



Science Outreach *Partnerships for investigation in K-12 math and science*

MISSION

Science Outreach connects the resources of Washington University to K-12 teachers, students, and families. Our mission is to improve learning in math and science through hands-on, investigative teaching methods. We place priority on working with neighboring school districts in underserved communities. Many of our programs are national models for teacher professional development, and are supported by grants and donations. Our work impacted over 2,800 teachers and 58,000 students in 2009-10. Involvement by 95 faculty members and 56 undergraduate and graduate students was instrumental to program success.

PRIORITIES

Promoting partnerships between universities, informal science institutions, and schools. Partnerships expand learning opportunities and pool expertise. Science Outreach programs connect K-12 teachers and districts with WU faculty and educators at the St. Louis Science Center, Saint Louis Zoo, and Missouri Botanical Garden.

Improving teaching and learning through investigation. Science Outreach supports teachers in efforts to use investigation and inquiry — research proven teaching methods that help students develop their own understanding of math and science concepts. We provide and refurbish curriculum kits and laboratory materials children need to explore new concepts.

Encouraging achievement for all students. The scientists of tomorrow are the students of today. Beginning at the earliest grades, every child must be encouraged to learn at his or her highest potential in order to achieve. Our future workforce in science, engineering, and health care depends on quality teaching and learning in all schools, especially those that serve minority or underrepresented populations.

PROGRAMS

Life Sciences for a Global Community. Master of science in biology degree program for high school teachers explores global implications of life sciences with research faculty. Teachers work collaboratively to promote best practices in secondary biology education at the local and national levels. *Developed with National Science Foundation support*

MySci hands on science for elementary students. Investigation Stations take science to schools, with innovative displays and investigations that build interest and excitement in science. Teacher professional development and science kit materials for classrooms expand inquiry in grades K-2. *Monsanto Fund*

Boeing Middle School Science Institute. Graduate certificate program for science teachers in grades 4-8 helps teachers meet challenging science standards using inquiry and investigation into life and physical sciences. Courses at school sites promote system change. *Howard Hughes Medical Institute, Boeing*

Mastercard Middle School Math Institute. Graduate certificate program for math teachers in grades 4-8 helps teachers meet challenging mathematics standards. Courses stress mathematical content plus pedagogy. Courses at school sites promote system change. *Howard Hughes Medical Institute, Mastercard Worldwide*

Making Natural Connections: An Authentic Field Research Collaboration. High school students learn the basics of environmental biology research and apply it at Missouri Botanical Garden Shaw Nature Reserve and WUSTL's Tyson Research Center. *National Science Foundation*

Modern Genetics for All Students. Since 1991, this program has helped over 38,000 high school students learn genetics through hands-on investigations. Graduate course and lab materials support are provided to 60 teachers and 5,100 students each year. *Howard Hughes Medical Institute, Dana Brown Charitable Trust, Monsanto Fund*

Lenses on Learning. Promotes administrator involvement in teaching with best practices in K-12 mathematics. Sessions focus on teacher professional development needs, constructive use of testing data, and strategies for working with parents. *EDC, National Science Foundation*

Research experiences. Teachers and students learn about scientific advances through lab investigation. Faculty-mentored experiences also encourage teacher and student interest in research and science careers. *National Science Foundation, Howard Hughes Medical Institute*

