

**Using Partnerships to Strengthen Elementary Mathematics Teacher Education
Mathematical Sciences Research Institute, Berkeley, California
December 11-12, 2008**

All sessions will be held in Simons Auditorium except where noted.

Thursday, December 11:

Bus Scheduled Departures UC Berkeley “Hill” shuttle departs UC Berkeley’s Hearst Mining Circle every half hour beginning at 7:40. UC Berkeley “Hill” shuttle departs MSRI every half hour beginning at 7:55am. (Last departure is 7:15 p.m.)

8:30-8:45 Coffee, tea in the **Atrium**

Session 1 Introduction to the Workshop

8:45-9:00 Robert Bryant
MSRI Director Welcome, Overview and Purposes of the Workshop:
(Simons Auditorium)

9:00-10:15 Deborah Ball,
University of Michigan Why the need for collaborations in mathematics teacher education? What
are the challenges and how are different institutions managing them?
(Simons Auditorium)

William McCallum,
University of Arizona Building Mathematics – Education Partnerships
(Simons Auditorium)

10:15-10:40 Coffee, Tea, Danish, etc. in the **Atrium**

**Session 2 The Mathematics Semester at the University of
Nebraska-Lincoln**

10:40-12:20 Ruth Heaton and Jim Lewis, University of Nebraska-
Lincoln
(Simons Auditorium)

All students in elementary education at the University of Nebraska-Lincoln participate in *The Mathematics Semester*, a block of courses that integrates mathematics instruction with pedagogical instruction and field experiences. We will discuss our experiences in building a partnership between education faculty, mathematics faculty and mathematics teachers as well as our efforts to deepen our students' understanding of mathematics while connecting the mathematics they study to the tasks faced by an elementary school teacher.

12:20-1:30 Lunch at MSRI in the **Atrium**. Please enjoy all the eating spaces on the decks surrounding the building, and the picnic area across from the patio adjoining the front door.

**Session 3 Mathematics for Future Teachers and Parents at
Mills College**

1:30 – 3:10 Ruth Cossey and Barbara Li Santi, Mills College
(Simons Auditorium)

We will discuss the mathematical and pedagogical knowledge of central importance to us in the preparation of elementary mathematics teachers. Equity and logic are prominent themes. We will also discuss the barriers, challenges and benefits to approaching the mathematical education of teachers as a partnership among mathematicians and educators.

3:10 – 3:35 Coffee, Tea, Snacks in the **Atrium**

Session 4 Conversations about teaching future elementary teachers – the World Café approach[#]

3:35-5:30 Presenters TBA (Atrium and Library) Examples from our practice teaching courses for teachers (with an emphasis on things that involve both learning mathematics and learning to teach mathematics)

Friday, December 12:

8:30 – 8:45 Coffee, tea in the **Atrium**

Session 5 Forming Partnerships Across Institutional Boundaries (budgetary, departmental, college)

8:45 – 9:00 Deborah Ball, University of Michigan (Simons Auditorium) Overview of Day 2

9:00 –10:05 Deborah Ball, University of Michigan
Jim Lewis, University of Nebraska-Lincoln
William McCallum, University of Arizona (Simons Auditorium) What barriers might one encounter when trying to work across institutional boundaries? Our panel will share their experiences both as administrators and as faculty forming partnerships that involve more than one budgetary unit.

10:15-10:40 Coffee, tea, in the **Atrium**

Session 6 Math Courses for Elementary Teachers at Sonoma State University

10:40-12:20

Ben Ford, Brigitte Lahme, Rick Marks, Edith Prentice Mendez, Kathy Morris, Sonoma State University (Simons Auditorium)

Sonoma State University Mathematicians and Mathematics Educators have a history of collaboration. A recent example is a lesson study conducted by faculty of a content course for future elementary teachers. This included carefully designing mathematical prompts and anticipating student responses, with several iterations of observing, taping, revising and re-teaching the lessons. We will share mathematical activities, classroom and planning video, our efforts to measure growth in students' understanding of place value, and some reflections on the potential of collaborative work to more broadly influence teaching at SSU.

12:20-1:30 Lunch at MSRI in the **Atrium**. Please enjoy all the eating spaces on the decks surrounding the building, and the picnic area across from the patio adjoining the front door.

Session 7 Learning Mathematics for Elementary Teaching at the University of Michigan (Simons Auditorium)

1:30-3:10 Laurie Sleep, Tim Boerst, Hyman Bass, Deborah Ball, University of Michigan

This session will describe how a changing group of instructors, including faculty and graduate students, works together to develop our approach to teaching mathematics and mathematics pedagogy. We report on our efforts to deal with three core challenges: (1) the individualistic nature of higher education and the need for consistency in professional education; (2) the need to combine the training of doctoral students with the delivery of a high-quality mathematics teacher education program; (3) unpacking the mathematics needed for teaching in ways that make it learnable by preservice teachers.

3:10-3:35 Coffee, Tea, and snacks in the **Atrium**

Session 8**Closing Session (Simons Auditorium)**

3:35-4:30

Rebecca McGraw, University of Arizona

Collaborative Instruction in Middle/High School
Teacher Education

This session will describe efforts being made at the University of Arizona to engage mathematicians and mathematics educators in co-teaching courses for future and practicing middle and high school mathematics teachers. I will discuss benefits and challenges for collaborators, and plans for research on collaborative work.

4:30-5:00

Questions and Answers

Participants will have an opportunity to ask questions of the representatives of Nebraska, Michigan, Mills, and Sonoma

5:00 – 5:30

Deborah Ball, University of Michigan

Final thoughts on the need for Partnerships in the Mathematical Education of Elementary Teachers

5:30-6:30**Reception in the Atrium**

For this session, we will use "World Café" approach that is gaining popularity across the nation. For more information on "World Cafe" see <http://www.theworldcafe.com/>. Each presenter will host a table and the remaining workshop participants will divide into 4 groups, with each group joining a table. The table host will have 20 minutes to introduce their ideas and to engage the group in a discussion. When the time is up, each group moves to the next table. After the groups have cycled through all the tables, we will have a whole group discussion.