

Distinguished Teacher in Residence Program
Checklist, Assigned Time Grant Proposal for AY 2019-20

(Submit with Proposal)

APPLICATION IS COMPLETE WITH:

Cover Sheet(s) with all required signatures	<input checked="" type="checkbox"/>
Check List	<input type="checkbox"/>
ATG Plan Proposal (to be submitted on the DTiR Assigned Time Grant Plan Proposal Template)	
Description of this as a new or continued project.	<input checked="" type="checkbox"/>
Objectives are clearly stated, measurable, aligned with standard(s), aligned with mission, and describe the population served.	<input checked="" type="checkbox"/>
Procedures are aligned with objectives and clearly stated.	<input checked="" type="checkbox"/>
Timeline is reasonable for units requested and includes evaluations at intervals.	<input checked="" type="checkbox"/>
Evaluation measures objectives, data collection, and analysis - yields useful.	<input checked="" type="checkbox"/>
Benefits are defined by outcomes for district and School of Education.	<input checked="" type="checkbox"/>
Previous grant reports if applicable are provided with evidence of efforts and successes.	<input type="checkbox"/>



DISTINGUISHED TEACHER
IN RESIDENCE

Distinguished Teacher in Residence Program

Plan Proposal, Assigned Time Grant for AY 2019-20

(Plan Proposal should not exceed 3 pages)

Title of Grant Proposal: Building community to support mathematics teachers' development and implementation of research-based instructional practices

Involved Faculty: Anthony Matranga

Faculty Position for Academic Year: Full Professor Associate Professor Assistant Professor FERPer

Partnering District(s): Escondido Union High School District

Proposal: <input checked="" type="checkbox"/> New Project <input type="checkbox"/> Continuing Project	Total Number of Units Requested:	6
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Signature(s):

<u></u>	<u>4.10.19</u>	<u></u>
<i>CSUSM Faculty Member, Signature & Date</i>	<i>CSUSM Faculty Member, Signature & Date</i>	<i>CSUSM Faculty Member, Signature & Date</i>
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<i>CSUSM Faculty Member, Signature & Date</i>	<i>CSUSM Faculty Member, Signature & Date</i>	<i>CSUSM Faculty Member, Signature & Date</i>

1. **Type of Project** Applied Scholarship in Educational Settings Conducting Research related to SOE Mission

2. **Area of focus** ELL STEM COMMON CORE OTHER:

3. **Proposed project.**
Describe and connect to the SOE Mission.

A collective effort by mathematics education researchers and professional developers is being made to support mathematics teachers' development and implementation of innovative and student-centered teaching practices. There is emerging consensus in regard to the nature of these practices in mathematics education as recent policy documents have outlined a set of research-based instructional practices that create opportunities for *all* students' success in mathematics. Bryan Meyer, mathematics education specialist at Escondido Union High School District

(EUHSD), is currently testing a 3-year professional development (PD) plan intended to support practicing mathematics teachers' implementation of research-based instructional practices. As part of this plan, EUHSD is interested in developing a model that is tailored to the needs of new and novice mathematics teachers and focuses specifically on supporting their development and implementation of evidence-based formative assessment practices. The goal of the project proposed below is to develop, test and refine an empirically-grounded PD model that can support the emergence of a community of new and novice mathematics teachers who engage in evidence-based formative assessment practices and support one another's continued implementation of these practices.

This project will consist of two iterations of a modified lesson study cycle, one during the fall 2019 term and one during the spring 2020 term with at least 5 new/novice mathematics teachers from EUHSD. Each lesson study cycle will include my facilitation of six group meetings with the following focuses: (1) introduce and discuss evidence-based formative assessment practices, (2) co-plan a research lesson, (3) rehearse the teaching of the lesson, (4) analyze artifacts (e.g. student work, teacher notes, lesson materials, etc.) from the research lesson, (5) co-plan a follow-up lesson, and (6) analyze artifacts from the follow-up lesson and revise the sequence of lessons. For each lesson study cycle, group members will co-teach and/or observe the research and follow-up lessons in their classroom. I will observe the research and follow-up lessons as well as debrief with participants after these lessons. In addition to leading the PD, I will conduct a grounded theory analysis of the following data sources: project participants' conversations during group meetings, artifacts from the group meetings, written reflections, observations of the research/follow-up lessons, student work from these lessons, and debrief conversations.

This project is aligned with the following aspects of the School of Education's mission: (1) Create community through partnerships; (2) advance innovative, student-centered practices; (3) inspire reflective teaching and learning; and (4) conduct purposeful research. These aspects of the SOE mission will be met through the following objectives:

(1) Developing, testing, and refining a PD model that will serve as a mechanism for building a community of new and novice EUHSD mathematics teachers. (2) Supporting EUHSD mathematics teachers' development and implementation of evidence-based formative assessment practices. (3) Supporting EUHSD mathematics teachers' reflection on their teaching practices, student thinking that emerges during their lessons, the relationship between the implementation of teaching practices and emergent student thinking, and the use of these reflections to inform lesson design as well as the continued refinement of teaching practices. (4) Analyzing EUHSD mathematics teachers' collaboration and facilitation of mathematics lessons to better understand the process by which they develop evidence-based formative assessment practices and to link particular PD activities, events and experiences to their movement along this trajectory.

4. **Detailed description of the activities.**
Provide a timeline.

NOTE: The equivalent time commitment for 3 units is approximately 135 hours and for 6 units 270 hours.

Preparation for Lesson Study Cycle #1 (June/July 2019): I will develop project participants' conjectured learning trajectory and a set of activities implemented throughout lesson study cycle #1 that might support participants in moving along this trajectory.

*NOTE: It is expected that this phase of the project will take 15 hours.

Implementation of Lesson Study Cycle #1 (Aug – Nov 2019): I will plan, facilitate, and reflect on the 6 group meetings. I will also observe the research lesson and follow-up lessons as well as debrief with participants immediately following the implementation of the research/follow-up lesson. Portions of this work will be in collaboration with Bryan Meyer.

*NOTE: The 6 group meetings and 2 observations are expected to take a total of 46 hours. Group meetings: Planning (4 hours), facilitating (2 hours), and reflecting (1 hour); a total of 7 hours per meeting. Observations: Preparing (.5 hour), observing (1 hour), and debriefing (.5 hour); a total of 2 hours per observation.

Ongoing Data Analysis ([Aug 2019-Nov 2019]/[Jan 2020-April 2020]): Beginning at the time of data collection (Aug 2019) and throughout the project, I will collect, organize and analyze project data.

NOTE: It is expected that this will take at least 80 hours (10 hours per month).

Evaluation of Lesson Study Cycle #1 (Dec 2019): This phase of the project will be (1) a means to begin to crystalize the PD model as a set of activities and an associated learning trajectory and (2) an initial evaluation of the extent to which the first lesson study cycle achieves the project objectives. In particular, I will look across my ongoing data analysis to identify themes in the data, which will serve as data for three tasks:

(1) Relating emerging themes in participants' activity to evidence-based formative assessment practices that are the focus of the project.

(2) Relating the emergence of these themes to particular activities, events and experiences such as (a) group meetings, (b) lesson study activities, (c) questions posed by the facilitator(s), (d) experiences from the research and/or follow-up lesson, and/or (e) debrief conversations.

(3) Organizing these themes and corresponding activities, events, and experiences that support the emergence of these themes along a continuum according to sophistication of practice in order to revise the conjectured learning trajectory developed during the initial phase of the project.

NOTE: It is expected that this phase of the project will take at least 30 hours (20 hours to identify themes in the data and 10 hours for the 3 tasks).

Preparation for Lesson Study Cycle #2 (Jan 2020): I will take artifacts from the "evaluation of lesson study cycle #1" phase to inform the development of project participants' conjectured learning trajectory for the spring 2020 term and a set of activities implemented throughout the lesson

study cycle #2 that might support participants in moving along this trajectory. This process will ensure that Lesson Study Cycle #2 supports participants in building on their current evidence-based formative assessment practices. The process will also ensure that the project allows for and supports participants in building on unanticipated but potentially significant practices that emerge during lesson study cycle #1.

*NOTE: It is expected that this phase of the project will take 15 hours.

Implementation of Lesson Study Cycle #2 (Jan - April 2020): This phase of the project will be the same as the implementation of lesson study cycle #1 with the same amount of anticipated time (46 hours).

Evaluation of Lesson Study Cycle #2 (May 2020): I will use the same process discussed above in the “evaluation of lesson study cycle #1” section, but with data collected from lesson study cycle #2. In addition, I will develop a report that documents the PD model (as a learning trajectory and an associated set of activities) so (1) I can further refine the model for future implementation and (2) PD leaders at EUHSD as well as other local school districts could adapt and implement the model.

NOTE: It is expected that this phase of the project will take at least 38 hours: 20 hours to identify themes in the data, 10 hours for the 3 tasks discussed in the “Evaluation of Lesson Study Cycle #1” section, and 8 hours to develop the report.

5. **End result.**
Project the anticipated outcomes.

This project has four anticipated outcomes: (1) New and novice EUHSD mathematics teachers’ development and implementation of evidence-based formative assessment practices. (2) The evolution of a community of new and novice EUHSD mathematics teachers who mutually support one another in the continued implementation of evidence-based formative assessment practices. (3) A community developed digital archive of lesson plans and associated implementation guides that can be accessed by anyone who is interested and serve as an entry point for new participants into the community. (4) An empirically-grounded PD model that documents EUHSD mathematics teachers’ learning trajectory and the associated set of PD activities that supported the teachers in moving along this trajectory.
