

# "Pathways to Middle School Mathematics Teaching in California: Concerns and Opportunities"

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## **Session Presenters (CAMTE Members)**

**Joanne Rossi Becker** – San Jose State University

**Babette Benken** – California State University, Long Beach

**Jorgen Berglund** – California State University, Chico

**Carol Fry Bohlin (Chair)** – California State University, Fresno

**Mark Ellis** – California State University, Fullerton

**David Fischman** – California State University, San Bernardino

**Margaret Kidd** – California State University, Fullerton (recorder)

**David Pugalee** – University of North Carolina, Charlotte

**Felipe Razo** – California State University, East Bay

# **Additional Session Participants**

**Shuhua An** – California State University, Long Beach

**Helen Chan**– UCLA Math Content Program for Teachers

**Rong-Ji Chen** – California State University, San Marcos

**Shirley Gray** – California State University, Los Angeles

**Judith Jacobs** – University of Michigan

**Joseph Jesunathadas** – California State University, San Bernardino

**Andrea Medina** – California State University, Bakersfield

**Sean Monroe** – Bellflower Unified School District

**Tor Ormseth** – El Rancho High School

**Kate Riley** – Cal Poly, San Luis Obispo

**Janet Tarjan** – Bakersfield College

**Lindsay Tartre** – California State University, Long Beach

**Megan Taylor** – Harvard University (Postdoctoral Fellow)



## Session Description

Multiple certification pathways exist in California for teaching middle school mathematics. There is considerable concern and debate about the efficacy of these pathways, particularly since algebra is a standard 8<sup>th</sup> grade course in many schools.

There is a need for discussion about middle school mathematics teacher preparation—effective models, methods and content courses, existing research, and a recommended research agenda.



## Session Overview

This session will provide an opportunity for California's mathematics teacher educators (and interested others) to:

- Discuss issues and concerns related to middle school mathematics teacher preparation (MSMTP) in California
- Hear the results of research relevant to MSMTP
- Learn about Subject Matter Authorization and Foundational-Level Mathematics programs on several CSU campuses and discuss successful and replicable aspects of these programs
- Provide recommendations about MSMTP to the state teacher credentialing agency (CTC) via CAMTE's Advocacy Committee (focus areas: FLM credential and MIAA/MILS)



# Session Presentations

- Welcome, Introductions, Overview (Bohlin)
- California and North Carolina Pathways for Preparing Middle School Mathematics Teachers (Bohlin, Pugalee)
- SMA and FLM Programs at Three CSU Campuses (Becker, Benkin, Razo)
- Research – CSET vs. Coursework at CSUs for Single Subject Math Candidates; Middle School Math Teacher Preparation and Teaching Effectiveness (Berglund, Ellis)
- Group Discussion (FLM, SMA, MIAA/MILS)

# Discussion Questions from CTC

1. What is still not clear to mathematics teacher educators regarding credentials/authorizations for middle school mathematics instruction, especially the new MIAA/MILS?
2. Are there some additional topics that you wish CTC's Teaching Mathematics Advisory Panel (TMAP) had addressed?
3. Are there decisions that the TMAP made that you're very upset about? If so, what are they?
4. What are your thoughts about the Single Subject Credential in Foundational-Level Mathematics and in particular the change to 32 units from 45 for the subject matter waiver program? (This will be an action item on an upcoming CTC Agenda.)
5. Is your campus interested in developing an MIAA?
6. Do you have any other questions, concerns, or suggestions?

# FLM Breakout Group Questions

1. Do you expect your university to be interested in submitting a proposal for an FLM subject matter preparation (waiver) program?
2. If so, what size and type of audience do you expect to be interested in such a program? What proportion of teachers do you expect would prefer to take courses instead of the CSET exams?
3. What would be a useful and doable mathematics course sequence for the 20 semester (30 quarter) units of core courses (assuming the student has a Multiple Subject credential)?
4. What would be a useful and doable set of courses for the 12 semester (18 quarter) units of affiliated courses?
5. What are the main obstacles in proposing and implementing an FLM waiver program?
6. What kind of mathematics teaching methods course would/should be required for this credential?

# Resources

## **CBMS document, *The Mathematical Education of Teachers***

**URL:** [http://www.cbmsweb.org/MET\\_Document/](http://www.cbmsweb.org/MET_Document/)

- Part 1: Chapter 2, Introduction to Recommendations for Teacher Preparation, and Chapter 4
- Part 2: Chapter 8

## **CUPM (Committee on the Undergraduate Program in Mathematics) Curriculum Guide 2004**

**URL:** [http://www.maa.org/cupm/ill\\_ref/part2/B.html](http://www.maa.org/cupm/ill_ref/part2/B.html)

- Part II: B.4

## ***California Commission on Teacher Credentialing***

### **Discussion of Preconditions for Foundational Mathematics and Foundational Science Single Subject Matter Programs (March 2010 Meeting)**

**URL:** <http://www.ctc.ca.gov/commission/agendas/2010-03/2010-03-2C.pdf>

### **Program Sponsor Alert: "New Mathematics Instructional Certificate and Mathematics Instructional Leadership Specialist Credential Program Standards" (Dec. 28, 2010)**

**URL:** <http://www.ctc.ca.gov/educator-prep/PS-alerts/2010/PSA-10-21.pdf>

# Primary Paths for Teaching Mathematics in the Middle School

## Single Subject (SS) Credentials:

- **Full SS Mathematics Credential** - Must demonstrate subject matter competency by taking CSET: Mathematics Subtests I, II, III or completing a subject matter waiver program (coursework).
- **SS Credential in Foundational-Level Mathematics** – Must demonstrate subject matter competency by passing CSET: Mathematics Subtests I and II; there are currently NO approved subject matter waiver programs in California.  
(Both SS credentials stipulate a 45-unit waiver program, but CTC is revisiting this now for the FLM credential.)

## Subject Matter Authorization in Introductory Mathematics:

- Requires 32 units of college-level mathematics; must add on to current credential (not to be confused with Supplementary Authorization)

# The New Mathematics Instructional Additional Authorization (MIAA)

- Teaching Mathematics Advisory Panel recommended **MIAA** plus the **Mathematics Instructional Leadership Specialist Credential** (takes the place of Mathematics Specialist Credential); MILS credential holder can work with K-12 teachers on the teaching and learning of mathematics.
- **Program prerequisite for MIAA:** Demonstration of subject matter competency (2 tests are currently in development)
- **Two levels:** Teach up through Prealgebra or through Algebra I
- **Focus is on pedagogy** (specialized mathematical knowledge for teaching and thinking; pedagogical knowledge and practices for teaching mathematics – Deborah Ball's work quite influential)
- Requires **fieldwork**
- **Draft regulations** will go before CTC tomorrow afternoon.

...Questions...

...Discussion...

