

Center News

Mathematics Education Center

at George Mason University

Math and Science Partnership Program Evaluation

In 2002, Congress authorized the National Science Foundation (NSF) to begin the Math and Science Partnership Program. The goal is to strengthen K-12 math and science achievement, improve teacher quality, and reduce achievement gaps among student populations. Over \$600 million dollars have been awarded to 77 grants for institutions of higher education and PK-12 organizations. The NSF awarded a \$14.7 million dollar contract to COSMOS, Mason, and Brown to conduct the Math and Science Partnership Program Evaluation (MSP-PE). The MEC has a \$3.5 million dollar subcontract for the MSP-PE. The evaluation research concentrates on the key features of the MSP program including teacher quality, quantity, and diversity; challenging math and science curriculum; student achievement; partnerships and evidence-based decision-making. It investigates the roles of faculty from science, math and engineering disciplines, rival explanations, and evaluation methods.



MSP-PE Team Planning Meeting

Robert Yin (Cosmos) is the principal investigator. Patricia Moyer-Packenham (MEC Director), Kenneth Wong (Brown Univ.) and Jennifer Scherer (Cosmos) are co-principal investigators. The McKenzie Group (contractor) will coordinate the work of the Advisory Board. Twelve additional Mason faculty members work on the evaluation: Margret Hjalmarson, Eamonn Kelly, Dimitar Dimitrov, Anastasia Kitsantas, Johnna Bolyard, Hana Oh, Kathleen Alligood, Klaus

Fischer, Tom Nuttall, Bob Sachs, Maria Dworzecka, and Harold Geller.

The MSP-PE contract broadens the focus of the MEC beyond existing local teacher development work to an examination of math education initiatives across the country. By investigating results from multiple, large-scale studies the MEC will achieve a greater understanding of the state of math and science education and guide future research in these fields.

MEL Begins New Math Specialist Program

In the fall of 2005, the Mathematics Education Leadership programs added a new concentration to their program offerings. The Math Specialist Leader K-8 prepares individuals for master teacher, teacher leader, content expert, and math specialist positions in K-8 school mathematics. Stu-

dents in the Math Specialist program concentration study math content and math pedagogy in interdisciplinary coursework in the College of Education and Human Development and the Department of Mathematical Sciences. Students completing the program will be eligible to apply for the

proposed Virginia math specialist licensure. This fall the MEL program admitted the first cohort of 24 students into the new program. Faculty and program staff are currently recruiting for the next cohort of students scheduled to begin coursework in the summer/fall 2006.

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Special points of interest:

- Accepting Applications for Math Specialist Leader 2006 Cohort
- New Faculty
- MEL Cultural Exchange
- Spikell Scholarship in Mathematics Education

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New Center Faculty

The Mathematics Education Center welcomes Hana Oh!

Hana Oh has accepted the full-time faculty position of Research Instructor of Education with the MEC. She is currently working with the MSP-PE contract. Hana has worked with the Fairfax County Public School District teaching high school mathematics for over three years and is currently working on her doctorate with a Mathematics Education Leadership major and Instructional Technology minor. Hana has a bachelor's

degree in Mathematics from James Madison University and a Master's degree in Secondary Education with a Mathematics concentration from George Washington University.



Hana Oh

MEL Doctoral Student Recipient of High Potential GRA Award

Debora A. Southwell, a doctoral student in the Mathematics Education Leadership program, has been awarded the High Potential Graduate Research Assistant (GRA) award for the 2005-06 year. This award, sponsored by the Office of the Provost, is given to students who have demonstrated outstanding performance in their program. One award is granted for each George Mason Ph.D. program annually. The award carries with it a 20 hour per week Graduate

Research Assistant position and tuition reimbursement for up to nine graduate credit hours per semester. The award is renewable for up to three years. Congratulations, Debora, on this outstanding honor!

"In order to understand the universe, you must know the language in which it is written. And that language is mathematics."

- Galileo

Christie Schertz Receives Master's Degree Fellowship Award

Each year the College of Education and Human Development provides funds for the Mathematics Education Leadership faculty to select one student who has demonstrated academic excellence and leadership in mathematics education. The MEL faculty are pleased to announce that Christie Schertz is the recipient of the 2005-06 Master's Degree Fellowship Award. This award carries with it a stipend of \$500 provided by the CEHD. Christie was selected for this year's award based

on academic merit, and her professional leadership experiences in mathematics education. For example, this summer Christie worked with the National Council of Teachers of Mathematics (NCTM) to develop and revise electronic resources for mathematics teaching and learning as part of the Illuminations Project. Congratulations Christie, for being this year's recipient of the MEL Master's Fellowship Award!



Christie Schertz

MEL Students Receive Ph.D.s and Ph.D. Fellowship Awards

In 2005, three MEL students completed their Ph.Ds. Johnna Bolyard's dissertation was titled, "A Comparison of the Impact of Two Virtual Manipulatives on Student Achievement and Conceptual Understanding of Integer Addition and Subtraction". Jennifer Suh's dissertation was titled, "Third Graders' Mathematics Achievement and Representation Preference Using Virtual and Physical Manipulatives for Adding Fractions and Balancing Equations". Lynn Salvo's dissertation was titled, "Effects of an Experimental Curriculum on Third Graders' Knowledge of Multiplication Facts". Congratulations Drs. Bolyard, Suh, and Salvo!

Eight MEL doctoral students were awarded PhD Fellowship awards for the 2005-06 school year. PhD fellowship awards are made primarily based on students' GPAs during the academic year. In order to qualify, new PhD students must have a GPA over 3.50 and continuing students must have a GPA over 3.75. In 2005-06, there are about 85 doctoral students in the CEHD who have received fellowship awards. MEL students receiving this award include Linda Gantz, Chris Johnston, Trish Kridler, Jana L. Parker, Gwenanne Salkind, Janet Sorlin-Davis, Debora Southwell, and David VanVleet. Congratulations students!



Lynn Salvo, Jennifer Suh, and Johnna Bolyard

PME-NA Math Conference

Four faculty members and ten doctoral students from the Mathematics Education Leadership cohort will attend the North American chapter of the International Group for the Psychology of Mathematics Education (PME-NA) annual meeting on October 20th – 23rd in Roanoke, VA. The meeting is designed to provide a forum for scholarly discussion of central and current issues in mathematics education, particularly the role of psychology in mathematics education. The goal of PME-NA is to promote international contacts and exchange

scientific information in the psychology of mathematics education; to promote and stimulate interdisciplinary research in cooperation with psychologists, mathematicians, and mathematics educators; and to better understand the psychological aspects of teaching and learning mathematics. Dr. Hjalmarson will present "Purposes for Mathematics Curriculum: Pre-service Teachers Perspectives," based on her research with pre-service secondary mathematics teachers. She will also be assisting in a working group on Models-and-

Modeling over a number of panel sessions.

Drs. Moyer-Packenham, Hjalmarson, Bolyard, and Suh, along with ten doctoral students will represent Mason at the conference. The doctoral students will receive \$475 in travel assistance from the MEC. PME-NA is an excellent opportunity to learn about new developments in mathematics education research and perspectives on a variety of topics from leading researchers in the field.

Cultural Exchange: Pakistani Educators Participate in GMU Math Education Programs

During the 2005 summer session, a group of 25 Pakistani Teacher Educators attended Mason classes and participated in Mathematics Education Leadership coursework as part of the Pakistani Teacher Education and Professional Development Program. The goals of this program include coursework in mathematics education, leadership and professional development, university linkages, and cross-cultural exchange. The program is funded through the Academy

for International Development with Jack Levy as PI of the project and Patricia Moyer-Packenham as coordinator of the mathematics education course component of the program. Mathematics educators serving as instructors for the coursework were Patricia Robertson, Johnna Bolyard, and John Staley. All three instructors are current or former MEL PhD students at Mason.

*"Life is good for only two things,
discovering mathematics and teaching
mathematics"*

-Siméon Poisson

Spikell Scholarship in Mathematics Education

Dr. Mark A. Spikell, Professor Emeritus, has established The Spikell Scholarship in Mathematics Education in honor of Hy and Lillian Spikell, loving and supportive parents; children, Adam Eli and Emily Erin Spikell; and brother and sisters, Bruce Carl, Stefanie Hope and Deena Rae Spikell.

The award, currently in the amount of \$500, will be given annually in the Spring semester to a Ph.D. student in Mathematics Education in the Graduate School of Education of the College of Education and Human Development at George Mason University.

The scholarship recipient will be selected by the Mathematics Education faculty from among those Mathematics Education doctoral students applying for the Scholarship. Students will submit a maximum two page statement describing their view of the role

of concrete and/or virtual manipulatives in the teaching of school-based mathematics at the elementary, middle or secondary school grades.

Students should submit applications to:

George Mason University
Attn: Scholarship Committee
Mathematics Education Center, Comm II
4085 University Drive, Ste 200A
Fairfax, VA 22030



Mark Spikell, Professor Emeritus

Mathematics Education Center

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The Mathematics Education Center (MEC) is located in the Graduate School of Education in the College of Education and Human Development at George Mason University, Fairfax, VA. The MEC conducts research, provides professional development, and designs instructional materials. One unique focus of the Center is the study of mathematical representations including physical and virtual manipulatives. The MEC works in collaboration with the Mathematics Education Leadership programs at George Mason University to support the scholarly research and professional development of Ph.D. and Master's level graduate students enrolled in the programs.

