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## Project Narrative

### **Absolute priorities addressed:**

**Absolute Priority 1: Partnership Grants for the Preparation of Teachers, and;**

**Absolute Priority 2: Partnership Grants for the Establishment of Effective Teaching**

### **Residency Programs**

### **Competitive preference priorities addressed:**

#### **CPP 1: Promoting Science, Technology, Engineering, and Mathematics (STEM) Education**

STEM Education is infused in Goal 1 of our project, as seen in the Workplan, Appendix H. For Goal 1, Reform of Teacher Education, Objective 1.1 Includes Next Generation Science Standards (NGSS) in Science, Technology, Engineering and Math (STEM) education courses and related field experiences and measures *that develop STEM discipline-specific pedagogical instruction, and explicit instruction in the interdisciplinary connections between learning sciences and STEM instruction*. In Objective 1.3, student early field experiences at California State Polytechnic University (Cal Poly), later to be implemented at California State University - Monterey Bay (CSUMB), will include NGSS and CCSS-Math content and pedagogy from Cal Poly's Center for Excellence in STEM Education (CESAME) activities, and *dedicated research or laboratory experiences, particularly the STAR program, that sends pre-service students to federal research labs* (see Appendix G, letter from 100Kin10).

In Goal 2, Objective 2.1, Recruitment priorities for teacher candidates, especially for the rural residency program of CSUMB, will be given to STEM students who have strong content knowledge. CSUMB and Cal Poly faculty hired/appointed for this project to ensure STEM content preparation include access to sequenced courses equal to that of STEM majors not in

teacher education. In Goal 2, Objective 2.2 cohorts of teacher candidates in STEM subjects will be connected through Cal Poly CESAME to forums, blogs, discussion groups and conference participation in the use of effective instruction to meet the CCSS-Math. In Objective 3.2, CESAME programs of support in STEM education include extensive professional development and new teacher training in STEM education. For Goal 4, professional development, both universities will work with district curriculum leaders in building capacity to assist co-teachers, inductees, and mentors of new teachers with effective strategies for meeting the NGSS, with an emphasis on meeting needs in rural and remote schools.

## **CPP 2: Implementing Internationally Benchmarked, College- and Career-Ready Elementary and Secondary Academic Standards**

California has adopted the CCSS as the state’s internationally benchmarked college and career readiness standards and these standards will be infused in all goals and many objectives of our Work Plan and Timeline. CCSS are infused within Goal 1, Objective 1.1 of the work plan, that effective pedagogy and curriculum for meeting these standards in Language Arts, English, Subject-matter Literacy, and Mathematics *are included in relevant methods of instruction courses for translating standards into classroom practice*. In Goal 2, Objective 2.2 cohorts of residents, inductees, and co-teachers in STEM subjects will be connected through Cal Poly CESAME to forums, blogs, discussion groups and conference participation *in the use of effective instruction to meet the CCSS-Math*; and candidates and new teachers in the humanities will be similarly connected to each other around issues of teaching to the CCSS in reading, language arts, and literacy.. In Goal 4, Professional Development, *Cal Poly will take the lead in building capacity with CSUMB to provide on-going professional development for all teachers accountable for meeting the CCSS*, with commitments to this mission expressed in support

letters from Dean Marsha Moroh, Dean of CSUMB’s Science and Math college, and CSUMB President Eduardo Ochoa.

### **Vision for Reform**

California State University - Monterey Bay (CSUMB) and its partner university, California Polytechnic State University - San Luis Obispo (Cal Poly), recognize the need to build coherence and consistency in what is now a fragmented and disjointed system of teacher preparation. In our rural and remote area of central California we see a sequence of disjointed teacher preparation experiences that fail to develop a continuum of professional growth grounded in a shared set of effective instructional practices.

Values and beliefs about teacher preparation held by university faculty are viewed skeptically by school leaders who tell new teachers to focus on practical issues in “the real world.” This fragmentation has not served prospective teachers well and it is woefully inadequate for meeting the challenges posed by the CCSS and the NGSS adopted by the California State Board of Education.

#### Development of a coherent continuum of teacher preparation

Across the country we see nascent efforts to develop a common set of effective instructional practices similar to those found in medical education or engineering education, but consensus on one comprehensive set of practices remains elusive. On the east coast, faculty at Harvard University and the University of Virginia have developed Measures of Effective Teaching (MET) (2013) that focus on the teacher’s relationship with students. In California, Stanford University and the University of California system developed the Performance Assessment for California Teachers (PACT, now becoming edTPA (2006)), a set of practices that focus on instructional planning, teaching, and assessing, but bearing little relationship to the

core values of MET. Many of the rural and remote school districts in our partnership have embraced the teaching strategies of one or more proponents of a set of practices, including explicit direct instruction (Hollingsworth & Ybarra, 2009), the SIOP model of Language Development for English Language Learners (J. Echeverreia, M. Vogt & D.Short, 2007), A Framework for Teaching (C. Danielson, 2004), or Gradual Release of Responsibility (D. Fisher and N. Frey, 2014). Unfortunately, none of these approaches is consistently developed in the continuum of teacher preparation from undergraduate early field experiences through the credential program and into teacher induction.

CSUMB, Cal Poly, three county offices of education and ten school district partners will reform teacher education by building coherence and consistency from one level of teacher preparation to the next through the selection of a set of effective teaching practices well suited to the place-bound, low-income, and limited English proficient students that characterize our shared service region. These practices will include classroom culture, instructional planning for the new standards, effective teaching strategies, assessment, reading and literacy instruction, and interventions described in the reform elements stipulated in Absolute Priority I. They will be developed for effective beginning practice at the university, further enhanced during the induction experience in schools, and mastered through continuing professional development.

#### Conducting research to enhance the co-teaching model of clinical experience

CSUMB and Cal Poly will reorganize and reform their pre-service programs in keeping with the recommendation of NCATE's Blue Ribbon Panel Report, *Transforming Teacher Education Through Clinical Practice*, as we further develop the effectiveness of the co-teaching model of clinical practice in the context of a full-year field placement. We will collaborate in organizing our teacher preparation curricula around the field experience under the guidance of

CSUMB where research on co-teaching effectiveness is under way. Cal Poly will lead research in the implementation of co-teaching within a pre-service clinical experience and its impact on K-12 student success.

Analyze K-12 student success measures to guide reforms in our programs

As we work with our partners in building coherence in the teacher education continuum, K-12 student success will guide our reform efforts. Through support from our data management and reporting partner, iResult LLC, we will examine K-12 student success during undergraduate early field experience, in our co-taught clinical placements, during new teacher induction, and during professional development. We will use K-12 student success measures and data from performance assessments in clinical settings to further develop our co-teaching model and improve campus coursework.

Develop collaboration strategies to serve rural and remote districts between our universities

One hundred and forty miles separate CSUMB from Cal Poly. Rural school districts in the service area report extreme difficulty in attracting teachers, retaining teachers, and arranging professional development experiences. CSUMB and Cal Poly will plan and implement new staffing and service provision collaborations for early field experiences, co-teaching supervision and support, new teacher induction, and professional development with a focus on STEM education, Common Core State Standards, and Next Generation Science Standards. These new arrangements will serve as a model for other universities seeking answers to the challenging problem of preparing and supporting teachers for rural and remote schools.

**Project Significance (15 points)**

The proposed project will build local capacity to provide, improve, or expand services that address the needs of the target population.

Preliminary research conducted at St. Cloud State University in Minnesota (2010) suggests that *the co-teaching model improves K-12 student performance in the classrooms where student teachers are placed*. Their research also suggests that conventional student teaching practices do not benefit, and may actually impede, academic performance of K-12 students. As we expand and permanently install the co-teaching model of clinical practice, pre-service teacher preparation at our universities will become an established service contribution to our high-needs schools that will contribute to K-12 student success.

*A coherent teacher preparation continuum that develops a set of high-leverage effective teaching practices with clear operational definitions and increasing expectations for performance in the successive stages of the continuum will prepare teachers effectively, efficiently, and result in improved teaching in our shared service region of rural school districts.*

The proposed project will result in system changes and improvements

*The collaboration between CSUMB and Cal Poly will result in improvements in teacher education for rural, remote school districts located far from and between our two campuses.*

Neither university, acting on its own, can provide the staffing and logistical infrastructure to meet the needs of the rural, remote districts between our two campuses. This project will serve as a model for the other 21 universities in the CSU system, many of which have rural and remote schools that lie between them (see CSU system information sharing in the evaluation plan). *Collaboration between the higher education partners will bring improved services in the teacher preparation and support continuum to rural and remote school districts located between their campuses.* These arrangements will result in logistical improvements in the provision of support services and expense sharing in rural settings with the goal of operating a high-quality teacher preparation continuum in rural, remote schools. This model will provide a

solution for rural and remote schools that are required to meet the CCSS and the NGSS. *At CSUMB and Cal Poly, the co-teaching model will be researched and enhanced resulting in a more powerful model of clinical practice that also provides exemplary education in classrooms where English language learners, students of low literacy, students who are gifted and talented and other students with exceptionalities are co-taught.*

The project will prepare personnel for fields in which shortages have been demonstrated.

As we address competitive preference priorities I and II, we will be developing the knowledge and skills of teachers in subject matter and new pedagogies (emphasizing STEM education), and we will develop the capacity of rural schools to meet the CCSS and NGSS. At meetings with superintendents of all partner districts, and in their response to a needs assessment survey, the areas of need identified most frequently and as most severe were the following: (1) meeting the needs of English language learners, (2) filling “hard to staff” science subjects in physics, chemistry, and geology, (3) supporting unique needs of students with disabilities, and (4) equipping district teachers to address CCSS, particularly in math. The areas of need cited most frequently by the most remote school districts is best expressed by the statement of one superintendent: “areas difficult to fill: math, math and math” (see Appendix H for similar statements of need obtained from local school leaders). As Cal Poly works with CSUMB to staff and operate a professional development mission in STEM at CSUMB, both universities, working together, will be resourced to meet the identified needs within the K-12 system. *CSUMB, guided by Cal Poly’s CESAME faculty and staff, will implement a similar center at its campus to meet and support K-12 STEM education needs.* A letter of commitment from Cal Poly’s Dean of the College of Science and Mathematics is included in the appendix of this application.

## Quality of the Project Design (45 points)

### CSUMB and Cal Poly will meet the needs of rural and remote schools between their campuses

CSUMB and Cal Poly will work with 10 school districts in the rural and remote settings that stretch from the Salinas Valley east of the Monterey peninsula for 200 miles to Santa Maria, in rural Santa Barbara County. One additional qualifying district in Santa Cruz County will also participate. The table in Appendix A shows these high-need qualifying districts, the number of teachers to be served, and the number of students to be served in each district.

**Figure 1 - Partnership Service Area**



The four counties within the rural and remote region of CSUMB and Cal Poly serve children of Mexican heritage who are place-bound by poverty and low-wage agricultural employment. In Monterey County, only 4% of the adult population holds a bachelor's degree. Twenty-eight percent of the families in San Luis Obispo County survive on less than \$25,000 per year. In Santa Maria, located in northern Santa Barbara County, one in five families is living in poverty as defined by the U.S. Census. Teachers working in rural, remote schools between

CSUMB and Cal Poly do not have access to the high-quality professional development needed to meet the CCSS and NGSS. *There is no four-year institution of higher education within these rural, remote areas between Cal Poly and CSUMB, so it is incumbent upon our campuses to address their identified needs.*

**Table 1.** Student scoring at proficient/advanced levels - 2012/13 CA. STAR Results

<b>Subject</b>	<b>Monterey County N=54,538</b>	<b>Santa Barbara County N=49,988</b>	<b>San Luis Obispo County N=25,859</b>
Mathematics	33%	38%	48%
Science	38%	45%	51%
Language Arts	50%	58%	69%

**Description of the Program**

Our partnership has the capacity and resources to meet project goals and objectives.

GOAL 1: ADDRESS ABSOLUTE PRIORITY I PARTNERSHIP GRANTS FOR THE PREPARATION TO TEACHERS: REFORM TEACHER PREPARATION AT CAL POLY AND CSUMB TO INCLUDE IMPROVEMENTS IN COURSEWORK AND CLINICAL EXPERIENCE ACROSS THE PREPARATION CONTINUUM FROM UNDERGRADUATE EARLY FIELD EXPERIENCE THROUGH INDUCTION

Objective 1: Improve undergraduate early field experiences and post-baccalaureate teacher preparation curriculum for all preliminary credential programs at Cal Poly and CSUMB, with an emphasis on STEM education in identified high need areas. Programs will adopt reforms in keeping with 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 teacher preparation continuum.

Additional elements include co-teaching, and instructional practices that translate learning expectations of the Common Core State Standards (CCSS) and Next Generation Science Standards (NGSS) into high quality classroom practice. All reforms will support increased time and quality during the clinical experience affecting 600 future elementary teachers (500 Cal Poly, 100 CSUMB), 600 future secondary teachers (400 Cal Poly, 200 CSUMB) and 320 future special education teachers (120 Cal Poly, 200 CSUMB).

### **Absolute Priority I: Required Reforms**

Each of the required reforms for pre-baccalaureate preparation programs will be included in all pre-baccalaureate and fifth year credential programs at Cal Poly and CSUMB, including the new rural Residency program at CSUMB. Each of these is addressed below.

**(1)(2)(i) Reform elements: Implement teacher preparation program curriculum changes that improve, evaluate, and assess how well all prospective and new teachers develop teaching skills using empirically-based practice and scientifically valid research about teaching and learning. Prospective and new teachers will understand and implement research-based teaching practices in classroom instruction and have knowledge of student learning methods.**

CSUMB and Cal Poly will call upon strong faculty resources across their institutions to train and update colleagues in math, science, special education, multiple subjects (with an emphasis on STEM fields and the CCSS) and other teacher education programs to understand and convey to their teacher candidates empirically based practice and scientifically valid research and its

applicability to teaching in rural schools in classroom 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.

Teacher education faculty will produce course notes, update syllabi, and adopt curriculum resources supported by empirically based practice and scientifically valid research, student learning methods and their applicability to teaching in rural schools in classrooms. Faculty will also develop appropriate formative and summative assessments of candidate knowledge and understandings of empirically based practice and scientifically valid research that will be a part of the outcome measures used by our external evaluator to assess the extent to which prospective and new teachers can apply better strategies and high quality research to improved teaching practices. This will include the edTPA required of prospective teachers for licensures.

Following faculty training and curriculum development, prospective math, science, multiple subject and other teachers will attend classes arranged around co-teaching experiences where they will demonstrate that they understand and can apply empirically based practice and scientifically valid research and its applicability to teaching in rural schools in classroom with limited English proficient, poor, and rural students. They will also know, and be able to teach to, student learning methods seen in these populations.

Courses of study, particularly those that support teacher candidate growth and development of skills during the year-long practical training experience and the CSUMB Rural Teacher Residency, will convey to teacher candidates, with the support of technology,

empirically based and research supported instructional practices appropriate to limited English proficient learners.

**(ii)(iii) Reform Element: Prospective and new teachers will possess skills to analyze student achievement data and other measures of student learning and use such data and measures to improve classroom instruction.**

CSUMB and Cal Poly will call upon faculty in their respective institutions, and as needed, external consultants and specialists, to train and update colleagues in math, science, special education, multiple subject and all other teacher education programs to understand and convey to their teacher candidates skills to analyze student data to improve classroom instruction. Particular attention will be given to emerging formative and summative assessment practices of the CCSS and then to follow, the NGSS. Additional assessment skills will focus on English language literacy assessment and diagnosis of reading challenges.

Teacher education faculty will produce course notes, update syllabi, and adopt curriculum resources that convey skills to analyze student data to improve classroom instruction. Following the extensive curriculum work of the faculty, the university will approve revisions to syllabi, course content, course descriptions that include skills to analyze student data to improve classroom instruction.

**(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.**

CSUMB and Cal Poly faculty experts, working across institutional lines, and as appropriate, with qualified specialists and consultants, will provide their colleagues teaching skills and an understanding of effective instructional strategies across all applicable content areas that enable general education and special education teachers *to differentiate instruction* for students, *including those with disabilities, students who are limited English proficient, students who are gifted and talented, and students with low literacy levels*. Every effort will be made to provide empirically based and research valid strategies and methods appropriate for these students in the context of high needs schools in our shared rural area.

Following the acquisition of knowledge in depth on these important skills and understandings and differentiation of instruction to meet student needs, faculty of the partner universities will enhance the curricula of their courses to convey these skills, including revisions to syllabi, course descriptions, course notes, and the selection of curriculum resources. They will also prepare formative and summative assessment to measure candidate acquisition of the skills and strategies for the affected student populations described above. Students will be expected to demonstrate their skills and *to differentiate instruction on the edTPA*. Faculty will provide their teacher candidates with teaching skills to meet a broad array of student needs, particularly those students found in the high needs schools of the high need LEAs of the project.

**(v) Reform Element: Prospective and new teachers will learn to effectively participate as a member of the individualized education program team, as identified in section 614 (d)(1)(B) of the IDEA.**

Faculty specialists with expertise in the Individuals with Disabilities Education Act (IDEA) and the role and function of *individualized education program (IEP) teams*, and as appropriate, consultants and school personnel who understand proper functioning of these

teams, will teach all faculty of teacher preparation programs of the two institutions the knowledge and skills prospective and new teachers will need to convey participation skills for individualized education program (IEP) teams to teacher candidates through a special strategy described later in this proposal.

Subsequent to this training, faculty will convey these skills of participation to prospective and new teachers, and to make adjustments to syllabi, course descriptions, course notes, and the selection of instructional resources to convey the skills of effective participation. Faculty will also develop formative and summative assessments to measure candidate acquisition of participation skills and how to develop these skills within practical training experiences.

**(vi) Reform Element: Prospective and new teachers can successfully employ effective strategies for reading instruction using essential components of reading instruction.**

Faculty experts of the CSU Center for the Advancement of Reading (see letter of commitment, Appendix G) will train CSUMB and Cal Poly faculty in research into reading effectiveness, 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 all students in all programs, including improvements to syllabi, course outlines, course notes, and the selection of instructional resources. Faculty will also learn to assess and evaluate candidate acquisition of reading instruction skills. Subsequent to instruction, CSUMB and Cal Poly faculty will monitor candidate 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 needed to maintain high levels of performance on this exam

**(3) Reform Element: The partners will ensure collaboration with departments, programs, or units 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 in order to become highly qualified, which may include training in multiple subjects to teach multiple grade levels as may be needed for individuals preparing to teach in rural communities and for individuals preparing to teach students with disabilities as described in section 602 (10)(D) of the IDEA**

Several content area faculty outside of teacher education will be working on the development of curriculum to ensure candidates are highly qualified, including subject matter course development and student advisement with regard to subject matter competency. The work plan will include subject matter faculty, some of whom will have been hired as a commitment to this project (see letters of support from CSUMB Dean Moroh and CSUMB President Ochoa in Appendix G) to lead this aspect of the project. Subject matter faculty, department chairs, and deans of units outside of teacher education will serve on the executive council to ensure that faculty of the disciplines have a strong role to play in curriculum development, both in content and relevant pedagogy.

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

CSUMB and Cal Poly, working closely with their county offices of education and qualifying school district partners, will plan and *implement a two year teacher induction program that exhibits coherence with preceding clinical training experience through the use of high-leverage effective teaching practices selected by the partners for use in meeting the reform*

*elements of Absolute Priority I, and effective instruction of the CCSS and the NGSS.*

Universities will work closely with county offices to develop a shared support system for teacher induction in the rural and remote school districts that lie between us, but at more than an hour's distance from either campus.

**(5) Reform Element: Developing admissions goals and priorities aligned with the hiring objectives of the high need local education agency in the eligible partnership.**

The on-going needs assessment of LEAs and their high-needs schools will be evaluated by CSUMB and Cal Poly in collaboration with partner county offices of education. Further, the LEA representatives to the executive council will identify employment needs of the high need LEAs. Management team representatives will meet at least once a semester with the LEA human resource directors to monitor projection of staffing needs. *Local school district human resource specialists will advise the IHEs on targets for teacher recruitment and admission.*

**(6) Reform Element: The partners will implement 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, in collaboration across the two institutions of higher 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 of the universities. Additional courses or enhancements to existing courses will be undertaken by the content faculty under the review of the local operating units of the two IHEs. A table showing where the reform efforts will appear in particular courses is located in Appendix H.

As curriculum reviews and modifications are concluded, they will be presented to the executive council for review. Faculty and administrators of the content disciplines who are standing members of the executive council will advise the curriculum development process.

#### The CSUMB and Cal Poly Action Plan for Systemic Change

While our credential programs have experienced recent advancement, we are not complacent or satisfied. Moving forward, we plan to expand our view of teacher preparation to include undergraduate early field experience through the credential program and into new teacher induction. *The intent of both Cal Poly and CSUMB is to link reform elements across this continuum of teacher preparation in a cohesive and coherent fashion.*

Cal Poly and CSUMB will work with high-need district partners in rural and remote areas to establish a framework of high-leverage effective teaching practices derived from research-based sources of practices supporting the achievement of stipulated reforms. By drawing from established experts, we will ensure our framework is research-based, aligned to InTASC standards and cross-walked with edTPA. The framework will serve to support candidate understanding and implementation of effective research-based practices in classroom instruction (including practices essential for transforming learning expectations of the CCSS and NGSS into classroom practice), link knowledge of student learning methods to teacher actions, highlight differentiated instruction to meet the learning needs of all students, and integrate these practices within their content areas. The framework will also allow the program to assess how well prospective new teachers develop teaching skills across the teacher preparation continuum. [corresponds to checklist D items b1, b2i,ii,iv, c2, c5]

In addition to the benefits noted above, infusing a smaller subset of appropriate framework practices within undergraduate early field experiences will effectively lengthen the

time prospective teachers spend identifying and understanding the practices. The anticipated outcome of this reform is stronger integration of pedagogy and classroom practice as well as more consistent implementation of these effective teaching practices in academic content areas once these undergraduate students enter their clinical experience within their pre-service program.

CESAME: A powerful resource for STEM education to be replicated at CSUMB

At Cal Poly, most undergraduate early field experiences reside within the Center for Excellence in STEM Education (CESAME). CESAME programs include:

- Learn by Doing Lab (5th-8th grade students come to Cal Poly to do science and math activities led by STEM and liberal studies undergraduates),
- Teaching Assistants in Math and Science (science, math, and liberal studies undergraduates assist in local science and math classrooms),
- Mentors Out of School Time (science, engineering and liberal studies undergraduates tutor and teach science lessons in after-school programs),
- Communicating Ocean Sciences to Informal Audiences (science undergraduates design ocean science exhibits for informal audiences including elementary students), and;
- STEM Teacher and Researcher (prospective teachers conduct summer research in national labs).

Cal Poly's Science Teacher-in-Residence (TIR), a public school science teacher who is borrowed from their district and brought to campus as a full-time faculty member, will embed a set of effective teaching practices into the pre-service undergraduate CESAME program.

Additionally within each CESAME program, participants will be exposed to the content appropriate language from the newly adopted CCSS and/or NGSS. *CSUMB science and math*

*faculty to be appointed in the College of Science, Media Arts, and Technology, together with Science Education and Math Education (an appointment commitment of Dean Moroh and CSUMB President Ochoa) will review and participate in CESAME events for the purpose of planning a replication of CESAME at CSUMB.*

### CSUMB and Cal Poly collaborate with Rural Education leaders on Induction Program Planning

On top of reforming our credential programs and undergraduate early field experiences, Cal Poly and CSUMB also plan to enhance our collaboration and articulation with local induction programs. Both universities will partner with local districts and county offices of education to more closely align evaluation of pre-service and in-service teachers, particularly during the years of induction. *We plan to establish coherence in teacher education from the pre-service to in-service components by holding credential candidates accountable for teacher effectiveness measures more closely aligned with what they will experience in induction and beyond.* By adopting and embedding a new research-based teacher effectiveness framework within our pre-service program, we more closely align with the expectations and evaluation measures seen throughout local districts. Ultimately, both campuses acknowledge that closer alignment with local districts regarding the language and measures we use to talk about teacher effectiveness will smooth the transition and improve performance from early field experience to pre-service to in-service teaching. [b3, f]

### edTPA is a research-based measure of effective teaching practices

Another research based element both institutions plan to adopt is edTPA. Stanford University faculty and staff at the Stanford Center for Assessment, Learning, and Equity (SCALE) developed edTPA. They received substantive advice and feedback from teachers and teacher educators and drew from experience gained from over 25 years of developing

performance-based assessments of teaching. Both Cal Poly and CSUMB will be transitioning their Teacher Performance Assessment (TPA) to the National edTPA model, and elements of edTPA will be woven throughout the credential program courses in an effort to improve, evaluate and assess how well all prospective and new teachers develop teaching skills. By supporting and holding candidates accountable for attaining proficiency in rubric elements such as *Analysis of Student Learning* (rubric 11), *Analyzing Students' Language Use and Content Learning* (rubric 14), and *Using Assessment to Inform Instruction* (rubric 15), both campuses will ensure our candidates possess skills to analyze student academic achievement data and other measures of student learning and use such data and measures to improve classroom instruction [D:biii].

#### Co-teaching at CSUMB and Cal Poly

A final research-based practice currently implemented at both Cal Poly and CSUMB is co-teaching. Co-teaching was recommended by the NCATE Blue Ribbon Panel of 2011 as one of the best models for improving clinical practice. The theory behind co-teaching is that a cooperating teacher and teacher candidate can collaborate through co-planning, co-instructing, and co-assessing to make the invisible and implicit aspects of teaching visible and explicit. Studies from St. Cloud University have shown that K-12 student success increases in classrooms where co-teaching occurs (see Appendix H for Co-teaching research).

The credential programs at Cal Poly and CSUMB have put co-teaching at the center of the clinical experience; however, co-teaching expectations have not been well defined, so there is wide variation in how it is implemented. Cal Poly and CSUMB are currently conducting research to capture the range of implementation in order to identify the key characteristics of effective co-teaching within clinical experience. CSUMB has developed a set of secondary

level reading comprehension strategies for use in Co-taught classrooms. With this knowledge, we can then develop better training and supports for cooperating teachers, teacher candidates, and university supervisors. Using results from current our research, Cal Poly and CSUMB will improve our training of supervisors, school site mentors, and cooperating teachers in order to improve the quality of teacher mentoring. [D:c3, c8]

### Modeling Co-teaching in Teacher Education courses at CSUMB and Cal Poly

CSUMB and Cal Poly faculty will model the practice of co-teaching within credential program courses. *At least four courses at each campus will be taught in this manner.* Most cooperating teachers and teacher candidates have never experienced a co-taught classroom, which makes it difficult to emulate. Through the modeling of co-teaching during the credential program, faculty will highlight its use as a means of differentiating instruction. Specifically we will focus on using co-teaching to help meet the needs of students with disabilities, students who are limited English proficient, students who are gifted and talented, and students with low literacy levels [b,A] . To-date Cal Poly has piloted implementing this instructional method within our single subject science methods course. In this initial effort to co-teach within the credential program, we paired our science TIR with an Assistant Professor in Physics. Based on this preliminary implementation, *Cal Poly will hire a humanities or social science TIR from a partner school district with the express purpose of co-teaching with School of Education faculty. The ideal candidate will have background and experience working with English language learners and/or students with special needs. Once hired, the TIR will co-teach education courses and co-supervise teacher candidates across credential programs.*

CSUMB has piloted co-teaching in its credential program methods courses. As a university in a leadership role in co-teaching, CSUMB has modeled the practice for its teacher

candidates as campus faculty and clinical faculty have co-taught methods courses and shared in the supervision of the candidates as the candidates practiced co-taught strategies in school placements. This practice also serves as a mechanism to more tightly link coursework, the clinical experience and the experience of in-service teachers. [D:b2i-iv, c5]

While co-teaching is currently the center of the clinical experience at both Cal Poly and CSUMB, the clinical experience is not the center of the teacher education programs as recommended by the NCATE Blue Ribbon Panel in 2011. Successful co-teaching, particularly in the areas of co-planning and co-assessing, is difficult when candidates have limited time in the field. CSUMB will advance in this area by developing a residency program in rural, remote partner districts. Beginning with the single subject program, Cal Poly plans to reform the structure of their credential programs to maximize the effectiveness of the co-teaching model by creating more time in clinical practice. Specifically, single subject candidates will take the bulk of their coursework over the summer and begin their clinical experience with the local schools in the fall. The remaining credential coursework will be delivered in an online/hybrid format or on Saturdays to allow for extended time in the field and to allow for placements in rural, remote partner districts between Cal Poly and CSUMB. [c1]

CSUMB, Cal Poly and rural district curriculum leaders develop an induction program

To meet our goal of infusing high-leverage effective teaching practices throughout the teacher preparation continuum, Cal Poly and CSUMB will create an induction support program. In collaboration with county office induction leaders, district induction leaders, teacher mentors and induction support providers, we will develop a plan for actively supporting the two year induction experience. The intent of our induction support program is to extend candidate skills and abilities based on Absolute Priority I reforms, support mastery of effective teaching

practices during in-service teaching, and increase retention rates particularly in the rural, remote schools that lie between Cal Poly and CSUMB.

The key component of our induction support program is hiring highly qualified individuals who will serve dual roles within Cal Poly, CSUMB and their respective school districts. Specifically, we envision a model where supervisors are jointly hired and trained to support credential candidates during their pre-service co-teaching (providing for a sustainable model of service to remote rural schools) while also serving as induction support providers for newly hired teachers during their first two years on the job. In addition to their induction training, these mentors will receive support and training aligned with co-teaching and the effective teaching practices and measures of effective teaching practice that ground the continuum in teacher education from credential program courses, through the clinical experience, into induction and beyond. Cal Poly and CSUMB will partner with districts to identify incentives in the form of release time and stipends to build capacity in coaching and mentors. *Once fully implemented, this model will serve several important functions [c,8,ii,iii]. It will help universities and districts recruit and retain high-quality supervisors and mentors to serve in rural, remote locations, and it will further link universities with districts while also strengthening the connection between pre-service and in-service teaching.*

#### Pre-service teachers and the Individualized Educational Program (IEP)

As noted above, meeting the needs of rural, remote partner districts is a high priority for CSUMB and Cal Poly. An additional top priority is meeting the needs of students with special needs and ensuring our credential candidates can effectively participate as members of the individualized education program team, as defined in section 614(d)(1)(B) of the Individuals with Disabilities Act (IDEA). Building off of Cal Poly's success with mock interviews where

candidates practice interviewing for teaching positions with local administrators, Cal Poly and CSUMB will develop a mock IEP event. The event will bring together candidates from across programs as well as outside participants (e.g., parents, school psychologist, para-educators, etc.) to role play an IEP meeting. This culminating event will put into practice foundational knowledge learned in coursework while also providing an appropriate venue to discuss principles of universal design for learning and positive behavioral interventions. [b2v]

### Literacy Education

In addition to the reforms noted above, Cal Poly and CSUMB also plan to strengthen the literacy teaching skills of prospective elementary, secondary and special education teachers. Both campuses intend to transition the focus of the multiple subject Teacher Performance Assessment from elementary mathematics to elementary education, which holds candidates accountable for effective planning, instruction, and assessment across both literacy and mathematics. Cal Poly's education specialist credential program will enhance a literacy course specifically designed for special education candidates.

A common thread through each of these literacy reforms will be how to provide individualized, intensive, and targeted literacy instruction for students with deficiencies in literacy skills. Accurately identifying students with literacy deficiencies can only be accomplished if prospective teachers are able to use screening, diagnostic, formative, and summative assessments to determine students' literacy levels, difficulties, and growth. Within program reforms, these skills will be addressed in order to improve instruction and improve student reading and writing skills. [b2vi]

### Book Clubs for Rural Schools at CCSS Reading Levels

A final way Cal Poly and CSUMB will strengthen literacy teaching skills of prospective teachers is through implementation of a book club program for elementary students in rural, remote partner districts. This book club literacy program will incorporate the essential components of reading instruction and it will be planned and implemented by future elementary teachers. Teacher participants will be taught to select texts for the book club in keeping with grade level reading expectations of the CCSS through professional development to be first offered at Cal Poly, then subsequently through CSUMB. A program such as this not only helps prepare more effective future teachers, it also helps increase student success within rural, and remote partner schools.

GOAL 2: PLAN AND IMPLEMENT TEACHER PREPARATION PROGRAMS AT CSUMB AND CAL POLY TO MEET THE NEEDS OF RURAL AND REMOTE AREAS THAT LIE BETWEEN BOTH CAMPUSES. CSUMB TO MEET **ABSOLUTE PRIORITY II: PARTNERSHIP GRANTS FOR THE ESTABLISHMENT OF EFFECTIVE TEACHING RESIDENCY PROGRAMS**

Objective 2: Plan and implement academically rigorous and effective fifth year and graduate teacher preparation programs for high-performing graduates that include summer courses and online courses in the academic year.

**(a) Supporting a teaching residency program described in paragraph II(a) for high-need subjects and areas, as determined by the needs of high-need LEA in the partnership.**

In early June, 2014, Professor O’Shea, Project Director, met with superintendents and designees of all program eligible school districts in Monterey County. Subsequently, Cal Poly reached out through email, phone calls, and personal meetings to hear of the critical teacher staffing needs of the rural districts in remote locations. In Appendix H, we provide a table and

sample survey form of this needs assessment exercise. School leaders were asked to identify the staffing and professional development needs in their districts. As we move forward to this project, the executive council, inclusive of these school leaders, will guide the IHEs in developing and meeting their staffing needs and their teacher professional development needs. In our budget, the schools have been provided a funding allocation and each will develop a work plan for expense of these funds for the purposes of working with CSUMB and Cal Poly in meeting the reform expectations of Absolute Priority I and Absolute Priority II.

**(b)Placing graduates of the teaching residency program in cohorts that facilitate professional collaboration, both among graduates of the teaching residency program and between such graduates and mentor teachers in the receiving schools.**

Teacher candidates at CSUMB will be placed in year-long rural Teacher Residencies in response to Absolute Priority II. Candidates will start the program in cohorts during the summer while placed with a cooperating teacher in a public summer school. In the afternoons, residency candidates will take coursework and be advised as a cohort. Summer courses will include classroom culture, classroom management, instructional planning, educational psychology for teaching, and methods of instruction for teaching with LEP students. These courses, currently provided to cohorts of students enrolled in CSUMB’s conventional 5th year program, will be substantially revised to be reform expectations of Absolute Priority I, and to include components of our effective teaching practices continuum. With the start of the K-12 school year, candidates begin a year-long clinical co-teaching experience. 10 candidates will be accepted into rural teaching residencies when they meet selection criteria discussed below.

Research into cohort operated teacher credential programs (2001) reveals that camaraderie and esprit-de-corps develops in cohorts that are cultivated as a learning community

and guided by an identified leader through challenges and experiences they share together. At CSUMB, cohorts of teacher candidates and residents will be led in this manner by the coordinators of the Single Subject and Multiple Subject programs. Moreover, cohorts of residents and teacher candidates will be kept in contact with cohorts that have preceded them through the use of social media and computer-mediated conferencing, a strategy that has been well developed at Cal Poly's Noyce Scholars program.

**(D)(I)(c) Ensuring that teacher residents who participate in the teaching program receive:**

**(1) Effective pre-service preparation as described in paragraph II.**

Through cohort scheduled courses, residents and teacher candidates will be provided a reformed teacher preparation curriculum that has met the reform elements of Absolute Priority I, and the research based high-leverage teaching practices developed by the partnership for the teacher preparation continuum. The reform elements of Absolute Priority I will be included in cohort-experienced pre-service courses taken prior to, and concurrent with, the residency year of teaching. This will require support courses in content methods and secondary literacy to be offered online, which will also support clinical experience placements at remote sites.

**(D)(I)(2) Teacher mentoring**

During the first summer of the program, residency candidates will be placed in conventional student teaching arrangements of one month duration with a cooperating summer school teacher selected and trained for this responsibility. These experiences will be supervised and supported by a CSUMB full-time faculty member, typically the program coordinator, and a clinical faculty member. During the residency, and during the K-12 academic year for all other teacher candidates, our pre-service teachers are placed in a co-teaching relationship with support from a site-based mentor and university supervisor. Through this arrangement, three

experienced professionals guide the growth and development of residents and other pre-service candidates. The supervisors, mentors, and clinical faculty will have all been trained in reform elements of Absolute Priority I and they will have been trained in the process of educating pre-service teachers in the continuum inclusive of high-leverage effective teaching practices.

Candidates will be placed at particular sites in cohorts to facilitate collaboration among the residents and mentor teachers (II-a5) and residents will co-teach with a qualified mentor teacher for the entire clinical placement (IIa3&3i). In this relationship, the two teachers support each other's instruction, both providing support to students during all learning experiences. In addition, the mentor teacher will serve as a teacher coach during the induction program for resident who are hired ( IIa3ii). This is in addition to the general induction support provided by the district (IIa7). Mentor teachers will be chosen based on the criteria described in Absolute Priority II: section II-4 with a heavy emphasis on highly collaborative mentor teachers whose teaching practice is tightly aligned to the program coursework and the partnerships effective teaching framework. (II a3ii&a4)

**Support required through the induction program as the teaching residents enter the classroom as new teachers.**

As residents finish the residency year, they will move on to the first year of their induction with support from the same mentors that supported the residency, under funding arrangements in rural schools supported by CSUMB and Cal Poly. This arrangement ensures the development of the coherent continuum of expectations and skills through the acquisition of effective teaching practices. Each resident will complete a two-year induction program as described and responded to in Absolute Priority I.

**Residents to receive the preparation described in paragraphs (c) (1), (2) and (3) of Absolute Priority I.**

All residents, through their year-long co-teaching placement, will receive year-long *opportunities for enrichment* through the courses they will take during the residency provided as a supported cohort experience, and extracurricular experiences within and between cohorts through social media interactions, computer mediated conferencing, and conventional conference attendance and support sessions as cohorts. Through the academic year, residents finish course work that will meet all reform elements of Absolute Priority I.

*Residents will be accepted for placement as co-teachers in classrooms of high-needs schools within high needs districts in an intentional effort to respond to staffing needs identified by these qualifying LEAs.* While in their residencies, they will be a part of the professional learning community of their cohort and supported by their co-teacher, their site mentor, and university clinical faculty member. School leaders (department chairs) and administrators (principals, vice principals) will confer with these teams and observe and interact with co-teaching pairs.

**(II) Teaching Residency Programs**

**(1) Integration of pedagogy, classroom practice, and teacher mentoring**

Through concurrent courses and co-curricular experiences of the cohort, residents will integrate pedagogy with classroom practice through the tutelage of their co-teacher, their site-based mentor, and university clinical faculty member. *The high-quality teacher mentoring, resulting in team training in high-leverage effective teaching practices and reform elements of Absolute Priority I, will ensure the quality of mentoring received.*

**(2) Engagement of teaching residents in rigorous graduate-level course work leading to a master’s degree while undertaking a guided teaching apprenticeship;**

CSUMB will establish an effective teacher residency program that includes a year long rural schools residency and leads to a Master of Arts in Teaching degree in 18 months as described in Absolute Priority II. The development of the Master of Arts degree program will require the creation of new courses in advanced curriculum and assessment, research based effective instructional practices, literacy in the content area, and research methods (which will focus on the use of data to improve instruction within the context of action research). These additional courses will account for 15 units that will be taken in the summer and fall following the rural residency. (II2) These courses, as well as the pre-service courses that precede them taken prior to and during the residency, will be graduate level courses reviewed and approved through the university curriculum approval process.

**(3) Experience and learning opportunities alongside a trained and experienced mentor teacher-**

Residents will be placed in a co-teaching relationship and perform daily instructional opportunities in keeping with the co-teaching model. As a result of preliminary summer experiences, there will be no transition through observations or support services during the residency year. Both co-teachers will be responsible for contributions to student learning each day of the school year from the first day of school to the last day of school.

**Co-teachers and mentors complement the residency program so that classroom practice is tightly aligned with course work**

The co-teacher who teaches in the same classroom with the teaching resident will have experience in new teacher development through joint training with the on-site mentor

representing the school and LEA, and the university clinical faculty member, representing the university in ensuring reform elements of Absolute Priority I and high-leverage effective teaching practices appear in classroom practice. Alignment between residency experiences and course work results from the university supervisor serving in two roles: 1) as a co-teacher in a methods course at the university, and 2) as the supervisor instruction conducted by residents working as a co-teacher in the classroom of an experienced master teacher. The two co-teachers will be further supported by school site mentor who is a teacher leader/academic coach. The school site mentor and university supervisor ensure that effective teaching practices of the partnerships and reform elements of Absolute priority 1 appear in classroom practice. Through this intensive support, a representative of the LEA and a representative of the university are supporting and leading each co-teaching pair, bringing effective teaching practices and reform elements to classroom practice in every co-taught classroom of the partnership. See the figure “Support System for Teaching Residents” in Appendix H.

**(ii) Mentors will have extra responsibilities as a teacher leader of the teaching residency program, as a mentor for residents, and as a teacher coach during the induction program of new teachers, and for establishing, within the program, a learning community in which all individuals are expected to continually improve their capacity to advance student learning, and who may be relieved of teaching duties as a result of such additional duties.**

Mentors will be fulfilling multiple roles. As guides to the co-teaching process and supporters for co-teaching, they work with all residents in their school or locality and are trained in the co-teaching process. They also participate with masters degree students, CSUMB faculty, and Cal Poly faculty in researching and developing the effectiveness of co-teaching. Finally, as support providers for interns, they ensure the coherence of skills development along the

continuum of effective teaching practice development while they contribute to induction support. These mentors, having received training in the CSUMB and Cal Poly professional development programming for CCSS and NGSS implementation, as appropriate, are a part of the IHE-LEA learning community consisting of mentors, co-teachers, clinical faculty who co-teach at the university, and campus faculty. This learning community will be consistently working to identify and develop high-leverage effective teaching practices along the teacher education continuum.

**(iii) Who may be relieved from teaching duties as a result of such additional responsibilities;**

Partner districts have received funds and the university will contribute additional support to ensure that mentors are relieved of teaching responsibilities as they perform these functions.

**(4) The establishment of clear criteria for the selection of mentor teachers based on measures of teacher effectiveness and the appropriate subject area knowledge. Evaluation of teacher effectiveness shall be based on, but not limited to, observations of the following:**

**(ii) Appropriate instruction that engages students with different learning styles;**

**(iii) Collaboration with colleagues to improve instruction;**

**(iv) Analysis of gains in student learning, based on multiple measures that are valid and reliable, and when feasible, may include valid, reliable, and objective measures of the influence of teachers on the rate of student academic progress.**

Site-based mentor teachers will be selected for training by professional development and curriculum leaders and administrators (principals, vice principals). The selection criteria to include *ratings from observations of instruction that engages students of different learning styles*. Additionally, the selection process will include criteria related to observations of

collaboration with colleagues, typically in professional learning communities or grade level teams, and the nature and quality of such interactions.

iResult LLC, having received commitments from districts to negotiate data sharing agreements, will work with the districts and CSUMB as a contractor to process and display K-12 student success measures, such measures to include valid and reliable measures of student achievement, and as developed, formative assessment results respecting the CCSS and the NGSS, where applicable. As described in Appendix H, iResult can act on data obtained on a daily basis to identify measures along indicators of student success in our co-taught classrooms where residents and co-teachers work together with the support of site-based mentors. This information will guide the continuing improvement process and the selection and retention of co-teachers for the teacher education function.

**In the case of mentor candidates who will be mentoring new or prospective literacy and mathematics coaches or instructors, appropriate skills in the essential components of reading instruction, teacher training in literacy instructional strategies across subject areas, and teacher training in mathematics instructional strategies, as appropriate.**

Mentor and mentor candidates, as part of the project learning community, will receive training in the Absolute Priority I reform elements, the high-leverage teacher effective practices adopted by the program partnership, and strategies for effectively meeting the CCSS and NGSS, as appropriate. Cal Poly, through CESAME, will be providing the lead for much of this work. CSUMB will provide training in effective components of reading instruction with guidance from the CSU Center for the Advancement of Reading.

**Grouping of teaching residents in cohorts to facilitate professional collaboration among residents.**

Residents will be enrolled in all courses as a cohort, with cohort management from program coordinators, and cohorts will develop camaraderie and esprit de corps through use of social media and computer mediated conferencing, and connection to cohort that precede them to help learn along the continuum, as modeled by the Cal Poly Noyce project.

**The development of admission goals and priorities-**

**That are aligned with the hiring objectives of the LEA partnering with the program, as well as the instructional initiatives and curriculum of such agency, in exchange for a commitment by such agency to hire qualified graduates from the teaching residency program; and which may include consideration of applicants that reflect the community where they teach as well as consideration of individuals from underrepresented populations in teaching;**

The LEAs in the partnership will confer each semester with the HR leaders of the LEAs with regard to staffing needs in typically hard-to-staff positions. LEA leaders will contribute their views on concerns for hiring needs, inclusive of the representative nature of applicants and selectees, for teaching residencies in their schools. Through conferencing within the executive council, *residency performance criteria will be established that lead to the appointment of residents as continuing teachers in eligible partner districts and schools.*

**Support for residents, once the teaching residents are hired as teachers of record, through an induction program, professional development, and networking opportunities to support the residents through no less than the resident's first two years of teaching.**

Each resident, continuing as a master's degree student and an inductee, will be supported by site-based mentors and university clinical faculty through induction. While still in their cohort, they will receive ongoing professional development as part of the induction

experience and as part of the master's degree curriculum. CSUMB will plan and provide the professional development experiences for residents and other candidates along the continuum of effective teaching practices. The master's degree program will be planned to complement the induction experience.

### **Selection of individuals as teacher residents**

**Eligible individuals to be recent graduates of a four-year institution of higher education or a mid-career professional from outside the field of education, possessing strong content knowledge or a record of professional accomplishment, and submit an application for to the teaching residency program.**

Applicants to the teacher credential programs of both universities, as 5th year programs within California, are college graduates. Additionally, the universities will seek and recruit mid-career professionals, and military, who have the degrees and qualification to teach areas of need identified by partner LEAs. As admitted credential students, there will be an additional teaching residency application process to include the following criteria,

**Strong content knowledge or record of accomplishment in the field of subject area to be taught, strong verbal and written communication skills, which may be demonstrated by performance on appropriate tests, and; other attributes of effective teaching, determined by interview, as specified by the partnership.**

The universities and high-need LEA partners will develop admission criteria to the residency program, that will minimally include passing scores on subject matter exams in areas of teaching needed by the LEAs, a writing sample and interview to assess written and oral communication skills, an audition of potential teaching characteristics, and responses to a

professional and personal dispositions survey that includes disposition for teaching students that populate our high-needs rural and remote schools.

#### CLINICAL EXPERIENCES FOR CANDIDATES OTHER THAN RESIDENTS AT CSUMB

Four Cal Poly candidates will be placed in rural modified residency placements (20 weeks in a rural school) the first year of the project that are supported by mentors and academic coaches. Two additional candidates to be similarly placed each additional year of the grant. Programs will adopt reforms in keeping with 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*. Both universities will collaborate to meet the needs of teacher candidates placed in rural remote schools, and to coordinate supervision and other candidate support services for purposes of efficiency and cost containment.

We will use a residency stipend as an incentive to bring highly qualified pre-service teachers to these remote areas. CSUMB and Cal Poly have transitioned their credential programs to year-long placements at schools and they have found that credential candidates are often hired at the schools where they complete their clinical experience. In addition to this method of affecting the potential hiring pool, we also see hosting a teacher candidate as a type of professional development, especially when co-teaching is implemented. Co-teaching requires the cooperating teacher to articulate the assumptions and reasons behind their actions to the teacher candidate, and it allows new ideas from the university to flow into the classroom through the teacher candidate. Collaboration between a cooperating teacher and teacher candidate can also alleviate some of the isolation inherent in the teaching profession, which is

exacerbated by being in a remote area where the teacher may be the only science or math teacher at the school site.

As CSUMB develops and implements their residency program, Cal Poly's Secondary Credential Program will pilot a modified residency program by placing a subset of candidates in high-needs schools in the rural, remote areas that lie between Cal Poly and CSUMB. The modified residency will consist of a 20-week placement in a remote location and it will emulate the structure currently in place in Cal Poly's agriculture credential program, which places candidates for 15 weeks in remote, rural areas as far as 300 miles from campus. This new model will require putting at least one course online, offering it on alternate weekends and finding a way for candidates to participate in a weekly seminar using technology (Skype or Google+), or offering the seminar once a month on campus. As the program adjusts to allow for more time in the clinical experience (as described in Goal 1), the modified residency can gradually expand to a full year experience.

#### Meeting the challenge of high quality support for remote rural schools

Clinical practice placements in remote locations are difficult to support with high quality supervision. Supervisors either travel long distances and go infrequently (the current model for Cal Poly's agriculture program) or supervisors must be hired in the distant locations, which is difficult to sustain because there are so few students and there is limited connection with the universities. CSUMB and Cal Poly will work toward solving this issue by placing more candidates in these rural, remote areas and hiring common university supervisors to support them. These supervisors will also serve as induction support providers, further linking the pre-service and in-service experiences while also adding to the likelihood of retaining these individuals due to more job security through multiple roles and opportunities. Skills developed

by residents during their co-teaching year will be further developed as they simultaneously undertake their induction experience and final course work of their Masters degree program. Having one person who can effectively play multiple roles not only helps support the rural areas between our campuses, it also helps address cost and efficiency factors, while leading to sustainability of the services. [c1]

**GOAL 3 – TO DEVELOP AND IMPLEMENT EFFECTIVE MECHANISMS TO ENSURE THAT THE ELIGIBLE PARTNER DISTRICTS ARE ABLE TO RECRUIT QUALIFIED INDIVIDUALS TO BECOME HIGHLY QUALIFIED TEACHERS.**

Objective 3: Recruitment and retention of qualified teachers. This goal also addresses GPRA Indicator 1.1.

Results from a preliminary local needs assessment indicate that high-need LEAs are in need of a larger pool of highly qualified STEM and Special Education teachers as well as a more diverse applicant pool for all teaching positions. This is in line with President Obama’s call for more math and science teachers through the 100Kin10 initiative. Cal Poly, in partnership with CSUMB, will develop a recruitment plan specifically focusing on recruitment of underrepresented populations within all credential programs. In addition, we will develop specific initiatives that focus on recruiting future special education teachers and STEM teachers who can teach in AP and IB programs. *At the completion of grant funding, the goal will be to increase the number of highly qualified science, math and special education teachers prepared at Cal Poly and CSUMB by 10% and to increase the percentage of under-represented credential candidates in all programs by 10%.* The recruitment plan will include partnering with 100Kin10 in their multi-media campaign starting fall 2014, partnering with Cal Poly’s Center for Excellence in STEM Education to offer high quality undergraduate early field

experiences, developing targeted recruitment materials, and partnering with advising offices at Cal Poly, CSUMB and local community colleges (Allan Hancock College, Cuesta College, Hartnell College and Monterey Peninsula College).

Cal Poly and CSUMB Schools of Education will align admission goals with the needs of high-need LEAs and develop recruitment materials specifically targeting individuals currently working within the school system who are not serving as classroom teachers (e.g., para-educators, classified staff, substitute teachers, etc.), former military personnel, and underrepresented individuals. As part of this effort, Cal Poly and CSUMB will partner with advising offices at their respective universities and local community colleges to develop materials that inform individuals interested in teaching of the various pathways available to enter credential programs at Cal Poly and CSUMB as well as pathways to the majors that lead to teaching (e.g., english, math, history, science, liberal studies, etc.). These materials will include direct pathways through Cal Poly and CSUMB plus other pathways through community colleges and other four-year institutions. Our materials will make clear that it is possible for prospective teachers to attend another university and then return to their home region to pursue a teaching credential. The effort to increase diversity of credential candidates will initially focus on community college transfer students who enroll at Cal Poly or CSUMB to complete their undergraduate degree. As these candidates are supported through successful undergraduate early field experiences in teaching, a larger percentage of them may decide to pursue teaching as a career.

#### Candidate diversity and preparation to meet needs in STEM

Increasing candidate diversity is a major goal within our recruitment efforts and increasing the pool of highly qualified STEM teachers is another major goal at both Cal Poly

and CSUMB. The 100Kin10 initiative aims to fundamentally change STEM teaching and learning by connecting funders and other initiative partners with the education community resulting in 100,000 new STEM teachers in the next 10 years. This fall, 100Kin10 will be developing a web-based and multi-media recruiting toolkit to help recruit STEM teachers. Through this campaign, they hope to reach college students majoring in STEM fields and convince them to consider teaching as a worthy pursuit. The California State University (CSU) System is a 100Kin10 partner, and Cal Poly is leading the CSU's effort to demonstrate effective ways to use these tools. In developing a recruitment plan, the partnership will draw upon 100Kin10 resources to meet our goal of recruiting more diverse STEM teachers, and we will apply the same strategies to other disciplines.

#### CESAME as a recruitment resource for STEM teacher candidates

Currently, one of Cal Poly's most successful methods of recruitment for STEM teachers has been the undergraduate early field experience programs offered by the Center for Excellence in STEM Education (CESAME). Right now CESAME programs primarily emphasize opportunities within science, and these programs have contributed to the number of science credential candidates growing from 8 in 2005 to 22 candidates in 2014. Although CESAME focuses primarily on science and math, the goal of the credential programs (and Absolute Priority I) is to recruit more diverse prospective teachers across all disciplines, including special education. Based on Cal Poly's success increasing our output of highly qualified science teachers, we plan to extend the undergraduate early field opportunities to include English and social science content areas while also expanding current opportunities within mathematics. Additionally, we will perform a longitudinal study tracking students who participate in these early field experiences to identify the most successful programs as well as

barriers preventing students from entering teaching credential programs. Results from this longitudinal study will help shape future recruitment efforts and future resource allocation. We will also build upon the successes at Cal Poly and we will replicate the most successful CESAME programs at CSUMB.

CESAME has an established program to place teacher candidates in federal research labs

CESAME's STEM Teacher as Researcher (STAR) program provides aspiring teachers the opportunity to do authentic STEM research at national labs (NASA, NOAA, Department of Energy, and Department of Defense labs) and helps them 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, gives future 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 classroom. Four 100Kin10 partners (NSF, S.D. Bechtel, Jr. and Noyce Foundations and Chevron Corporation) are funders of STAR, and it will be a significant STEM recruitment mechanism for both campuses.

GOAL 4 – PROVIDE PROFESSIONAL DEVELOPMENT FOR TEACHER LEADERS WHO SERVE AS MENTORS AND ACADEMIC COACHES IN SUPPORTING TEACHER CANDIDATES IN CO-TAUGHT CLASSROOMS, YEAR-LONG RURAL TEACHING RESIDENCIES, AND NEW TEACHERS DURING THEIR TWO YEAR INDUCTION EXPERIENCE

Objective 4: *Professional Development services will ensure teacher candidates, new teachers and teacher leaders obtain knowledge and skills to implement Common Core State Standards,*

*Next Generation Science Standards, and effective teaching practices identified and described by the partnership based on empirically developed and research based practices.*

Professional development of existing teachers is important for the Cal Poly and CSUMB credential programs and their partner districts. More highly qualified co-teachers will improve the credential programs since the clinical experience accounts for at least half of the program. Recently, California has implemented Common Core State Standards (CCSS) and Smarter Balanced Assessments, with NGSS to follow. Districts need their teachers to understand these new standards and adapt to the new and different expectations. For this reason, Cal Poly and CSUMB will work with teacher leaders within their partner districts to design and offer professional development workshops to support CCSS and NGSS. By including teacher leaders from our high need partner districts in both the planning and implementation phases of our professional development, we can ensure local, onsite support will be available to schools throughout the year.

Over the last two years, Cal Poly has developed the structure to offer a number of professional development opportunities for local teachers. In the summer of 2013, School of Education faculty offered a week-long Common Core math and literacy workshop for 100 elementary teachers and CESAME offered a two-week long workshop on modeling physics, which addresses NGSS. In the summer of 2014, math education faculty offered a week-long Common Core mathematics workshop for secondary math teachers; CESAME offered three modeling workshops in physics, chemistry, and biology; a week-long workshop for Noyce and Science Teachers as Researcher (STAR) fellows; and a week-long simulation workshop (using computer simulations in science instruction), which addresses NGSS.

CSUMB will replicate many of these programs as its new appointment faculty, working with Cal Poly CESAME staff and faculty, develop a CESAME equivalent at CSUMB. Needs assessments and discussions with partner superintendents indicate an overwhelming need for professional development in Common Core and addressing the needs of English learners across all content areas. Cal Poly and CSUMB plan to utilize grant funds to meet this critical need.

In addition to the needs of our local districts, Cal Poly and CSUMB also have needs of our own. At both campuses, it is critical that our cooperating teachers understand and can effectively implement co-teaching strategies.

Cal Poly and CSUMB faculty will work with local district teacher leaders (including on-site/district coaches where applicable) to develop and implement workshops to meet both district and university needs. Following each workshop, teacher leaders and/or onsite coaches will then continue supporting teachers throughout the year.

In the first year of the grant, Cal Poly will offer professional development including incentives (stipends and housing support) for teachers from rural and remote partners to attend professional development. In the following years, professional development will continue at Cal Poly but also expand to CSUMB and more densely populated rural areas such as King City and Santa Maria. In an effort to reach the teachers in the more remote areas of our service region, the partners will also explore ways to deliver professional development online. We will begin by exploring current online options like the online modeling physics workshop developed and supported by the Physics Teacher Education Coalition (PhysTEC) and the American Modeling Teachers Association. In this model, teachers perform experiments locally and then come together for discussions online. Cal Poly and CSUMB will draw upon the success of this

program to develop additional programs specifically targeting the needs of our local high need partner districts.

**Response to the evaluative criteria (45 points)**

The proposed project is supported by strong theory

The continuum of teacher education proposed for this project is grounded in a set of high-leverage, effective teaching practices garnered from empirically based, research supported practices including the work of C. Danielson, The SIOP model for English language learners, the edTPA and other sources aligned with the reform elements of Absolute priority 1. Additionally, CSUMB and Cal Poly will focus their teacher preparation curricula on a year-long intensive clinical experience with the co-teaching model, supported by research identified by the authors of NCATE’s blue ribbon panel report, *Transforming Teacher Education Through Clinical Practice*, the co-teaching model as developed at St. Cloud State University. Theory based enhancements to our programs in curriculum (by threading reform elements of this competition and effective teaching practices through the entire continuum), and clinical training (co-teaching in year-long placements) will be continuously improved by using data relating to K-12 student success in co-taught and induction classrooms provided by iResult LLC.

Training and professional development to be provided by the project have sufficient quality, intensity, and duration to lead to improvements in practice among the recipients of the services.

The structure of our professional development programs will respond to the theory based recommendations of Guskey (2002) and Sparks (2002). Their research indicates the high quality professional development has several important characteristics. First, it is sustained through a period of time that includes opportunities to attempt new skills and knowledge in classrooms with support through academic coaching. While workshops may be offered over the

summer, they must be followed up in the academic year with supportive workshops or meetings that are contextualized, meaning that support for the application of the skills takes into consideration the unique circumstances of student populations, school resources, curriculum and scheduling limitations. Secondly, modeling and academic 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 includes further modeling of critical elements of the professional development in need of practice.

The proposed activities constitute a coherent, sustained program of training in the field.

Through the collaborative selection of high-leverage effective teaching practices that will be used to guide the teacher education continuum of our partnership, candidates will experience a coherent and sustained development of reform elements of Absolute Priority I and other research-supported effective teaching practices from early undergraduate field experiences that introduce young students to teaching through to professional development for the professional learning community of faculty and service providers. Most importantly, this shared body of knowledge will be applied coherently from one level of preparation to the next by mentors, co-teachers, and clinical faculty as they work across different cohorts and populations of educators. For instance, mentors will develop the continuum of effective teaching practices from pre-service clinical training to induction. To sustain the coherence in the continuum, Cal Poly and CSUMB will model these practices for the professional development of the partnership.

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

At each level of the teacher preparation continuum, appropriate partners collaborate to maximize the quality of the services to be received by new and prospective teachers and K-12 students in the partner high-need districts and schools. In undergraduate early field experiences at Cal Poly, content faculty collaborate with education faculty to develop rich experiences for all participants. These activities will be replicated at CSUMB through the development of their own CESAME programs.

Pre-service activities also include close connections between pedagogy courses and field experiences through the co-teaching approach as it is modeled in university courses by campus faculty and TIR at Cal Poly and by campus faculty and clinical faculty at CSUMB. Subsequently, both campus faculty, TIR, and/or clinical faculty share supervision responsibilities to ensure coherence between the campus and the field.

As candidates move through Residency at CSUMB or Residency-like experiences at Cal Poly, co-teachers, site based mentors, clinical faculty and campus faculty of the university will provide support to classroom instruction, both to the resident and to the hosting cooperating teacher. All of these service providers and the service recipients are part of an extended professional learning community, acquiring new skills and insights through action research to meet the challenges of the CCSS, the NGSS as appropriate, and the mastery of reform elements described in Absolute Priority I.

The project applicant has the resources beyond the length of the grant, and the applicant has a multi-year financial and operating model and accompanying plan; the demonstrated

commitment of our partners, with broad support from stakeholders critical to the project's long term success.

The long term success of the project and continuing operations beyond the period of federal funding have been built into the work plan, the project timeline, and the budget of the program. For instance, the budget reveals a decline in support for residency stipends from federal sources following the third year of operation which reflects the intent to make the residencies attractive and less dependent on stipends to attract teacher candidates to rural schools. Currently, CSUMB requires candidates near its campus to complete a co-teaching placement of equal duration to a residency without offering stipends, so we believe this goal is achievable.

A significant goal of the project is to meet the challenge of providing services to rural and remote schools between, but distant from, CSUMB and Cal Poly. Currently, neither institution can provide pre-service and induction support services to these settings within cost parameters, but we will develop a cost sharing plan for support providers and sustain them overtime. For instance, both Cal Poly and CSUMB will contribute to support expenses for clinical supervisors and induction support providers.

Our qualifying school district partners have made substantial match allocations from years three through five of the grant, indicating their commitment and valuing of project activities, including professional development, induction support, and co-teaching. CSUMB and Cal Poly, in developing online delivery of professional development and courses for our rural and remote partners, particularly to support pre-service residencies in rural settings, and cost sharing of critical mentoring and other support services, are building capacity to provide all

features of the teacher education continuum to our rural school partners beyond the period of funding.

Our project timelines indicate a number of milestones, many of which are met in year three, others in year five, that describe curriculum structures, sustainable services, and other features specifically intended to be in place for the continuation of activity beyond the period of funding. Examples of fifth year milestones include:

“Cycles of review of pre-service curriculum established as annual practice,

A cycle of continuous evaluation and improvement of effective reading instruction”

*We have broad support for this project* beyond our three county offices and ten school district partners. In Appendix G, the 100Kin10 organization recognizes our partnership with their organization and recommends our project for funding, in part due to the Cal Poly STAR program that places pre-service STEM educators in federal research labs. Michael Kirst, President of the California Department of Education, Mary Sandy, Executive Director of the Commission on Teacher Credentialing, and Shelly Masur, CEO of the California Department of Education Foundation have also provided letters of support for our contribution to meeting their corresponding educational goals.

### **Quality of the Management Plan (20 points)**

The Central Coast Partnership for Teaching Excellence envisions broad and significant improvements to teacher education for prospective teachers and educators new to teaching at CSUMB and Cal Poly, three county offices of education, and ten high-need LEAs. In recognition of the scope and complexity of this undertaking, we have developed a project management organization and structure intended to achieve all the goals and objectives of the

project and to meet all statutory reforms and improvements stipulated in the teacher quality partnership grant application (see organization chart for project management in Appendix H.)

### ***Core Management Team***

Dr. Mark O’Shea, Professor of Education at CSUMB, will serve as Project Director, chair of the core management team, and leader of the CSUMB component of the partnership. He 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 H) and the prudent use of resources to achieve project ends. Other members of the core management team include Dr. Chance Hoellwarth, Professor of Physics, Co-Project Director of the project and leader of the Cal Poly campus component. He is also responsible for meeting all project outcomes including GPRA measures described in the evaluation plan. All county office of education and public school partners receiving a sub-contract and responsible for a work plan will be represented by a Co-Project Director designated by their superintendent. The management team will be joined by the external evaluator, WestEd, and a representative of iResult LLC, our research partner. The management team responds to direction from the executive council, the policy making, evaluation, and leadership group. The team will meet bi-monthly during the grant implementation phase of AY 2014-2015, and quarterly, at a minimum, thereafter.

### ***Executive Council***

Dr. Chance Hoellwarth, as the Co-Project Director, 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 core management team, executive leaders from each partner institution, iResult LLC and WestEd, our external evaluator. The executive council manifests the partnership, and it includes all key

constituencies in the project. The members include educational leaders from county offices of education and partner LEAs. The executive council includes the external evaluator and a senior leadership member of each high need LEA. It will also include an academic dean representing the College of Arts and Sciences at each of the two universities, and/or the department chairs of the content area subjects for which teacher education program revisions are taking place. The teacher education department chairs and deans of education, or their designees, complete the council. This important group will ensure the quality of the program by reviewing reports of progress made by the evaluator and reports provided from each entity receiving a subcontract and work plan. The executive council will meet at least once 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, it will receive reports of progress from each subcontracted unit, iResults LLC reporting on K-12 student success measures, and the external evaluator, WestEd.. Based on this information, the executive council will provide direction to the core management team, members of which lead subcontract operations with work plans.

### *Partners*

Each university campus, county office of education, or school district (LEA) receiving a sub-contract will constitute a local operating unit. These are the functional units of the program that do the work to meet goals and objectives. Each unit at a university will include the project director or co-project director at the setting, the Dean of Arts and Sciences, the Dean of Education, and faculty responsible for changes to the curriculum from both teacher education and liberal arts and sciences.

The management plan will guide the achievement of the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks and mechanisms for ensuring high-quality products and services.

The project work plan includes goals, objectives, activities, and responsible parties for meeting objectives, a timeline for each activity, and a benchmark or milestone for each activity of each objective. The responsibilities are attributed to one or more of the contracted or subcontracted partners.

In each program of the partnership, teacher education faculty, cooperating mentor teachers, university supervisors, and program participants will work together to develop the coherent teacher education curriculum. Coordinated and facilitated transfer of the candidate from prospective to new teacher status through the planning and implementation of a support process involving university faculty, university support providers, county office and school district induction experts, and school district support providers. This will lead to a seamless transition from the prospective teacher as member of a professional learning team to a new teacher supported by an induction program.

The key project personnel have the qualifications, experience, and relevant training

Dr. Mark O’Shea has extensive experience in the operation of federally funded projects leading to the successful achievement of goals and objectives. He has served in every level of teacher education administration from program coordinator to dean of education. Dr. Chance Hoellwarth, Professor of Physics, has served as a coordinator of teacher education for secondary and elementary level teachers, and he is co-director of CESAME at Cal Poly. The members of the executive council consist of deans and department chairs at our respective universities and superintendents and designees with fiduciary responsibilities for their school districts.

The extent to which performance feedback and continuous improvement are integral to the design of the proposed project

The organizational chart provides the structure and membership of the core management team, the executive council, and the local operating units. The local operating units at LEAs will include mentors and coaches for co-teaching experiences and induction program leadership for and any personnel responsible for teacher recruitment. Objectives and tasks are delegated to the local operating units. These delegated responsibilities appear in the work plan of the project found in Appendix H. The local units will be accountable to the executive council for the achievement of goals and objectives at each funded setting. The local teams will be led by the Project Director or a Co-Project Director and these unit leaders will report on progress at meetings of the executive council. Other members of the unit will appear to report on progress in the achievement of goals and objectives as they share in accountability for outcomes. The executive council will meet once each year to review progress in the achievement of project goals and objectives. The council will determine the direction of future activity and it will direct the management team to take necessary actions to achieve goals and objectives of the project. The management team will then direct each campus or funded LEA unit to take actions needed to fulfill the expectations of the executive council. Through this process of delegating, reporting, evaluating, and revising, a continuous cycle of project evaluation and continuous improvement will guide the work of the project.

**Project Evaluation (20 points)**

Evaluation Overview

WestEd will be external evaluator for the CSUMB/Cal Poly Teacher Preparation Initiative. The external evaluation will be objective and performance driven, utilizing both

quantitative and qualitative data as appropriate. Specifically, WestEd will collect and analyze quantitative data on Government Performance and Results Act (GPRA) and Higher Education Act (HEA) performance measures on proposed goals, objectives and outcomes. In addition, WestEd will collect and analyze qualitative data to contextualize and explicate quantitative findings, and maintain all data in a longitudinal database to gauge progress and allow for within- and cross-cohort comparisons. WestEd will provide annual summaries of the quantitative teacher and student outcomes, including the GPRA and HEA performance measures, and will report progress on measures and evaluative findings to multiple audiences, including ED and program stakeholders, via Annual Performance Reports (APR), narrative reports, and timely memoranda and presentations to the project management team and advisory board.

The evaluation approach will also employ a quasi-experimental design (QED) to assess whether the initiative results in improved teacher and student outcomes relative to traditional teacher preparation and induction programs. WestEd will compare findings on performance measures for CSUMB/Cal Poly participants with national and state standards of excellence in teacher preparation as well as with outcomes of other credentialing. The CSU Center for Teaching Quality (CTQ) will provide the evaluation with comparison group data for teacher candidates at the CSU and state levels.

#### Data on Teacher Candidate Recruitment and Selection

To gauge progress on recruitment and selection, we will assess project measures on recruitment targets; selection rates; candidates from underrepresented groups; candidates with STEM- and education-related backgrounds (based on prior employment, career path, major, advanced degrees, and granting institutions); GPA; California Subject Examination Test results;

Selection Day ratings; declared subject matter preparation area and certification; motivations for selecting preparation at CSUMB or Cal Poly, motivation for selecting teaching as a career, and attitudes and beliefs about teaching STEM-related subjects. These data will be collected from CSUMB/Cal Poly program documents and from teacher candidates through annual surveys.

#### Data on Teacher Preparation

GPRAs measures assessed related to teacher preparation include **GPRAs Short-Term Performance Measure 1: the percentage of program participants who were not scheduled to graduate in the previous reporting period and persisted in the postsecondary program in the current reporting period.** Data for this measure will be collected via CSUMB/Cal Poly archival program data. Project measures regarding teacher preparation will also assess candidates' specific subject matter preparation area; similarity of mentor-candidate certification; quality of preparation (i.e., the extent to which different preparation components contribute to candidate perceived self-efficacy for teaching); candidate progression in teaching responsibility, as measured by time spent teaching and breadth and depth of instruction (e.g., lesson planning and teaching versus unit planning and teaching; and teaching practices learned as measured by pedagogical methods employed (e.g., instructional practices aligned to the Common Core or Next Generation Science Standards). Data on these measures will be collected via review of preparation program documents, semi-annual surveys of residency candidates and mentors, and mentor-candidate logs documenting residency activities.

#### Data on Graduation and Certification

GPRAs and HEA each require measures related to graduation and certification. As such, WestEd will assess **GPRAs Performance Measure 1: the percentage of program completers who attain initial certification/ licensure by passing all necessary certification/licensure**

**assessments and attain a master’s degree within two years of beginning the program.** The data on degrees and specific teaching certifications, including authorized subject matter, grade spans, and award dates, will be obtained from CSUMB and Cal Poly. In addition, WestEd will verify data on degrees and certifications obtained with those from CTQ. In addition, WestEd will assess **GPRA Performance Measure 3: Improved Scores, the percentage of grantees that report improved scaled scores initial state certification/licensure of teachers from the program, and the HEA measure - improvements in the pass rates and scaled scores for initial state certification or licensure of teachers.** These data on teacher preparation candidates’ scores on the state licensure exams, the California Subject Examination Tests, will both be collected directly from CSUMB/Cal Poly program documents and verify the scores with those archived by CTQ. Finally, to assess achievement for prospective teachers, we will collect results from the California Teacher Performance Assessment (edTPA) directly from the preparation program and verify these data from CTQ.

Data on Teacher Placement

As noted above, HEA requires **a measure of achievement for all prospective and new teachers, as measured by the eligible partnership.** For new teachers, WestEd will collect results from teacher evaluation protocols compiled by human resource departments of the ten partner districts, a process which will be formalized with data sharing MOUs between WestEd, CSUMB, Cal Poly, and the partner LEAs. HEA also requires measures regarding hiring, subject areas taught, and the extent to which teachers are placed in high-need areas and schools. Specifically we will assess the percentage of highly qualified teachers:

- (1) hired by each of the ten high-need LEAs participating in the partnership;

- (2) who are members of underrepresented groups (e.g., African-American, Hispanic/Latino, or Native Hawaiian or other Pacific Islander);
- (3) who teach high-need academic subject areas of mathematics and science;
- (4) who teach in high-need areas, specifically special education;
- (5) who teach in high-need schools, disaggregated by the elementary school and secondary school levels among the ten partnering LEAs.

All data related to these measures will be collected annually from the teacher preparation program and surveys of its graduates and will be verified with data obtained directly from districts' human resource departments and CTQ.

#### Teacher Retention

WestEd will obtain HEA- and GPRA-stipulated measures of teacher retention, Specifically, the evaluation team will collect data on **the HEA measure of retention during the first three years of a teacher's career**. In addition, the team will collect data on three GPRA measures, which are the percentages of beginning teachers who are retained in teaching in:

- (1) the partner high-need LEA one year after being hired by the LEA (**GPRA Short Term Performance Measure 2**);
- (2) the partner high-need LEA three years after being hired by the high-need LEA (**GPRA Performance Measure 2**); and
- (3) the cost of a successful outcome where success is defined as retention of the teacher in the partner high-need LEA three years after the teacher is hired by the high-need LEA (**Efficiency Measure**).

WestEd will calculate annual retention rates using the initial number of graduates per cohort, not the number of teachers remaining in the cohort in the prior year. Annually we will collect

directly from the ten partner LEAs' human resources departments to determine the CSUMB/Cal Poly teachers retained in teaching from each cohort. WestEd will also gather information about any CSUMB/Cal Poly graduates from the initiative who resigned a teaching position or obtained a non-teaching position, and the new positions within or outside the district assumed by the former teachers. Analyzing these data will yield findings for all retention measures. Budget reporting of both grant and in-kind expenditures in APRs will provide the fiscal data necessary to determine the cost per successful outcome, i.e., a per capita cost, of teacher retention for three years after initial employment.

### Student Learning Outcomes

In alignment with **GPRA Performance Measure 4 - the percentage of grantees that report improved aggregate learning outcomes of students taught by new teachers**, WestEd will collect data on learning outcomes of students at four different points in the CSUMB/Cal Poly teacher preparation process: (1) twice during the early field experience/residency; (2) induction; (3) and following receipt of professional development. Student data will be de-identified will include scores from English language arts (ELA) and mathematics Smarter Balanced assessments and future science assessments to be used in California (i.e., assessments based on the Next Generation Science Standards or the science California Standards Tests).

### Data on Project Implementation

We will also collect data on program implementation, including the collaboration among partners, development of new curriculum and professional development, selection of mentor teachers, and the operationalization of the 18-month MA program and two-year induction in STEM education. A clear understanding of CSUMB/Cal Poly initiative will enable the evaluation team to suggest ways in which outcomes may be related to specific initiative

components, highlighting which of these may be most critical, for whom, and under which conditions. Monitoring the implementation fidelity of an intervention requires a clear account of the model in theory, the particular context of implementation, and a nuanced and dynamic picture of what is actually happening. Our evaluation will attend to each of these three components. First, we will ground the evaluation in a well-articulated logic model (see Appendix H). Second, we will review program documents and interview key stakeholders to develop a meaningful picture of the initiative's context. Third, to assess the extent to which components of the initiative are being implemented, we will interview teacher leaders, mentors, residents, inductees, and faculty and staff from CSUMB and Cal Poly, using protocols with both open and closed-ended questions.

To facilitate acquisition of comparison teacher data we will develop a data sharing MOU with the CTQ. Beginning in early 2014, CTQ began developing an integrated data collection system that consolidates several existing but previously unconnected data collection efforts across all 23 CSU campuses. The CTQ is implementing a longitudinal data system that compiles measures of professional educator practice as well as evidence of improved student learning into a coherent, centralized system. Data elements in the expanded CTQ database include many of the same elements we propose to collect via project surveys and program documents and archives. CTQ data elements are: (1) CSU program applicant data (e.g., undergraduate institution and GPA; CSET results; demographic information); (2) CSU program completer and credential data; (3) school placement data; (4) CSU Teacher Preparation Exit Evaluation results; (5) teacher retention data; (6) teacher performance assessment data; (7) annual Survey of First-Year CSU Teaching Graduates results; and (7) annual Survey of School Principals and Supervisors of First-Year CSU Teaching Graduates results. WestEd will these

CTQ data to verify survey data, while relying on survey data to provide timely findings and feedback to CSUMB and Cal Poly.

#### Analysis of Teacher and Student Outcomes Using a QED

In the final year of the evaluation, we will use the QED to address whether the CSUMB/Cal Poly model is more effective at preparing teachers than traditional teacher preparation programs. Waiting until the final year of the evaluation will allow us to pool data from all available appropriate cohorts to increase our sample size. The teacher outcome variables for the QED will be measures of teacher preparation drawn from the Survey of First-Year CSU Teaching Graduates and the Survey of School Principals and Supervisors of First-Year CSU Teaching Graduates (available through CTQ, and offering a basis for comparing CSUMB/Cal Poly teachers to teachers statewide in traditional programs), teacher performance as measured by the edTPA, teacher placement in a high-needs school, and teacher retention. Student outcomes will include scores from English language arts (ELA) and mathematics Smarter Balanced assessments and future science assessments to be used in California (i.e., assessments based on the Next Generation Science Standards or the science California Standards Tests).

A central challenge in estimating the relationship between teacher residency programs and teacher and student outcomes is disentangling the effects of the program from the effect of participant selection. For example, does the program improve teacher instructional practice, retention in the profession, and student learning, or would the types of prospective teachers who apply and are admitted to the residency program exhibit these desirable outcomes no matter what type of preparation program they attended? This is a particular concern with teacher residency programs, which, while offering candidates small living stipends, often preclude the

opportunity of working part-time and consequently tend to draw a relatively younger and more affluent cohort of teacher candidates than traditional preparation programs. To address this threat of selection bias, WestEd proposes to utilize a Euclidean distance matching technique to identify an appropriate sample of candidates from traditional teacher preparation programs at CSUMB/Cal Poly.

The purpose of matching is to create groups that are equivalent on the observable pre-intervention variables known to be related to the outcomes of interest so that post-intervention differences can be causally attributed to the preparation program (Shadish, Cook, & Campbell, 2002). There are two other matching algorithms used frequently by researchers to identify comparison groups: propensity score matching and Mahalanobis distance matching (Guo & Fraser, 2010; Stuart, 2010). Propensity score matching is the most well-known method but requires a large sample size to reliably create well-matched comparison groups (Luellen, Shadish, & Clark, 2005). When the number of treatment teachers is small, scaled Euclidean and Mahalanobis distance matching are better options (Judkins, 2013). We plan to use scaled Euclidean distance matching because it will allow us to more heavily weight the baseline achievement measures than the demographic variables when identifying matches. In addition, we will utilize a one-to-many matching strategy (i.e., each CSUMB/Cal Poly teacher will be matched to multiple comparison teachers), if possible, in order to improve the statistical power of the analyses (Shadish et al., 2002). Once we have obtained the data, we will confirm that Euclidean distance matching is the most appropriate matching technique given the size and composition of the treatment group and pool of comparison teachers. We will also consider Mahalanobis distance matching, propensity score matching, and propensity score weighting.

For teacher level outcomes, we will identify teachers in traditional preparation programs as matches for CSUMB/Cal Poly teachers based on all available pre-treatment candidate background characteristics, financial information, and program information that are available from the CSU application process. For student level outcomes, we will further restrict the pool of matched teachers by forcing exact matches on the grade level and subject of candidates' teaching placement and additionally matching on the aggregate demographic and prior achievement characteristics of teachers' placement classrooms and schools. For student outcomes, it is necessary to match on the characteristics of candidates' teaching placement because the initiative program prepares new teachers in multiple subjects and grade levels, and the scaling of the Smarter Balanced assessments and the future science assessments will necessitate limiting the pool of potential comparison teachers to teachers assigned to the same courses or grades as the program graduates. For example, comparison teachers assigned to grade 4 will be the only potential matches for program graduates teaching the same grade whereas comparison teachers assigned to Algebra I will be the only potential matches for program graduates teaching the same course. Additionally matching on the aggregate demographic and prior achievement characteristics of teacher's placement classroom and schools will help to ensure baseline equivalence of student outcomes between students in the classrooms of teachers from CSUMB/Cal Poly and comparison teachers' classrooms. This is particularly important given the fact that the CSUMB/Cal Poly program is designed to place teachers in high-needs schools.

Following matching, we will calculate the standardized difference in the teacher-level means (i.e., the mean difference between the treatment and comparison groups divided by the pooled standard deviation) for each of the continuous achievement measures used in the

matching process. This type of numerical balance diagnostic will determine the quality of the matches. In accordance with the What Works Clearinghouse (WWC; U.S. Department of Education, 2014) guidelines for baseline equivalence, we will investigate the possibility of identifying a different potential pool of comparison teacher candidates if the differences between the treatment and comparison teacher candidates on the achievement measures are greater than 0.25 standard deviations.

Teacher-level impact analyses will pool outcomes across grade-levels and subject areas because the teacher outcomes (preparation, performance, placement and retention) are measured consistently across teachers. WestEd will compare outcomes for teachers prepared through the CSUMB/Cal Poly initiative to those of the matched sample using additional regression adjustment, controlling for key, pre-treatment, candidate-level characteristics. Since matching generally produces very similar, but not identical, treatment and control groups, analyzing the matched samples using regression models with additional controls helps minimize any bias due to inexact matching and is consistent with WWC guidelines (Rubin & Thomas, 2000; U.S. Department of Education, 2014).

For student outcomes, we will use hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002) to account appropriately for the nesting of students within classrooms and schools. The benefits of HLM are well documented for calculating accurate standard errors and significance tests with nested data. However, given the research demonstrating that estimation problems with HLM are more likely to occur when the number of higher-level units (i.e., the number of classrooms) is below 30 (Maas & Hox, 2005), we may encounter difficulties with the proposed analyses for some of the courses or grade levels with fewer program graduates. If estimation problems do occur using HLM, we will conduct regression analyses with a robust

variance estimator that relaxes the assumption that the students' scores are independent within classes (White, 1980). The student-level impact analyses will be conducted separately for each course and grade level. The impact analyses will include all of the variables used in the matching algorithm to select the comparison groups as control variables. After conducting the individual student-level impact analyses, we will calculate effect sizes based on each analysis. To calculate the effect sizes, we will divide the differences between the means for the students taught by program graduates and comparison students over their respective pooled standard deviations (WWC, 2014). This standardization method means that each grade level difference will be based on standard deviation units, which allows the differences across courses and grades to be compared to one another. WestEd will use meta-analysis to calculate an overall impact estimate in each year of the grade by averaging the impact estimates across courses and grades (Lipsey & Wilson, 2001), to gauge the difference between the mean achievement for students of CSUMB/Cal Poly-prepared teachers and matched students of matched comparison teachers. Specifically, the team will determine if the difference is equal to or greater than an effect size of 0.20, after accounting for control variables. An effect size of 0.20 would be equivalent to the teachers moving their students from the 50th percentile to the 58th percentile while the comparison teachers kept their students at the 50th percentile (Lipsey et al., 2012). Furthermore, an effect size of 0.20 is likely attainable based on a review of impact estimates from studies on prior educational interventions (Hill, Bloom, Black, & Lipsey, 2008).

The impact of teacher residency programs on teacher quality and student achievement is of import not only to CSUMB/Cal Poly but also to the CSU Chancellor's Office. Our evaluation plan fits into a broader context for investments in teacher preparation programs in the 23 campus CSU system. Several CSU campuses have submitted proposals for Teacher Quality

Partnership grants. As well, CTQ, hosted by the CSU Chancellor's office, has put in place longitudinal data collection on all CSU teacher candidates from the point of application to placement, and beyond. For this reason, our plan fits into a natural analytic frame that allows contrasts to be examined both within and across campuses. After the TQP awards are made, WestEd will collaborate with SRI International, also a proposed evaluator on several other CSU TQP grant applications, to identify opportunities to examine program contrasts and further data collection efficiencies that might be enabled through the TQP program.

The extent to which the methods of evaluation provide valid and reliable performance data on relevant outcomes.

WestEd will collect valid and reliable data on the proposed goals, objectives and outcomes of the program in accordance with the requirements of GPRA and HEA. Some of the data for the evaluation will be collected directly from the CSUMB/Cal Poly program. For data about teacher candidates, new teachers, and student learning, WestEd will collect results from teacher evaluation protocols compiled by human resource departments of the ten partner districts, a process which will be formalized with data sharing MOUs between WestEd, CSUMB, Cal Poly, and the partner LEAs. WestEd will ensure that the data collected between the various partner districts are comparable and can be aggregated for the analyses. Data for the evaluation will also include data from the CSU CTQ, which will provide comparison group data for teacher candidates at the CSU and state levels. In addition, to the extent possible (e.g., edTPA results), WestEd will validate data collected directly from CSUMB/Cal Poly by comparing to CTQ data.

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

WestEd plans to use the most rigorous research design and analytic techniques available given the nature of the program and given that a randomized-control trial is not possible. In the final year of the evaluation, we will use the QED to address whether the CSUMB/Cal Poly model is more effective at preparing teachers than traditional teacher preparation programs. A quasi-experimental design using matched comparison group provides a significant advantage over one-group designs. The comparison-group design improves WestEd's ability to make causal inferences. In addition, for student outcomes, WestEd will use HLM to account appropriately for the nesting of students within classrooms and schools.

The extent to which the methods of evaluation provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.

The data collected by WestEd can assist CSUMB/Cal Poly with periodic assessment of their program and the extent to which the program is achieving its goals. This is demonstrated in the timeline of the data collection and its relevance to the teaching program. For example, student performance data will be collected during several phases of the residency and induction phases of the program to help determine if the teachers are having a positive impact on this outcome during their pre-service clinical experience, as well as during the induction and post-induction phases of their careers.