
MSU NEWS

Montclair State University - Montclair, New Jersey, USA.

Montclair State University Receives \$6.8 Million in Grants to Lead Cutting-edge Collaborations to Improve Science and Math Education in New Jersey Schools

The Prudential Foundation, National Science Foundation and New Jersey Department of Education to Provide Funding

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MONTCLAIR, NJ - Montclair State University (www.montclair.edu), nationally recognized for its teacher preparation programs, today announced the receipt of \$6.8 million in grants to improve the teaching of math and science in New Jersey schools.

The three grants, coming from the private sector, a federal agency and the state will underwrite three initiatives: a math and science teacher recruitment/education program in Newark, a math and teaching fellowship program involving five northern New Jersey districts, and a program providing on-site professional development for math and science teachers in 26 school districts.

"One of the vital issues facing our state and our nation is how to improve the teaching of mathematics and science," said New Jersey Department of Education Commissioner Lucille Davy. "These grants will enable Montclair State to share its expertise in science and math education with local districts to improve children's math and science skills." Together, the grants will enable Montclair State to work with 30 school districts, impacting 257 teachers and touching more than 10,000 students. The three grants announced by the University are:

- A \$2.8 million grant from the **National Science Foundation** to promote math and science education by having the University's math and science graduate students serve as teaching fellows in five Northern New Jersey school districts;
- A \$1.6 million grant from The **Prudential Foundation** to recruit, educate and mentor 45 new math and science teachers to work in the Newark public schools; and
- A \$2.4 million grant from the **New Jersey Department of Education** to have Montclair State faculty work with third- and fourth-grade math and science teachers in 26 school districts.

"Montclair State's educational mission has always extended beyond the campus gates," said University President Susan A. Cole. "The University is a resource for all New Jersey, partnering and collaborating at the local and state level to confront issues and create change. We're honored to be leading these cutting-edge collaborations and believe the lessons learned will have profound benefits for schools and teachers throughout the state."

"At Prudential, we believe that great public schools are the foundation of strong communities. That's why we've joined with Montclair State University and the Newark Public Schools in this innovative partnership for teacher recruitment and preparation," said Prudential Chairman and CEO Arthur Ryan. "Montclair State is a national leader when it comes to preparing teachers who offer rigorous curricula. Teachers who have been prepared at Montclair State will be able to help empower Newark's children to succeed in school and in their professional lives."

Bergen County's North Arlington School District is one of the five northern New Jersey districts taking part in the National Science Foundation (NSF) initiative, which is part of a national NSF program that enables graduate students in science, technology, engineering and math to serve as teaching fellows in K-12 classrooms.

"We in North Arlington are proud to be a part of this National Science Foundation grant and a partner with Montclair State University," said district Superintendent Oliver W. Stringham. "Science and mathematics are critical areas for our nation's current and future success. We look forward to our students and staff working with the Montclair State graduate fellows over the next three years to enhance science and mathematics opportunities for all involved."

The challenge of improving knowledge of math and science has become especially urgent today as Americans compete within an increasingly global and high-tech economy. According to the U.S. Bureau of Labor Statistics, job openings requiring science, engineering or technical training will increase by more than 24 percent, to 6.3 million, by 2014.

At the same time, studies show America lagging when it comes to preparing students for these jobs. Just seven percent of American fourth- and eight-graders achieved the "advanced" level on the most recent *Trends in International Mathematics and Science Study* (TIMSS, 2003) test. By contrast, in Singapore 38 percent of fourth-graders and 44 percent of eight-graders achieved the advanced level.

Teacher preparation and recruitment will be a major part of the answer to this challenge, and Montclair State's collaborations with the private sector, the state government, a federal agency and numerous local school districts illustrate that the challenge will require extensive resources and a broad array of partnerships.

"There is no more powerful predictor of success in college than the level of mathematics learning a student has achieved upon graduation from high school," said Montclair State's Dr. Cole. "I would like to see New Jersey become a model for the nation in mathematics and science education, and we have the talent and the knowledge to achieve that goal."

Montclair State University

Montclair State is New Jersey's second largest university. It offers the advantages of a large university--a comprehensive undergraduate curriculum with a global focus, a broad variety of superior graduate programs through the doctoral level, and a diverse faculty and student body--combined with a small college's attention to students. Web site <http://www.montclair.edu>

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

Program Name: NSF Graduate Teaching Fellows in K-12 Education (GK-12) program **Grantor:** National Science Foundation (NSF)

Grantee: Montclair State University College of Science and Mathematics

Amount: \$2.8 million

Term: Five years

Number of Districts: Five

List of Districts: Kearny, North Arlington, Lyndhurst, Rutherford and East Rutherford

Number of Teachers to Participate: 32
Estimated Number of Students Impacted: 3,500

Program Summary:

The program at Montclair State University, "GK-12 Fellows in the Middle: Partnerships for Inquiry and Interdisciplinary Middle School Science and Mathematics," promotes math and science research and education by having Montclair State University graduate students serve as resident scientists and mathematicians in middle school classrooms.

Background: The \$2.8 million grant is part of the National Science Foundation's Graduate Teaching Fellows in K-12 Education (GK-12) program, an initiative that supports research graduate students (fellows) in science, technology, engineering and math by placing them in K-12 classrooms. More than 5,000 graduate students across the country have participated in the program since the NSF established it in 1999.

It is the largest National Science Foundation grant ever received by Montclair State.

The funding will enable Montclair State to provide \$30,000 annual stipends and \$10,500 towards tuition and related expenses for each participating graduate student. Montclair State intends to select a total of eight graduate students per year (four math students and four science students) and match them with eight middle school science and math teachers.

"The graduate students involved in this program bring exceptional knowledge about current research," explains Ken Wolff, a professor of mathematics and principal investigator of the project, "the K-12 students can gain information about major topics in math and science such as genetic engineering or game theory." Professor Mika Munakata, also a professor of mathematics and principal investigator, adds " This program addresses the need for connections in the classroom; between current science research and K-12 education, school-based learning and field experiences, and middle school and graduate students."

School officials in the participating districts expressed excitement at being part of the project and high hopes for what it may accomplish.

"We're absolutely thrilled to have Montclair State as a partner," said East Rutherford Schools Superintendent Gayle Strauss, Ph.D. "Our schools have been struggling to raise test scores, as the number of students in ESL (English as a Second Language) and special education in a district our size has a large impact on our overall scores. This program will target those populations."

Professors Wolff and Munakata, and Montclair State physics professor Mary Lou West will direct the program, supported by a team of research faculty and graduate students in the areas of biology and molecular biology, chemistry and biochemistry, computer science, mathematical sciences, and earth and environmental studies.

Professor West said the participating districts were selected in part for the teaching challenge presented by the district's fast-changing, multi-ethnic and multi-lingual student populations. All the communities have experienced an influx of immigrants from Eastern Europe, Asia, South Asia and Latin America. To meet the challenge, West predicted that the program fellows and middle school teachers would develop more hands-on classroom activities, workshops and field projects that transcend language barriers.

"Math and science are universal languages," said Professor West.