

NMSU's STEM Education-related Projects

June 6, 2012

1. Program: **Reaching the Pinnacle (RTP)**
Funding: \$2.7 million from the National Science Foundation
Description: The program major objective is to promote Science, Technology, Engineering and Mathematics (STEM) for individuals with disabilities, through mentoring activities, summer projects, and statewide partnerships.
Participation: Reaching the Pinnacle collaborates with eight for year universities, nineteen two year colleges, nineteen New Mexico school districts, eight Texas school districts, eighteen affiliate partners, and nine sister NSF organizations.
Contact: Dr. J Philip King (575) 646-6051/ rtp@nmsu.edu.
2. Program: **Alliance for the Advancement of Teaching and Learning**
Funding: 70,000 a year through New Mexico Legislature
Description: The mission of the Alliance is to collaboratively contribute to the success of children throughout New Mexico and the educators who serve them.
Participation: In 2010, 140 teachers attended a professional development session focusing on teaching advanced placement courses.

Participating School Districts

- Alamogordo Public Schools
- Animas Public Schools
- Cobre Consolidated Schools
- Deming Public Schools
- Dexter Consolidated Schools
- Gadsden Independent Schools
- Hagerman Municipal Schools
- Hatch Public Schools
- Lake Arthur Municipal Schools
- Las Cruces Public Schools
- Lordsburg Municipal Schools
- Loving Municipal School
- Pecos Independent Schools
- Reserve Public Schools
- Silver Consolidated Schools
- Tatum Municipal Schools

- Tularosa Municipal Schools

Other Agencies

- Aprendamos Intervention Team
- Edevance Research Regional Education Laboratory-Southwest
- MVEDA
- MECA Therapies, LLC
- NM Coalition for Public Charter Schools
- NM Education Network Center
- NM Highlands University
- NM Higher Education
- NM Northern Network
- NM Public Education Rural Education Bureau
- NM Research and Study Council
- Parents Reaching Out
- Regional Education Cooperatives #2
- Regional Education Cooperatives #9
- Regional Education Cooperatives #10
- Western New Mexico University

Contact: Dr. Ramon Dominquez (575) 646-3481

3. Program: Center of Research Excellence for Advancing Technology in Environmental Biology (CREATE-BIO)

Funding: Pending

Description: The proposed Center of Research Excellence for Advancing Technology in Environmental Biology (CREATE-BIO) will offer exciting new opportunities to understand how the environment affects interactions between species over geographical and temporal scales.

Contact: Dr. Michelle Nishiguchi /575-646-3721/ nish@nmsu.edu.

4. Program: **Chile Pepper Institute**

Funding: \$22,000 from various donations

Description: Main goal is to educate the world about chile peppers through an extensive worldwide website, hosting research conferences, providing educational tours of our Teaching & Demonstration Garden, providing educational talks and demonstrations Educates the public on the chile plant and the industry surrounding its cultivation and commercialization.

- Participation: 1,000 students annually and the general public
Contact: Ms. Danise Coon / 575-646-3028 / hotchile@nmsu.edu
5. Program: College Assistance Migrant Program (CAMP)
Funding: Pending
Description: Promotes academic success among first-generation college students from migrant families by providing 75 percent of the cost for housing and meal plans, funding training stipends, book stipends, and art and cultural activities.
Participants: 30 freshmen students annually
Contact: Ms. Cynthia Bejarano / 575-646-3316 / cbejaran@nmsu.edu
 6. Program: Educational Talent Search
Funding: Pending
Description: The program conducts ongoing and comprehensive college preparation advising for middle and high school, first-generation, low-income students and their parents.
Participation: 600 students and their parents annually
Contact: Ms. Sarah Cooper / 575-646-1688 / sarac@nmsu.edu
 7. Program: **Environmental Design Contest**
Funding: \$250,000 from multiple sources
Description: Students design solutions for real-world problems developing fully operational models presented to judges comprised of environmental professional.
Participation: 150 students from across the nation and overseas
Contact: Ms. Karen Mikel / 575-646-2162 / kmikel@nmsu.edu
 8. Program: **Howard Hughes Medical Institute Grant**
Funding: \$1.8 million
Description: Restructuring of introductory biomedical courses; development of an undergraduate scholarship program; creation and operation of a mobile lab that visits high school students statewide; professional development for teachers; and funding for labs for new Master of Arts in Teaching in Science.
Participation: 40 teachers annually
Contact: Mr. Ralph Preszler / 575-646-5346 / rpresqle@nmsu.edu
 9. Program: **Idea Networks of Biomedical Research Excellence (INBRE)**
Funding: 16.5 million
Description: Funds members involved in biomedical research grants statewide, and for junior and tribal college outreach.
Participation: 19 faculty researchers and 114 students annually
Contact: Dr. Jeffrey Arterburn / 575-646-2738 / jarterbu@nmsu.edu
 10. Program: **Innoventure Competition**
Funding: \$60,000

Description: The competition fosters a spirit of invention, innovation, and social entrepreneurship for secondary school students across New

Mexico; **InnoventurenWork.Org**

Participation: 350 middle and high school students across New Mexico, mostly in rural areas

Contact: Marie Borchert / 575-646-7839/ mbaaland@ad.nmsu.edu

11. Program: Junior Achievement

Funding: Pending

Description: The program's hands-on, experimental programs teach the key concepts of work readiness, entrepreneurship and financial literacy to young people in grades K-12.

Participation: Las Cruces Public Schools

Contact: Dr. Larry Tunnell / 575-646-4901 / ltunnell@nmsu.edu

12. Program: Manufacturing Technology Bridge

Funding: Pending

Description: The program exposes students to STEM subjects and inspires them to go on to college, entering math, science, and technology fields and careers beyond.

Participation: 200 students from four high schools in two borderland districts annually.

Contact: Dr. Anthony Hyde / 575-646-5029 / ahyde@nmsu.edu

13. Program: **Mathematically Connected Communities (MC2)**

Funding: \$1.4 million per year for six years, National Science Foundation

Description: The program unites mathematicians, educational researchers and public school leaders in improving achievement in math statewide by preparing teachers to teach mathematics in line with national/state standards, while addressing learning needs of students. Participation: Summer Academies for Teachers of 6th-12th grade were held in June 2010 and served 219 teachers from 24 districts in New Mexico representing 83 schools. 47% of participants were Hispanic, 41% White, and the rest Native American, Asian or mixed race.

Contact: Dr. Pat Morandi /575-646-3901 / pamorand@nmsu.edu

Dr. Wanda Bulger-Tamez / 575-646-2755 / wguzman@nmsu.edu

14. Program: Mathematically Connected Communities Leadership Institute for Teachers (MC2-LIFT)

Funding: \$5 million from National Science Foundation

Description: Intensive mathematics, education, and leadership opportunities for two two-year cohorts of 30 teachers, K-12. Supported by a development group for the curriculum, a school support team working in partner districts, and a research team providing feedback to all participants and answering research questions related to teacher learning, student learning, and the how of development for the mathematics education community.

Contact: (Mathematics) Contact: Dr. Pat Morandi / 575-646-3901

/ pmorand@nmsu.edu

Contact: (Education) Wanda Bulger-Tamez / 575-646-2755 / wguzman@nmsu.edu

15. Program: MC2 TERC Mathematics Academy

Funding: (Pending) New Mexico Public Education Department

Description: Professional development workshops for elementary teachers from Las Cruces and Loving Public Schools.

Participation: 120 teachers in 2010

Contact: Dr. Cathy Kinzer / 575-646-2786 / cakinzer@nmsu.edu

16. **Math Snacks Program**

Funding: \$2.9Million from the National Science Foundation

Description: Developing games and animations for middle school students based on closing conceptual gaps in the 5th-7th grade. Focus is on new development of Math Snacks products including teacher guides, learner guides and instructional videos modeling inquiry-based learning. Materials are piloted in the Learning Games Lab and in the summer Math Snacks camps where middle school teachers and students to work together to learn how to use the products. Conducting pilot and randomized testing to assess the effectiveness of the products for learning mathematics.

Participation: 5th~9th Grade students

Contact: (Education) Dr. Karin Wiburg /575-646-1407/kwiburg@nmsu.edu

Contact: (Agriculture) Dr. Barbara Chamberlin /575-646-2848/ bchamber@nmsu.edu

Contact: (Mathematics) Dr. Ted Staford /575-646-7810/ thstanfo@nmsu.edu

17. Program: Math Snacks Summer Camp at Mesa Middle School and Gadsden STEM Center

Funding: NSF funded project offers two outreach Math Snacks Camps for over 100 students each summer. A small fee of \$40/students is charged since this is outreach work not included in the NSF grant. 2012 will be the third year of offering this camp.

Description: The program was held at two technology lab schools in the Las Cruces Public Schools on June 14th-18th to teach educators how to use technology for teaching mathematics and developed math activities, which they taught to 25, 5th~7th grade students in the mornings and then observed in the afternoons how the students were learning mathematics.

Participation: 90 teachers

Contact: Dr. Karin Wiburg / 575-646-1407 / kwiburg@nmsu.edu

18. Program: Math & Science Partnership

Funding: \$5 million

Description: Provides various educational and professional development opportunities to math and science K-12 teachers statewide.

Contact: (Mathematics) Contact: Dr. Pat Morandi / 575-646-3901

/ pamorand@nmsu.edu

(Education) Dr. Wanda Bulger-Tamez / 575-646-2755 / wguzman@nmsu.edu

19. Program: **Memorial Middle School Agricultural Extension and Education**

Funding: \$175,000 from NMSU Cooperative Extension Service and 250,000 from the NM Legislature and grants, annually.

Description: The Memorial Middle School Agricultural Extension and Education Center (MMSAEEC) is a youth science center emphasizing participatory learning and experiential education that engages youth in inquiry based learning projects. A basic premise of the MMSAEEC mission is to develop a teaching and learning model of excellence for agriculture and natural resource sciences that complements in-class instruction by providing context to content through hands-on learning opportunities. The center seeks to improve achievement in STEM subjects through hands-on lessons, projects, and experiments undertaken in the MMSAEEC greenhouse and land laboratories. These educational activities are meant to enhance learning in academic classes by grounding teachers, their students and academic content in real-world agriculture, food and natural resource contexts. Participation: The center serves all of the approximately 450 students at the middle school directly through science and math classes, and cross-curricular approaches to teaching and learning.

Contact: Dr. Peter Skelton / 505-454-5710 / mmsasc@nmsu.edu.

20. Program: **Minority Access to Research Careers (MARC)**

Funding: \$675,000 through 2012 from the National Institutes of Health

Description: The program promotes the NIH-mandated goal to increase the numbers of underrepresented students who will pursue doctoral degrees in the biomedical sciences. The program provides financial support for juniors and seniors to conduct research, attend national conferences and publish in professional journals.

Participation: 24 undergraduate students

Contact: Dr. Michael Johnson / 575-646-4041 / johnson@nmsu.edu

21. Program: **Minority Biomedical Research Support (RISE) to Excellence Program**

Funding: \$3.4 million from the National Institutes of Health

Description: The long-term goal of the New Mexico State University RISE to Excellence Program is to diversify the community of health scientists by furthering the completion of Ph.D. degrees by students who are members of groups underrepresented in biomedical and biobehavioral research. PI/PD (RISE to the post-doctorate - 12 pre-doctoral students)

Contact: Elba Serrano / 575-646-5217 / serrano@nmsu.edu RISE Associate Director (RISE to the Doctorate,20 undergraduates)

Contact: Dr. Graciela Unguez / 575-646-7963 / gunguez@nmsu.edu RISE Associate Director (Team Discovery Workshops,32 undergraduate students-GDW/MPSW)

Contact: Dr. William Quintana / 575-646-2410 / wquintan@nmsu.edu (Faculty Leader,

Genomes Discovery Workshop.16 undergraduates)

Contact: Dr. Brook Milligan / 575-646-7980 / brook@nmsu.edu (Faculty Leader, Medicinal Plants of the Southwest.16 undergraduates)

Contact: Dr. Antonio Lara / 575-646-2918 / alara@nmsu.edu

22. Program: **NASA Experimental Program to Stimulate Competitive Research (EPSCoR)**

Funding: \$3,700,000 over three years from NASA

Description: The program funds university faculty and student to develop competitive research projects of interest to NASA. The programs enable the development of new research areas in New Mexico and focus on strengthening core research capabilities within in New Mexico by funding programs with potentially long-term competitive viability once NASA funding ends.

Participation: Faculty and students at NMSU

Contact: Dr. Patricia Hynes / 575-646-6414 / pahynes@nmsu.edu.

23. Program: **New Mexico Alliance for Minority Participation (AMP)**

Funding: \$3.1 million

Description: The program provides outreach, mentoring, tutoring, bridge and summer programs, undergraduate research and other support to underrepresented students to increase their chances of completing engineering degrees.

Participation: Approximately 6,000 students over the lifetime of the program

Contact: Dr. Ricardo Jacquez / 575-646-1847 / jaquez@ad.nmsu.edu.

24. Program: New Mexico 4-H

Funding: Pending

Description: Provides extensive youth programs as part of regional district extension programs and partnering with various NMSU colleges and other institutions, and with Cooperative Extension's statewide network to promote technology, science and math in 4-H programs.

Participation: 80,000 students annually

Contact: Dr. Frank Hodnett / 575-646-3026 / fhodnett@nmsu.edu

25. Program: New Mexico Council of Teachers of Math (NMCTM)

Funding: Pending

Description: The council is a public voice of mathematics education, providing vision, leadership, and professional development supporting teachers in ensuring quality mathematics learning.

Contact: Dr. Cathy Kinzer / 575-646-2786 / cakinzer@nmsu.edu

26. Program: New Mexico Mathematics Engineering Science Achievement (MESA)

Funding: Pending

Description: The program provides educational enrichment for middle and high school

underrepresented students with a focus on math, engineering, and science.

Participation: Pending

Contact: Mr. Tony Begay / 800-544-2617 / tbegay@nmmesa.org

27. Program: **New Mexico Space Grant Consortium**

Funding: \$825,000 annually from NASA

Description: The consortium funds a variety of programs to support faculty and student on space related research and education programs. The consortium is a statewide organization that provides undergraduate and graduate scholarships and fellowships to increase recruitment and retention.

Contact: Dr. Patricia Hynes / 575-646-6414 / pahynes@nmsu.edu.

28. Program: **Partnership for the Advancement of Cancer Research: NMSU and FHCRC**

Funding: National Institutes of Health, National Cancer Institute: \$1,000,000 annually (Sept 2007 - Aug 2012)

Description: The program is sponsored by the National Cancer Institute and among other program elements, provides undergraduate and graduate students at NMSU an opportunity to assist in research, and to intern at the Fred Hutchinson Cancer Research Center in Seattle, WA.

Participation: 8 interns; 5 research students; 40 cancer biology students, annually

Contact: Dr. Mary O.Connell / 575-646-5172 / Moconnel@nmsu.edu.

29. Program: Pathways in Computer Science

Funding: Pending

Description: The program increases the number of students succeeding in key computer science laboratory coursework.

Participation: 130 undergraduate and graduate students

Contact: Dr. Enrico Pontelli / 575-646-6239 epontell@nmsu.edu

30. Program: Regional Educational Technology Assistance (RETA)

Funding: Pending

Description: The program is a statewide professional development service provider for K-12 educators for technology integration, online teaching and learning, and professional development dossier.

Participation: 20 districts and more than 500 educators statewide

Contact: Dr. Susan Ceppi-Bussman / 575-646-1650 / suceppib@nmsu.edu.

RETA Office: 1-800-821-1574/ reta@nmsu.edu.

31. Program: Scientifically Connected Communities (SC2)

Funding: \$300,000 annually from the New Mexico Higher Education Dept.

Description: The program improving the scientific literacy of southern New Mexico students by providing professional development to 4th-8th grade science teachers that

emphasizes critical thinking strategies and pedagogy to enhance scientific inquiry for all students. SC2 collaborates with a network of teachers, scientists, administrators, and district leaders to increase teacher science content knowledge, promote inquiry-based curriculum, and to provide resources and materials for the classroom.

Participation: 267 teachers participated in the 2010 Summer Workshop

Contact: Dr. Susan Brown 575-646-1397 / susanbro@nmsu.edu.

32. Program: Southern New Mexico Science, Engineering, Mathematics, and Aerospace Academy (SNM-SEMAA)

Funding: \$300,000 from various sources

Description: This program provides academic enrichment and career awareness programs for minority and underrepresented students in the fields of science, mathematics, engineering, and technology.

Participation: 3,400 students, 150 educators, 1,500 family members, and 25 NMSU engineering students and pre-service teachers.

Contact: Dr. Susan Brown / 575-646-1397 / susanbro@nmsu.edu.

33. Program: Southern NM Spaceport Tax Funding

Funding: Pending

Description: This funding represents a collaborative partnering of the Las Cruces Public Schools and Gadsden Independent School District to promote STEM education.

Participation: Both districts are contributing to STEM initiatives in order to maintain and expand these programs.

Contact: Dr. Susan Brown / 575-646-1397 / susanbro@nmsu.edu