



# Montague – CTE Scholar Mary Margaret Capraro 2008-2009 College of Education



## Mathematics Educators Across the Country Talk to Undergraduates About Their Research

**Undergraduate Dilemma:** In today's society where teachers are expected to do more with less and help all students make "adequate" social and academic gains each year, it is paramount that preservice teachers (PTs) understand the

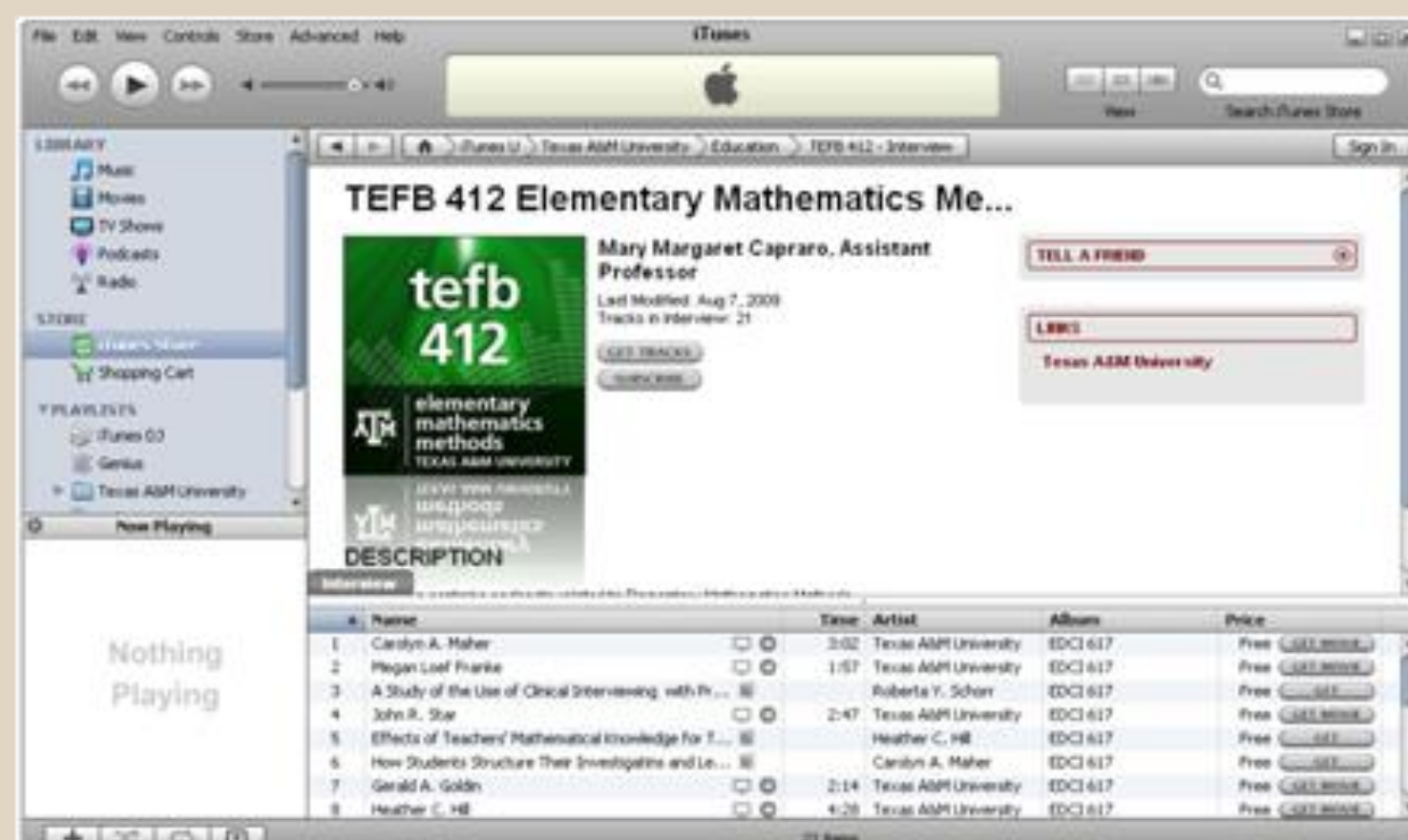
**The Problem:** Ever since I began teaching elementary preservice teachers at Texas A & M University, I realized these PTs they did not realize the importance of research or understand its contribution to the improvement of classroom pedagogy. To respond to this important need, I emphasized research during class presentations, added short research readings to assignments and class activities with little results.

**My Own Learning:** I thought about my own graduate training when I was adding citation after citation to my dissertation's literature search. It was a tedious process that did not come alive until I attended the American Education Research Conference in New York City and actually met two of the researchers who before were just letters in a word document. I decided if that could make research come alive for me, if the PTs in my classes could actually see that there were real people behind the names in books they too could become excited about research.

**Questions I Faced?:** So how could I do that? Would these researchers actually come to talk to my PTs at Texas A & M? Seemed like an impossible task . . . Could I ask if them to send me a tape? . . . maybe . . . could I make a video of them presenting at a conference? . . . maybe . . . what about an imovie that my students could both listen to and view on their ipods . . . BINGO!

**Montague Help:** That seemed best - but how? Would these outstanding researchers take time out of their busy schedules to work with me? Email answered that question for me. To my amazement 11 out of the 12 I asked agreed to allow me to make a podcast of them. So with my Montague funds I bought a digital video camera and a talented student to help me with the technology. Next I set out to visit them either at their universities, conferences, or homes also with the help of Montague funds and began my videotaping.

**The Results:** The rest of the story is displayed on the left and right sides of this poster. During my undergraduate classes, these eleven renown Mathematics Educators now come alive to my PTs on their ipods. Personally, they talk and share their research agendas and discuss how their research findings make an important contributions to instruction in mathematics classrooms around the country. In addition to these interviews, pdf copies of journal articles from each mathematics educator illustrate more clearly their research findings. My PTs are much more eager to read these since they can actually see who wrote the words on the paper.



Go to [www.itunes.tamu.edu](http://www.itunes.tamu.edu) and click on Education and then TEFB 412 to listen to the complete interviews and to read a research article written by each of these mathematics educators.

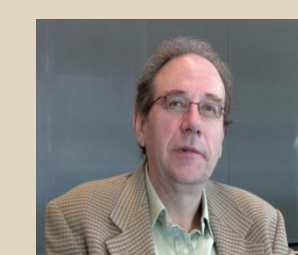


Mary Margaret Capraro is an Assistant Professor in the Department of Teaching, Learning, and Culture. She received her MS from the University of Miami in Educational Administration and Ph. D in mathematics education from the University of Southern Mississippi. Her research interests focus on teacher preparation in mathematics education, problem solving, and cross-cultural studies. Before coming to TAMU, Dr. Capraro was a teacher of mathematics and assistant principal with the Miami Dade County Schools. She has over 30 peer-reviewed articles, and 40 national presentations. Dr. Capraro is Co-Principal Investigator of the Aggie STEM Center and works extensively with school districts planning professional development.



**Deborah Ball [University of Michigan]**

"What does the teacher need to know about the math to carry out the work of teaching . . . How can textbooks be designed to in ways to support the work teachers do . . ."



**Paul Cobb [Vanderbilt]**

"What's involved in improving the quality of teacher's instructional practice. . . support that schools need to establish teacher's ongoing learning . . ."



**Meagan Franke [University of California]**

"How children learn mathematics and kinds of strategies students naturally develop as they engage in mathematics . . . Share with teachers what we learned from research . . ."



**Gerald Goldin [Rutgers University]**

"The affective domain, how children come to feel about and engage in mathematics is relatively neglected . . . teachers' feelings interact with students' feelings . . . identification of these structures help teachers motivate students . . ."



**Heather Hill [Harvard]**

"Look at videos and identify mathematical knowledge that is needed but not necessarily widely recognized . . . identify pieces . . . being able to respond to novel productions . . . looking at non-standard solution methods and understanding them . . . use language precisely . . ."



**Jeremy Kilpatrick [University of Georgia]**

Public concern about how well U. S. school children are learning mathematics is growing. We hear calls from many quarters to boost performance . . . supports a comprehensive curriculum . . . problem solving at the center . . . mathematical proficiency is the key - conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and productive disposition.



**Eric Knuth [University of Wisconsin]**

"Elementary school students view the equals sign as an operator, answer comes after . . . this view causes difficulties as students begin to solve algebraic equations . . ."



**Carolyn Maher [Rutgers University]**

"How mathematical ideas develop in young learners and how they reason . . . Children can perform powerful thinking and reasoning given the chance . . . during rich tasks students justify their solutions to others . . ."



**David Pugalee [U N C Charlotte]**

"Language is a mediator . . . how reading and writing can enhance mathematical thinking and learning . . . Teachers should be sensitive to language because it is important for students to communicate their thinking and ideas . . ."



**Roberta Shore [Rutgers University]**

"Understand mathematical thinking in students . . . Understand how children understand an idea which is different from the way we understand the same idea . . . use clinical interview analysis . . ."



**Jon R. Starr [Harvard]**

"How students learn and structural interventions that improve student learning . . . comparing and contrasting is an effective form of teaching practice . . . schematic diagrams to improve problem solving . . . translate from the research world to the practice world . . ."

