questions related to implementation and impact include: How and to what extent is Cal Poly's Teacher Quality Reform: (1) supporting and helping retain teachers in high-need districts? and (2) improving teacher effectiveness and achievement outcomes of students taught by program completers?

Retention. WestEd will assess measures of retention, specifically, *completer retention in the first three years of a teacher's career* (80% target), 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* 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* WestEd 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, WestEd will collect data directly from partner districts' HR departments on program completers' teaching placements to determine the teachers retained in teaching from each cohort. WestEd 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. To provide context around the retention data and understand the development and implementation of retention efforts, WestEd will conduct surveys of and interviews with program completers on the quality of the retention efforts and interviews with district partners, partnership liaisons, Cal Poly faculty, and program leadership to understand the development and implementation of retention efforts.

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*, WestEd will calculate the learning growth of students taught by program completers, as well as select teacher outcomes resulting from participation in our Teacher Quality Reform, using a QED. In the final year of the evaluation, pending appropriate comparison data, WestEd will implement a QED to address whether our Reform model is more effective at preparing teachers than traditional teacher preparation program pathways. Waiting until the final year of the evaluation will allow WestEd to pool data from all available appropriate cohorts to increase the 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 edTPA; 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 and pre-post common benchmark assessments.

To facilitate acquisition of comparison teacher data for a QED, WestEd 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.

Cal Poly’s Teacher Quality Reform Goal 4: *Develop teacher learning around K-12 literacy skills across the subject areas (particularly in STEM and computer science) including the implementation of literacy instruction and assessment in order to provide individualized and targeted instruction with an emphasis on ELD integration.*

Evaluation questions related to implementation and impact include: How and to what extent is Cal Poly’s Teacher Quality Reform: (1) improving the knowledge of new teachers and in-service teachers about the essential components of reading, ELD instruction, and data-driven assessment? (2) engaging participants to utilize strategies for teaching literacy across subject areas? and (3) improving achievement outcomes of students taught by program completers?

Professional development. To assess the efforts of the program in improving teacher learning around K-12 literacy across the subject areas, WestEd will collect data on participation in professional development offerings, understanding and use of data for improvements, and application of the critical components of reading and ELD instruction across subject areas. The data will be collected through literacy rubric ratings; professional development attendance data; literacy coaching logs; surveys of and interviews with program participants on the quality of the professional development and use of learnings; and interviews with district partners, Cal Poly faculty, literacy coaches, and program leadership on implementation of professional development.

Student learning. As part of the QED informing GPRA *Performance Measure 6: Student Learning*, WestEd will calculate the learning growth of students taught by program completers of Cal Poly's Teacher Quality Reform, using a QED. For goal 4, student growth will be measured using end-of-year state assessments in reading and math, ELD data in reading and math, and pre-post common benchmark assessments.