



Department of Mathematical Sciences Newsletter

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NSF Graduate Teaching Fellows in K-12 Education (GK-12)

By Ken Wolff, Mika Munakata and Mary Lou West



Drs. Ken Wolff, Mika Munakata and Mary Lou West are the PI's for a 5-year, \$2.85 million NSF grant project that began on March 1st this year. The project, titled *GK-12*

Fellows in the Middle: Partnerships for Inquiry and Interdisciplinary Middle School Science and Mathematics matches CSAM graduate students (fellows) from Montclair State University with middle grade teachers in five school districts—Kearny, North Arlington, Rutherford, East Rutherford, and Lyndhurst. The project's main goals are

- enhancing graduate students' communication skills
- strengthening teachers' content knowledge, and
- improving science and mathematics achievement in the middle school.

Each year the project is expected to involve more than twenty CSAM faculty members and staff, of which at least eight will be from the Department of Mathematical Sciences. Eight graduate students – four from our department and four from other CSAM departments - together with their CSAM research advisors, will conduct research and share those research experiences with middle school teachers and students. During the summer, fellows and their partner teachers will participate in training activities that promote inquiry- and standards-based teaching, especially as they relate to raising the achievement of students with Limited English Proficiency and Specific Learning Disabilities. During the school year, fellows will spend two days per week in a middle school

classroom co-teaching courses with an experienced teacher. Other project activities include designing and delivering curriculum units, preparing and participating in science and mathematics field experiences, leading a math/science day at MSU, and presenting cutting edge research results and methodologies to groups of students. Fellows and teachers will also have opportunities to engage in research and educational endeavors at international institutions, further enhancing middle school students' understanding of research.

Through this program, fellows will bring their content knowledge and research experiences to the classroom, enhancing instruction and piquing students' interest in science and math. Project activities are expected to raise the achievement level of middle school students and develop a vested interest in the public education system in the graduate students. For each year of their participation in the project fellows receive

- \$30,000 in stipends and
- \$10,500 for tuition and related expenses.

Eight capable students, four from Mathematical Sciences and four from other CSAM departments, were chosen as fellows. In our department the students are: **Daniela Kitanska** who will work with **Dr. Bogdan G. Nita** in the area of Applied Computational Analysis, **Kasia Sieminska** who will work with **Dr. Arup Mukherjee** in the area of Analysis, **Steven Spero** who will work with **Dr. Linda Tappin** on Statistical Applications and **Marie McCrary** who will investigate Nonlinear Dynamical Systems in Mathematical Biology with **Dr. Lora Billings**. For additional information about the grant see <http://pages.csam.montclair.edu/gk12/>.
