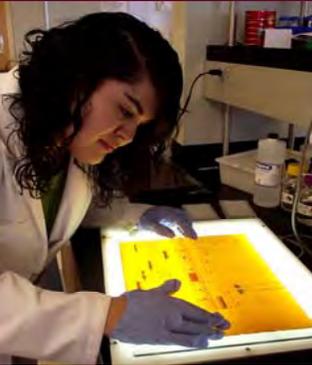


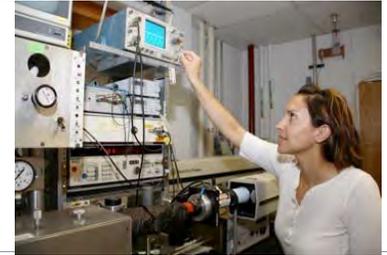


All About Discovery



New Mexico State University Broadening Participation Initiatives

Martha C. Mitchell and Ricardo B. Jacquez
College of Engineering



NMSU's Commitment to Broadening Participation

NMSU is classified as a Hispanic-serving institution by the U.S. Department of Education and is a member of the Hispanic Association of Colleges and Universities. Our student population on the Las Cruces campus is 45 percent Hispanic; other minorities that make up the student body include American Indians, Asians and African-Americans. Historically, NMSU has supported minorities in their academic goals—in fact, we admitted an African-American woman in 1928, well ahead of most other institutions of higher education. The university offers a multitude of support services to all students; interested minorities may also take advantage of the American Indian Program, Black Programs and Chicano Programs offices.

*For a second consecutive year, NMSU received the Higher Education Excellence in Diversity award by INSIGHT Into Diversity magazine, the oldest and largest diversity-focused publication in higher education.

*A National Science Foundation academic research and development expenditures survey (2012 statistics, the most current issued by the NSF) ranked NMSU 3rd nationally in research and development expenditures among high-Hispanic enrollment institutions — we're No. 1 in that category among universities without medical schools.

*Forbes ranks NMSU 13th in the nation among the best colleges for helping minorities to succeed in the fields of science, technology, engineering and math.

*For the fifth year in a row, NMSU has been honored as a top university for awarding bachelor's and master's degrees to Hispanic students. In rankings released September 2014, Diverse: Issues in Higher Education lists NMSU in 7th place for bachelor's degrees awarded in education to Hispanics. Additionally, we ranked 25th in bachelor's degrees in engineering and 28th in bachelor's in business management, marketing and related support services to Hispanics.

*In master's degrees awarded to Hispanics, Diverse: Issues in Higher Education ranks NMSU 16th in engineering, while social sciences and education followed in 33rd and 40th, respectively.



The Carnegie Foundation for the Advancement of Teaching has recognized NMSU's commitment to community impact. In 2015, the foundation selected NMSU to carry its Community Engagement Classification. NMSU is one of 361 colleges and universities nationwide — and the only one in New Mexico — to carry that designation. It acknowledges NMSU's partnerships around the community, across all disciplines, from work in rural communities to highly specialized scientific research.



NMSU is No. 1 in the state for contributions to the public good in social mobility, research and service, according to Washington Monthly's 2014 National Universities rankings. That ranking considers, in part, recruiting and graduating low-income students. It's the fourth consecutive year NMSU has been listed among the best colleges in the country by Washington Monthly, a national publication.

For the fifth consecutive year, GI Jobs magazine lists NMSU in the top 15 percent of schools in the country for "welcoming military veterans and enhancing their experience as students." NMSU also was named a top military-friendly school for the fourth straight year by Military Advanced Education.

Diverse: Issues in Higher Education places NMSU among the top 100 undergraduate and graduate degree producers for minority students.

New Mexico Alliance for Minority Participation

New Mexico AMP is a partnership representing the state's public two- and four-year colleges and universities, including two federally-funded institutions serving American Indian students. New Mexico AMP is aligned with other programs in New Mexico that share a common vision, resulting in a statewide network that has become part of the fabric of higher education in the state. The combined efforts of the network help ensure that participating students are well prepared in STEM and provided with the encouragement, incentive, and motivation to progress through their educational programs. Since its establishment in 1993, New Mexico AMP has impacted the lives of New Mexico students, their retention in STEM degree programs, as well as their professional development and progression to graduate school and the STEM workforce. During this time, the number of STEM degrees awarded to minority students has more than doubled, from 253 degrees in 1992/93 to 665 degrees in 2012/13. For this same time period, 43% of all STEM B.S. Degrees were awarded to underrepresented students, up from the baseline of 24% in 1992/93.

PROGRAM OBJECTIVES

1. Increase the number of STEM students transferring from 2-year to 4-year institutions.
2. Refine and incorporate student research and professional development activities designed to increase the quality of STEM graduates as well as increase the motivation, performance, and progression of talented students in B.S. degree programs and in preparation for graduate studies.
3. Provide direct student support to enable students to attend academic year and summer enrichment activities without unnecessary loss of income.
4. Increase URM STEM graduates to 650 per year by 2018, representing a 10% increase over the 586 degrees awarded in 2010-2011, including a contribution of 10% or higher from transfer students.
5. Demonstrate a 10% increase in the progression of undergraduate students to graduate school entry.
6. Maintain and continue to build meaningful partnerships with colleges and universities, school systems, government agencies, national laboratories and centers, industry, private foundations, and STEM professional organizations to support student development and success.

PROGRAM ACTIVITIES

- **Faculty-mentored Research Experiences**
 - Undergraduate Research Scholars (URS)
 - Summer Community College Opportunity for Research Experience (SCORE)
 - International Research Stipend
- **Transfer Scholarship**
- **Annual Student Research Conference**
 - Professional Development Workshops
 - Networking Opportunities
 - Student and Faculty Poster Sessions
 - Pre-transfer Workshops
- **STEM Clubs, Field Trips, and Service Opportunities**

ECONOMIC IMPACTS

New Mexico AMP has facilitated educational change and development through state-level efforts, leadership development, institutional programming at partner colleges and universities, and individual student support. Collectively, these efforts have resulted in measurable economic impacts to New Mexico. The following analyses are presented in 2009 inflation adjusted dollars and are presented for a single year.

Direct impacts:

Based on the increase over the base year in STEM graduates (253 in 1992/93), the following assumptions and calculations were made:

1. STEM degrees to underrepresented minorities increased by a total of 3,415 degrees after factoring out the baseline of 253 degrees per year over the lifetime of the program.
2. Based on the Census Bureau's 2009 American Community Survey, the differential for STEM versus Non-STEM occupations was \$23,105.
3. Using NMSU alumni data as a reasonable estimate, we assume that 50% of STEM graduates reported in (1) above will remain in New Mexico.
4. The Labor Force Participation Rate of college graduates Ages 25 to 53 in New Mexico is 0.8285. This rate is drawn from the 2009 report referenced in (2) above.
5. Based on the earnings differential of \$23,105, we estimate that STEM graduates remaining in New Mexico had \$33,633,455 in higher earnings than would have been the case without a STEM degree. The earnings of STEM graduates who have left the state of New Mexico are not included in this conservative estimate.

Indirect impacts:

Using IMPLAN Pro Version 3 economic modeling software, it is estimated that an additional 285 jobs resulted from the higher earnings of STEM graduates, producing \$9,496,311 in labor income in the state.

(1) Definition and economic analysis provided by Arrowhead Center, Inc., New Mexico State University.
(2) All data is drawn from U.S. Department of Commerce, Economics and Statistics Administration, ESA Issue Brief #03-11, July 2011.

SUSTAINABILITY EFFORTS

- The NMSU College of Engineering implemented a college-wide Freshman Year Experience program in Fall 2014 based on the successes of the New Mexico AMP Integrated Learning Communities (ILC) project, a major activity of the previous funding cycle. This project clusters students into shared courses, including an engineering-specific Freshman Composition and Rhetoric course. The curriculum has been successful in demonstrating to students the importance of rhetoric and writing in the engineering professions, and the Department of English is committed to continuing this important collaboration.
- The New Mexico State Legislature has approved funding for the program since 1996. The alliance is now a permanent line item in the NMSU annual budget request to the New Mexico State Legislature to support STEM student achievement in New Mexico. Supporting the long-term sustainability of program goals, the alliance was given statutory designation in 2007, which allows the alliance to receive state funding as well as gifts, grants, and donations from the public or from private sources. Continued funding for the alliance was again approved during the Spring 2015 legislative session.

NMSU ADVANCE/PAID

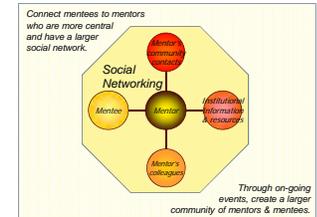
Research findings over the past 20 years have documented the need for institutional transformation in academe to bring about diversity at all levels of the U.S. science and engineering (STEM) workforce. In recognition of the slow pace at which women's representation among STEM faculty was increasing, the National Science Foundation (NSF) implemented the ADVANCE-Institutional Transformation (IT) program in 2001. New Mexico State University (NMSU) is a successful ADVANCE-IT institution (2002-2008) which has doubled the percentage of women hired into STEM faculty positions during the ADVANCE award period. To disseminate these successes, a \$0.5 m award, Partnerships for Adaptation, Implementation, and Dissemination (PAID) seeks to bring about faculty diversity in STEM in NM by forming an Alliance for Faculty Diversity (AFD) among the three Ph.D.-granting institutions in New Mexico (NMSU, UNM, NMT) and a national laboratory (LANL) as a non-funded participant to provide a training pipeline for students and postdocs. NMSU will disseminate to alliance members the materials and practices effective at increasing representation, participation, and advancement of underrepresented faculty in academic science using retreats, distance delivery, and face-to-face meetings.

PROGRAM OBJECTIVES

1. Increase knowledge of diversity issues and strategies
 - Mentoring approaches
 - Promotion and tenure issues
 - Leadership training
2. Institutionalize sustainable grassroots structure for faculty development training
 - Sustainable grassroots committees at each institution
 - Supported by upper administration
 - Including men and women
 - Annual Department Heads Retreats to promote diversity leaders within the ranks
3. Provide a pipeline to STEM careers for diverse students
 - Postdoc and student training
 - Participation in the professoriate

PROGRAM ACTIVITIES

- **Faculty Diversity Committees**
 - Institutional faculty diversity committees to coordinate diversity initiatives and work with administration to institutionalize successful strategies.
- **Mentoring**
 - Intended outcomes of mentoring:
 - Increased research productivity
 - Publications, presentations, grant applications
 - Students
 - Research collaborations
 - Lower sense of isolation
 - Stronger attachment to community
 - Higher job satisfaction
 - Increased efficacy in obtaining resources
 - Reduced likelihood of leaving
 - Career advancement
- **Promotion and Tenure Workshops**
 - Legal issues
 - Balancing family and work
 - Politics and collegiality
 - Procedural issues
- **Department Head Leadership Retreats**
 - Department heads and leaders from each institution
 - Mix of workshops, panels, social events, and presentations
 - Focus is on attracting and retaining high-demand faculty in STEM



SUSTAINABILITY: NMSU Teaching Academy, Leadership and Mentoring

- **Advancing Leaders Program**
 - Mid-career faculty (post tenure)
 - Structured leadership activities and presentations
 - Speakers related to leadership and understanding how NMSU works
 - Pairing with senior leader at NMSU
 - Project addressing a campus-wide issue
- **One-On-One Faculty Mentoring Program**
 - Peer mentoring program for faculty
 - Increase connections among people with a positive orientation to mentoring
 - Include gender and ethnic equity issues in events
- **Promotion and Tenure Workshops**
 - Workshops for
 - Pre-tenure faculty
 - Assoc. professors
 - College-track
 - Contribute to transparency of P&T
- **Department Head Academy**
 - Department Head Book Club
 - Leadership and management workshops
- **Diversity Workshops and Book Clubs**

NSF Grant #s:
DUE 1305011 (NM AMP)
SBE 0123690 (ADVANCE)
SBE 0620112 (PAID)

