Ancillary Unit Annual Report

Basic Information	
Ancillary Unit's name	**Center for Enhancement of Mathematics Education**
Director(s)	**Kelli Wasserman, Department of Mathematics**
Administrator to whom the unit reports	**Dr. Sastry G. Pantula, Dean, College of Natural Sciences**
Purpose and current goals (as approved by Faculty Senate)	CEME's mission is to meet the challenges of high dropout rates, low academic achievement in mathematics, and under-credentialed mathematics teachers by addressing the continuum of mathematics education from kindergarten through college. Its primary focus is to develop and enhance strong content knowledge and pedagogical skills among preservice and inservice teachers. The ultimate goal is to improve readiness for college among students in the region, contributing to CSUSB Strategic Plan Goal 1 (Student Success). Contracts with K-12 districts and grants from state, federal and philanthropic agencies fund much of this work, contributing to Strategic Plan Goal 3 (Resource Sustainability and Expansion). Projects that form a basis for lasting partnerships with school districts and county offices of education contribute to Strategic Plan Goal 4 (Community Engagement and Partnerships).

Advisory Board	
Member	**Affiliation**
Kelli Wasserman	**Director, CEME Mathematics Faculty**
Madeleine Jetter	**Co-Director, CEME Mathematics Department Chair**
Jeremy Aikin	**Co-Director, CEME Associate Professor of Mathematics**
Lynn Scow	**Faculty Advisor, CEME Assistant Professor of Mathematics**
Davida Fischman	**Former CEME Director, Emeritus Professor of Mathematics**
Carol Cronk	**Coordinator, Math & Science Program VVUHSD**
Lela Spearsharper	**Program Specialist - Lead Teacher and Mentor, Teacher Induction Program, SBCUSD**
Xinying Yin	**Associate Professor, College of Education**
Iris Riggs	**Professor, College of Education**

Shawnee McMurran	**Professor, Mathematics Department**
Corrine Johnson	**Assistant Professor, Mathematics Department**
David Polcyn	**Professor, Biology Department**

Activities during previous academic year (2019-2020)			
Activity (please describe)*	**Funds spent****	**Funding Sources**	**Goal advanced (and extent)**
CSET I Course: Algebra and Number Theory Institute We offer a 10 day (40 hours) course each year that focuses on increasing depth of content knowledge of the topics on the CSET I mathematics exam.	**$5,143.50**	MSTI	Advanced the goal of expanding the pool of qualified K-12 mathematics teachers in the region by building content knowledge to prepare mathematics teachers for the CSET I exam.
CSET II Course: Geometry, Probability and Statistics We offer a 10 day (40 hours) course each year that focuses on increasing depth of content knowledge of the topics on the CSET II mathematics exam.	**$6,563.17**	MSTI	Advanced the goal of expanding the pool of qualified K-12 mathematics teachers in the region by building content knowledge to prepare mathematics teachers for the CSET II exam.
Algebraic Thinking Workshop This four-day summer workshop was conducted virtually via 8 2-hour sessions. Participants learned strategies and routines for fostering algebraic thinking in Grades 3-8. They engaged in activities intended to help their students transition from algorithms to algebraic thinking, express generalizations about structure and functions, build on number sense, foster symbol sense, and link multiple representations of concepts. The Common Core Standards for Mathematical Practice were a major focus.	**$7,981.05**	ICMP	This workshop advanced our goal of developing and enhancing strong content knowledge and pedagogical skills among preservice and inservice teachers. Due to the sudden change to a virtual institute, the cap for this institute was reduced to 30. Twenty-two teachers attended from throughout Riverside and San Bernardino counties.
Dinner and a Math Problem-Monthly Workshop Each month, CEME holds a Dinner and a Math Problem event, which is one of the main activities of the Inland Empire Math Teachers' Circle. Dinner is provided and K-12 teachers spend 3	**$15,937.87**	ICMP MSTI	The goal of this activity is to build a broad network of math educators in the region who grow together in their ability to facilitate productive problem solving amongst their students. On average, 20 teachers attend this event. However, on several occasions, we met our

hours solving a math problem that is accessible and yet challenging to all.			capacity of 30 teachers and had between 30 and 60 teachers on a waiting list. This event has grown in popularity since 2015 and has become a staple math education event in our region.
Riverside San Bernardino County Math Teachers Association (RSBCMTA)- 3rd Annual Fall For Math Conference This is an annual conference that brings together TK-12 teachers from throughout our region to network, learn, and share about their practice. Much of the funding is provided by RSBCMTA, but the conference organization and planning is a collaboration between RSBCMTA and CEME.	**$966.00**	MSTI	For the past three years, this conference has taken place at CSUSB, thus advancing the goal of increasing the visibility of CEME and CSUSB as a leader in the region in mathematics education. Small stipends were offered to CSUSB students who volunteered to assist the organizers on the day of the conference, supporting these students' sense of belonging in the teaching profession.
The Early Teaching Experiences in Mathematics and Science (ETEMS) Internship: This program targets students who are interested in exploring the idea of teaching K-12 math or science. Students at CSUSB who are in the program are guided by faculty mentors at CSUSB, complete 20 hours of classroom observations in local schools, and work in groups of 2 or 3 to develop a Common Core based lesson, which they then implement in local classrooms.	**$12,798.61**	MSTI	From the inception of the program through June 2020, we have recruited 6 biology majors, 6 computer science majors, 1 geology major, 3 physics majors, 4 liberal studies majors, and 20 mathematics majors to participate in the program, for a total of 40 students. The primary goal of the program is to recruit math and science teachers for local high-needs school districts. Of the students who have participated in the program so far, at least 10 have either decided to pursue a career as a teacher or are currently teaching math or science in a local school district. There is currently a tremendous need for highly qualified math and science teachers in our region. We consider the program to be a success both when the experience helps students decide to become teachers, and when it helps students decide a teaching career is not for them.

Noyce Scholars in Mathematics and Science Phase III: Emphasis on building mathematical content knowledge and pedagogy in pre-service math and science teachers. Scholars are CSUSB math and science majors and are future secondary teachers. Through hands-on and intensive teaching experiences and a partnership with SBCUSD, the district is provided with highly qualified math and science teachers to fill the shortage.	**$97,860.85**	Noyce - NSF Grant MSTI	The academic year 2019-2020 was the second year in this 5-year $1.2 million NSF grant. We have met our goal of recruiting 14 students from CSUSB for this program during the first two years. Four of these students are currently teaching in SBCUSD and the remaining ten are working in the program this year. Phase III of the grant has new areas of focus that include an increase in recruitment of science majors to fill the shortage of science teachers in our region, as well as additional support for district mentor teachers in the area of mentoring new teachers; particularly subject specific mentoring. To this end, we have broader collaboration with science faculty at CSUSB and recruitment of science students (2 of the 10 students currently in the program are in science), and we have broadened our network of and support systems for mentor teachers in the SBCUSD
California Action Network for Mathematics Equity and Excellence (CANMEE): Inland Counties Lesson Study Support Hub CANMEE is a statewide network that was established about three years ago for the purposes of 1) increasing the use of and the support for lesson study across California as an effective form of teacher professional development; 2) promoting equity in mathematics education and increasing awareness of students' identity, access, agency, and authority in the context of learning mathematics.	**$2,550.20**	ICMP	CEME applied for and received one of three statewide grants in 2017 to establish the Inland Counties Lesson Study Support Hub (ICLSSH). In our first two years as a regional hub, we supported three lesson study teams in three separate school districts (Victor Valley UHSD, Murrieta USD, and Romoland SD). Our goal of supporting and increasing knowledge about traditional lesson study amongst the teachers and educational leaders in our region was accomplished. We continued supporting districts in Lesson Study professional development through early March 2020, when our work was suspended due to the COVID pandemic.

Fontana USD Lesson Study CEME entered into a contract with Fontana USD to provide mathematics lesson study professional development to district teachers. Lesson study continued into the 2019-2020 school year. Then four CSUSB mathematics faculty worked with 5 teams of 5-10 elementary and middle school teachers to set goals, study mathematics content, then plan, teach and observe a mathematics lesson, collecting data on student understanding and development of mathematical practices. This year, we added 10 hours of professional development with district coaches, as we worked to develop the capacity to facilitate new or continuing lesson study teams. We had planned to do a public lesson to further promote lesson study in the district. The planned lesson had to be canceled due to COVID.	**$19,741.08**	District Contract	Approximately 28 teachers and 3 coaches were scheduled to participate in 24 hours of lesson study between August 2019- May 2020. Each team determined their schedule, whether half days or full days, and dates. Some teams completed their scheduled time, while others work had to be suspended due to the COVID pandemic. The goal of Lesson Study is to help teachers improve their mathematics content knowledge and teaching practices through the study of mathematics that is relevant to their classroom practice and through the close observation of students during a collaboratively planned lesson. Through this work we have established what we hope will be a long lasting and productive partnership with one of our largest feeder districts.
TEEM: Teaching English Learners Early Mathematics The TEEM vision is to increase the proportion of English Learner (EL) students completing challenging mathematics courses by creating communities of inquiry among students, teachers and school leaders. Students engage in structured inquiry through the use of interactive notebooks in mathematics; teachers improve mathematics instruction by forming communities of inquiry supported by Summer Institutes and Lesson Study; and principals develop as instructional leaders in mathematics.	**$250,095.15**	Dept. of Ed Grant Heising-Simons Foundation grant	We received a no-cost extension enabling teachers who wish to continue engaging in lesson study to do so in the 2019-2020 academic year, with the goal of strengthening their content knowledge and improving teaching practices particularly in relation to English Learners. 19 teacher participants opted to continue in lesson study professional development with their TEEM facilitators. These teachers scheduled 6 days of professional development for the year, but not all teams were able to complete the work due to the COVID pandemic. We also conducted a 4-day virtual dissemination workshop attended by approximately 30 PK and Kindergarten teachers in the region.
Mathematics Department Peer Tutoring Center (Math Gym) The Math Peer Tutoring Center recruits and employs high achieving upper-level mathematics majors and graduate students to be peer tutors. Students	**$46,778.51**	MSTI	During 2019-20, each quarter the peer tutoring center employed between 8 and 9 upper level mathematics majors and mathematics M.A. students as tutors. The center was visited by

visit the center from a large variety of mathematics classes and deepen their understanding of the content.			hundreds of students each quarter (except in Spring 2020 when we switched to online tutoring due to COVID-19) and ran highly successful study marathons the Saturday before finals week during each quarter. (Study Marathon was cancelled for Spring 2020 due to COVID-19.) The study marathons were organized by the CSUSB Math Club and were attended by anywhere between 50 and 150 students, depending on the quarter.

***Annual evaluator reports for externally funded CEME programs are available upon request.**

****While we provide our best estimate of the funds spent for each activity, not all expenses associated with a specific activity can be isolated because the relationship between funding sources and activities is not one-to-one. For example, staff time charged to CEME's Inland Counties Math Project (ICMP) grant contribute to multiple ICMP activities (Dinner and a Math Problem, CSET Workshops, Summer Institutes) and it would be a burden on staff to separately track their hours for every individual ICMP-funded activity.**

Use of funds				
	Internal funds		**External funds**	
	Previous academic year	Current academic year (projected)	Previous academic year	Current academic year (projected)
A. Salaries	$ -	$ -	$ 192,679	$ 272,800
B. Assigned time	$ 14,304	$ -	$ 67,932	$ 92,790
C. Telephone/fax	$ -	$ -	$ 1,026	$ 1,200
D. Office supplies	$ -	$ -	$ 108,098	$ 9,500
E. Other	$ (6,722)	$ (3,353)	$ 229,508	$ 812,000
Total	**$ 7,582**	**$ (3,353)**	**$ 599,244**	**$ 1,188,290**
On a separate sheet, please itemize A., B., and E.				

	Internal Funds		***External Funds***	
	Previous academic year	*Current academic year (projected)*	*Previous academic year*	*Current academic year (projected)*
A. Salaries				

Student Assistant	$ -	$ -	$ 4,962	$ 17,000
StuAsst-Instructional SA (ISA)	$ -	$ -	$ 27,301	$ 25,000
SupStaffSal-Salaries	$ -	$ -	$ 111,309	$ 170,000
AcadSal-Consultant-Faculty	$ -	$ -	$ 20,376	$ 5,800
SupStaffSal-Vacation Accrual	$ -	$ -	$ 800	$ -
Benefits	$ -	$ -	$ 21,940	$ 55,000
Total	**$ -**	**$ -**	**$ 186,688**	**$ 272,800**
B. Assigned Time				
AcadSal-Release Time	$ 14,100	$ -	$ 51,964	$ 76,339
Benefit-Release Time	$ 204	$ -	$ 15,968	$ 16,451
Total	**$ 14,304**	**$ -**	**$ 67,932**	**$ 92,790**
E. Other				
Contract Services	$ -	$ -	$ 153,268	$ 100,000
Subrecipient for grants	$ -	$ -	$ 18,667	$ 350,000
Participant Support	$ -	$ -	$ 54,664	$ 120,000
Travel	$ -	$ -	$ 4,885	$ 12,000
Meeting Expenses	$ 36	$ -	$ 7,910	$ 90,000
Transfers-FND btl	$ (6,758)	$ (3,353)	$ (6,758)	$ -
FDN Indirect Cost-Federal/State/Other	$ -	$ -	$ 83,827	$ 134,000
Admin Costs-5%GiftFee	$ -	$ -	$ -	$ -
Total	**$ (6,722)**	**$ (3,353)**	**$ 316,462**	**$ 812,000**

Activities planned for the current year (2020-21)

1. The Inland Counties Mathematics Project will continue to plan and implement professional development institutes; partnerships with schools, districts, and counties; and innovative mathematics curriculum for secondary schools. We are currently surveying CEME stakeholders to help determine the topic of ICMP's annual June workshop.

2. The recently funded ($1.2 million from the NSF) Noyce Scholarships Project Phase III will continue working with Noyce Scholars and mentor teachers: offering virtual monthly seminars on teaching for Scholars and Mentor teachers as well as ongoing mentoring through class observations, instructional rounds, student teaching, and academic advising. We will

continue strengthening coordination and collaboration between the natural sciences faculty and education faculty. In addition, we will continue to provide mentor teachers with professional development and ongoing support to enhance their positive impact on scholars and to support their transition to teaching Common Core State Standards—Mathematics.

We currently have 11 mentor teachers and 10 scholars active in the program. The project includes the following main components for Scholars:

- Financial assistance of up to $10,000/year to each Scholar for up to three years
- Observations and debriefing with a mentor teacher for each Scholar
- Participation in monthly seminars on teaching mathematics
- Participation in instructional rounds in SBCUSD classrooms
- Professional development around content-specific pedagogies and working with the diverse student population in San Bernardino.

3. MSTI-TRP projects: MSTI-TRP funds are meant to support increased numbers of credentialed teachers in mathematics and science. Some of these funds will continue to be used to support the Mathematics Peer Tutoring Center (affectionately known as Math Gym) in which upper division math majors and graduate students tutor lower division and beginning upper division math majors in major subjects. In September 2019, the Math Gym began implementing a login kiosk via EAB; by collecting student participation data electronically we hope to gain information about the impact of peer tutoring. Additionally, funds will continue to be used to support mathematics and science majors in the Early Teaching Experiences in Mathematics and Science (ETEMS) scholarship described above. MSTI funds are also partially used for two CSET Content Institutes (40-hour per subtest) offered through the CSUSB Center for Enhancement of Mathematics Education and the Inland Counties Mathematics Project. In addition, we have allocated 2019-2020 funds to:

- Support a tutoring program in computer science
- Support the development of a Computer Science Supplemental Authorization program, in order to increase the number of qualified K-12 Computer Science teachers and improve schools' capacity to deliver four years of quantitative reasoning coursework to all students
- Support learning assistants and tutors in physics

5. Due to the COVID pandemic, district-wide lesson study has been put on hold. The plan is to continue the work with the Fontana Unified School District, as soon as the district feels ready. Currently, teachers are feeling overwhelmed trying to learn how to teach virtually. This is part of our continuing work as one of the three CANMEE Lesson Study Support Hubs in California.

6. With the challenges associated with the COVID pandemic and distance learning, we have made the decision to host a community virtual workspace in Slack for the Inland Empire Math Teachers' Circle rather than hosting our usual monthly Dinner and a Math Problem workshops on campus. While approximately 40 regional teachers have joined the workspace and have utilized it as a networking and communication platform, we are anxious to get back to holding problem-solving workshops in person again. During the spring 2021 semester, we will begin hosting virtual problem-solving sessions through Zoom. We are aware of the challenges associated with this, but we also know that many teachers are in need of a space to come together to share challenges and successes, and to just do some math.

7. We are working to maintain the CEME office's capacity to support new and existing projects in a sustainable fashion. In January 2020 a new Office Specialist III, Tawney Hall, joined CEME staff. We intend to hire a minimum of one additional staff member and one student assistant in the coming months, in hopes of maintaining appropriate support for both our UEC and State funded projects.

Kelly Wasserman (Nov 23, 2020 11:02 PST)

Director Signature

Madeleine Jetter

(Co-)Director Signature

Jeremy Aikin (Nov 23, 2020 15:07 PST)

(Co-)Director Signature

Unit Reporting Person recommendation	
Name and title:	
	Keep on active status.
	Move to probationary status.
	Move to inactive status.
Recommendations and comments:	

Unit Reporting Person Signature

Date

Educational Policy and Resources Committee recommendation (Only after 3 or 5 year review)	
	Keep on active status.
	Move to probationary status.
	Move to inactive status.
Recommendations and comments:	

EPRC Chair Signature **Date**

Provost recommendation (Only after 3 or 5 year review)	
	Keep on active status.
	Move to probationary status.
	Move to inactive status.
Recommendations and comments:	

Provost Signature **Date**

President decision (Only after 3 or 5 year review)	
	Keep on active status.
	Move to probationary status.
	Move to inactive status.
Recommendations and comments:	

President Signature **Date**