



## **ADVANCE: Institutional Transformation**

Annual Report  
January 1, 2006 – December 31, 2006

Tracy M. Sterling, PI and Program Director  
Waded Cruzado-Salas, Co-PI  
LeRoy Daugherty, Co-PI  
William Flores, Co-PI  
Rudi Schoenmackers, Co-PI

Pamela Hunt, Associate Director  
Cecily Jeser-Cannavale, Research Analyst (ending May 10, 2006)  
Abby Javurek-Humig, Graduate Assistant; Research Analyst (August 19, 2006)

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## I. PARTICIPANTS

### **Program Personnel**

#### Tracy Sterling, PI/PD, Professor, Department of Entomology, Plant Pathology and Weed Science

The principal Investigator (PI) is responsible for all aspects of ADVANCE. The PI conducts institutional self-study. The PI also serves as chair of the Committee on the Status of Women in STEM. As Program Director (PD), the PI/PD oversees all program activity, participates in and supports programs of all ADVANCE committees, and supervises Associate Director. The Associate Director supervises the Research Analyst and the Administrative Assistant. Sterling stepped in as PI/PD on May 15, 2005 when Frehill began a position as Program Director at the University of California, Irvine Advance Program.

#### Pamela Hunt, Associate Project Director

Associate Director handles the daily oversight and management of the ADVANCE Program, including budget oversight, staff supervision, and implementation of program activities by working with faculty, the PI/PD, and university administrators. Working with the Administrative Assistant, she facilitates the work of the Committee on the Status of Women in STEM and its subcommittees by: providing logistical support; organizing workshops for faculty and students; coordinating with other relevant on-going programs on campus; facilitating communication among faculty, staff, and administrators; maintaining website; producing program brochure/flyers; monitoring budget; writing interim and annual reports. The Associate Director supervises the Research Analyst and the Administrative Assistant.

#### Cecily Jeser-Cannavale, Research Analyst (ending May 10, 2006)

Responsible for on-going internal data collection and analysis, including workshop evaluation and reporting and the required NSF indicators. Also responsible for dissemination of program results at appropriate conferences and in publications, as specified in grant proposal. The Research Analyst supervises the graduate assistant and reports to the PI although her work is managed by the Associate Director in the PI's absence. Works with founding PI on the Advance Supplemental grant to develop indicators of programmatic success.

#### Abby Javurek-Humig, Graduate Assistant (5/15/05 – 8/18/06); Research Analyst (8/19/06)

Assist with on-going internal data collection and analysis, including workshop evaluation and reporting. Assist with production of publications to disseminate results. As Research Analyst, responsible for on-going internal data collection and analysis, including workshop evaluation and reporting and the required NSF indicators. Also responsible for dissemination of program results at appropriate conferences and in publications, as specified in grant proposal.



Dr. Waded Cruzado-Salas, Co-PI, Dean, College of Arts and Sciences

Administration of program. Serves on the Committee on the Status of Women in STEM.

Dr. LeRoy Daugherty, Co-PI, Associate Dean, College of Agriculture and Director, Agricultural Experiment Station

Administration of program. Serves on the Committee on the Status of Women in STEM, the Recruitment Subcommittee and the ADVANCING Leaders Committee.

Dr. William Flores, Executive Vice President (starting November 2005) and Provost

Administration of program. Serves on the Committee on the Status of Women in STEM; develops institutionalization of program.

Dr. Rudi Schoenmackers, Associate Dean, Engineering Research Center

Administration of program. Serves on the Committee on the Status of Women in STEM and the Committee on Research.

### **Committee Members**

The PI/Program Director and Associate Director are ex officio members of all ADVANCE Committees.

### **Committee of the Status of Women in STEM**

Each Committee member attends meetings of the committee and serves on one of the five subcommittees. This committee is chaired by the PI/Program Director.

- Laurie Churchill, Program Coordinator, New Mexico Alliance for Graduate Education and the Professoriate (NM-AGEP)
- Sonya Cooper, Associate Professor, Engineering Technology
- Champa Gopalan, Professor, Agronomy and Horticulture
- Roger Hartley, Department Head (through 7/1/04), Computer Science
- Patricia Hynes, Project Director, NM Space Grant
- Ricardo Jacquez, Professor, Civil and Geological Engineering and Program Director, New Mexico Alliance for Minority Participation
- Cecily Jeser-Cannavale, Research Analyst, ADVANCE
- Steven Loring, Administrative Analyst, Agricultural Experiment Station
- Jill Schroeder, Professor, Entomology, Plant Pathology and Weed Science
- Ann Vail, Department Head, Family and Consumer Sciences (until 8/1/05)
- Mark Wise, Department Head, Animal and Range Science

### **Subcommittees**

Transition – This committee was established this spring in response to evaluator Kramer's recommendation, to steer ADVANCE towards institutionalization.

- Co-Chair, Sonya Cooper, Department Head, Engineering Technology
- Co-Chair Tom Burton, Department Head, Mechanical Engineering
- Christina Chavez Kelley, Senior Special Assistant to the President
- Waded Cruzado-Salas, Co-PI
- Mary O'Connell, Professor, Agronomy and Horticulture
- LeRoy Daugherty, Co-PI



- Bill McCarthy, Special Assistant to the Provost
- Nancy McMillan, Professor, Geological Sciences
- Desh Ranjan, Department Head, Computer Science
- Rudi Schoenmackers, Co-PI

#### Recruitment

- Chair, Roger Hartley, Professor, Computer Science
- Josefina Alvarez (until 5/18/06), Professor, Mathematical Sciences
- LeRoy Daugherty, Associate Dean, College of Agriculture and Home Economics and Director, Agricultural Experiment Station
- Jill Schroeder, Professor, Entomology, Plant Pathology and Weed Science
- Michelle Nishiguchi (joined fall 2006), Associate Professor, Biology
- Tom Burton (joined fall 2006), Academic Department Head, Mechanical Engineering

#### Research

- Chair, Patricia Hynes, Project Director, NM Space Grant
- Sonya Cooper, Associate Professor, Engineering Technology
- Tiziana Giorgi, Assistant Professor, Mathematical Sciences
- Champa Gopalan, Professor, Agronomy and Horticulture
- Rudi Schoenmackers, Associate Dean of Research, College of Engineering
- Mark Wise, Department Head, Animal and Range Sciences

#### Distinguished Visiting Professor

- Chair, Steven Loring, Administrative Analyst, Agricultural Experiment Station
- Stuart Munson-McGee, Professor, Chemical Engineering
- Tracy Sterling, Professor, Entomology, Plant Pathology and Weed Science
- Nicole Vogt, Assistant Professor, Astronomy

#### Faculty Development

- Chair, April Ulery, Associate Professor, Agronomy and Horticulture
- Maria Luisa Gonzales, Department Head, Educational Management and Development
- Tara Gray, Director, New Mexico State University Teaching Academy
- Steven Kanim, Associate Professor of Physics
- Nirmala Khandan, Professor of Civil and Geological Engineering

#### ADVANCING Leaders Committee

The leadership development program for faculty at NMSU completed the end of its second year. Highlights of the spring semester were completing 'The Provost's Project', a new facet of the program as established in the fall by the EVP/Provost, William Flores.: Participants formulated an approach to clarifying a university-wide issue, the recently established Research Clusters. They conducted focus groups and presented their findings to the Provost and Vice President for Research. Committee members are:

- Cynda Clary, Special Assistant to the Provost, Chair (on leave Spring 2006 as ACE Fellow)
- Tracy Sterling, Professor, Entomology, Plant Pathology and Weed Science and ADVANCE PI/Program Director



- Patricia Hynes, Program Director, New Mexico Space Grant Consortium, Acting Co-Chair in Clary's absence
- Bonnie Daily, Associate Professor, Department of Management (until 6/1/05)
- LeRoy Daugherty, Associate Dean, College of Agriculture and Home Economics and Director, Agricultural Experiment Station
- Alison Mann, Associate Professor, Nursing (starting 8/1/05)
- Michael Morehead, Associate Dean, College of Education
- Diane Prindville, Director, Women's Studies Program
- Robert Rhodes, Department Head and Professor, Special Education and Communication Disorders (starting July 2006)
- Tara Gray, Director, Teaching Academy (starting July 2006)

#### ADVANCING Leaders Participants (2005-2006)

In its second year, Co-PI and Executive Vice Provost/Flores inaugurated the "Provost's Project," in which participants in the ADVANCING Leaders Program, working with the Provost to identify and work to help solve a university-wide area of concern.

- Jeffrey Arterburn, Professor, Chemistry and Biochemistry; Program Director, NM-BRIN
- Ann Bock, Professor, Family and Consumer Sciences
- Teresa Brandon, Professor and Program Director, Health Occupations, Dona Ana Branch Community College
- Martha Desmond, Associate Professor, Fishery and Wildlife Sciences
- Gerald Hampton, Academic Department Head and Professor, Marketing
- David Jauregui, Associate Professor, Civil and Geological Engineering
- Martha Mitchell, Academic Department Head and Associate Professor, Chemical Engineering
- Robert Rhodes, Academic Department Head and Professor, Special Education and Communication Disorders
- Patricia Sandau-Beckler, Associate Professor, Social Work, co-chair Border Research Cluster
- Laura Thompson, Professor, Psychology
- Karin Wiburg, Associate Dean and Director, Educational Research Center

Mentors for this cohort are:

- Michael Hites, Chief Information Officers, Information & Technologies Services
- Liz Ellis, Academic Department Head, Finance
- Peter Gregware, Associate Dean, Arts and Sciences
- Ken White, Academic Department Head, Civil and Geological Engineering
- Rebecca Dukes, Vice President, University Advancement
- Enedina Vazquez, Associate Dean, Graduate School
- Janet Green, Academic Department Head, Hotel, Restaurant & Tourism Management
- LeRoy Daugherty, Associate Dean, College of Agriculture and Home Economics and Director, Agricultural Experiment Station
- Cynda Clary, Special Assistant to the Provost
- Patricia Hynes, Program Director, New Mexico Space Grant Consortium
- Tracy Sterling, Professor, Entomology, Plant Pathology and Weed Science and ADVANCE PI/Program Director



### ADVANCING Leaders Participants (2006-2007)

In its third year, Co-PI and Executive Vice Provost/Flores continued support of the “Provost’s Project,” attending several of the luncheons and dinner with Blaine Lee from the Covey Institute. The third cohort’s participants are working with the Provost to identify and work to help solve a university-wide area of concern; their project for this year will be related to faculty issues with details to be determined at their January 2007 meeting.

Tom Burton, Academic Department Head, Mechanical Engineering  
Richard Fortin, Professor, Finance  
Mary Hoke, Professor, Nursing  
J. Philip King, Associate Department Head, Civil Engineering  
Eric Lopez, Associate Professor, Special Education  
Michele Nishiguchi, Associate Professor, Biology  
Felipe Peralta, Associate Professor, Social Work  
Susan Pinkerton, Assistant Professor, Library Science  
Todd Savage, Assistant Professor, Counseling and Educational Psychology  
Larry Tunnell, Associate Professor, Accounting and Information Systems  
April Ulery, Associate Professor, Plant and Environmental Sciences

Mentors for this cohort are:

Waded Cruzado-Salas, Dean, Arts and Sciences  
Rober Czerniak, Associate Dean Arts and Sciences  
Gladys De Necochea, Associate Vice President, Community Colleges  
Rebecca Dukes, Vice President, University Advancement  
Gregory Fant, Assistant to the Dean/Academic Department Head, Arts and Sciences  
Mary O’Connell, Professor, Plant and Environmental Sciences  
Luis Vazquez, Academic Department Head, Counseling and Educational Psychology  
Ben Woods, Senior Vice President, Planning, Resources and University Relations  
Walter Zakahi, Associate Dean/Academic Department Head, Communications

### Other Specific People Not Listed:

- EVP/Provost Dr. Flores met with PI/PD Sterling and Associate Director Hunt and informed them of the university's intention to 'hard-line' Hunt's position. Subsequent to this meeting he submitted a budget for FY 06-07 with an item-line for Hunt's salary as a permanent employee of NMSU.
- Dr. Flores also leads university-wide promotion and tenure workshops and working sessions, funded by his office, in collaboration with ADVANCE, the Hispanic Caucus, and the Teaching Academy. The Spring and Fall tenure working sessions were attended by 45 and 48 participants, respectively, from six colleges.
- Dr. Vimal Chaitanya, the new Vice President for Research, Graduate Studies and International Programs (July 2006), has met with the PI/PD on several occasions to discuss the legislative initiative, the importance of diversity in the newly formed research clusters, and how we can work together on our recently awarded NSF-PAID grant.
- Dr. Michael Hites, Chief Information Officer, Information & Technologies Services, continued to work with the program to enable access to raw data for annual report, the employee climate survey, and longitudinal data; NMSU has committed to conducting an employee climate survey in 2007, three years after our first survey.
- Dr. Elizabeth Titus, Dean NMSU Library, Chair, President’s Commission on the Status of Women (PCSW). Dean Titus works with the program on various leadership, development, and annual data gathering efforts.



- Ms. Christina Chavez-Kelley, Assistant to the President, chairs the University's Diversity Committee and has engaged ADVANCE's participation on that committee; she and another committee have drafted the position announcement for NMSU's first Omsbud position, a position proposed by the PCSW and supported by President Martin.
- Dr. Wenda Trevathan, Professor, Anthropology, hosted the ADVANCE Distinguished Visiting Professor Melissa Gerald in April. Dr. Gerald is the scientific director of the Cayo Santiago primate research center in Puerto Rico.
- Dr. Nancy Chanover, College Assistant Professor, Astronomy, hosted the ADVANCE Distinguished Professor Dr. Heidi Hammel in April. Dr. Heidi Hammel is a senior research scientist with the Space Science Institute, and is a member of the science team for NASA's Terrestrial Planet Finder mission. An acknowledged expert on the planet Neptune, she was a member of the Imaging Science Team for the Voyager 2 encounter with that planet in 1989.
- Dr. Amiya Battacharya, Assistant Professor, Compute Science, hosted the ADVANCE Distinguished Visiting Professor Radia Perlman in October. Dr. Perlman is a computer networking engineer with Sun Microsystems, and recently was named a Sun Fellow.
- Dr. Blaine Lee, from Covey International, spent an entire morning in November with the Leadership Institute to help clarify its direction for creating Leadership Curriculum for faculty and staff, complements of VP University Advancement, Rebecca Dukes who sponsored his visit to NMSU; he also spent the evening with Cohort 3 of Advancing Leaders and the Provost to discuss principle-centered leadership.

### **Participants' Summary**

Between January and December 2006, 623 faculty, students, staff and community members attended events.

One hundred and seven tenure-track STEM and social science faculty attended ADVANCE Mentoring Program events throughout the year.

Forty-five tenure-track faculty attended a spring university-wide tenure working session co-sponsored by ADVANCE and the office of the EVP/Provost.

Forty-two tenure-track faculty attended a fall university-wide tenure workshop co-sponsored by ADVANCE, the office of the EVP/Provost and the Hispanic Caucus..

One hundred and nine faculty attended five Department Head training sessions in the fall semester; events were co-sponsored by ADVANCE and the Teaching Academy.

Details on participants:

- 65 (31 female, 31 male) STEM faculty and department heads from all of the 18 target STEM departments attended at least one ADVANCE event. (Note: One of the original 19 target departments, Survey Engineering, has been merged into Engineering Technology.)
- 64 faculty and department heads from 27 of the 36 non-STEM NMSU departments participated in an ADVANCE event.
- 91 faculty and administrators—mostly from STEM fields, with 13 from the social sciences—participated in the mentoring program (half men, half women).



- 17 department heads from as many academic departments attended at least one ADVANCE-sponsored department head training event.
- Deans and/or associate deans from all seven of NMSU's colleges attended at least one ADVANCE event.
- The President, two Vice Presidents, two Vice Provosts, all three members of the Provost's Office, and eleven senior administrators participated in at least one ADVANCE event.

Because the goal of ADVANCE is institutional transformation, involvement of faculty and administrators from across campus is essential in changing the institution and for garnering support for the continuation of ADVANCE programs after the end of the award period.

Attending the ADVANCE PI meeting in DC this year were Co-PIs Dean Waded Cruzado-Salas, Associate Dean LeRoy Daugherty (College of Agriculture and Home Economics and Director of the Agricultural Experiment Station), Principal Investigator and Program Director Dr. Tracy Sterling, Professor, Weed Science and Associate Director Pamela Hunt.



## **II. ACTIVITIES & FINDINGS**

### **Overview**

ADVANCE activities are administrated through a Committee on the Status of Women in STEM at NMSU. The PI/Program Co-PI's, faculty from each of the three colleges involved in ADVANCE (Agriculture and Home Economics, Arts and Sciences, and Engineering) and program directors from related NMSU programs work on this Committee and its five subcommittees. The five subcommittees manage the various programmatic elements and include several faculty members beyond those who work on the main Committee on the Status of Women in STEM. In addition, a new committee was formed upon the recommendation of external evaluator Dr. Laura Kramer: The Transition Committee.

The Transition Committee works to steer ADVANCE towards institutionalization.

The Committee on the Status of Women in STEM (CSW-STEM) engages in outreach activities and is responsible for coordinating the annual research report on the status of women in STEM at NMSU. The report forms the basis for subsequent programming to address gender disparities in STEM at NMSU. An office staff consisting of an Associate Director, Research Analyst, Graduate Assistant and two seasoned undergraduate student assistants provide necessary administrative, data collection and analysis, and logistical support for the CSW-STEM's, five subcommittees' and the ADVANCING Leaders Committee's activities.

The Recruitment Subcommittee is involved with outreach (meetings with job candidates), research (surveys about search processes, startup, etc.) and training and development (work with departmental search committees) activities. The Faculty Development Subcommittee is involved with educational and training and development activities. The Research Subcommittee meets to administer a program of grants to existing female STEM faculty for research and travel within their disciplines. The Distinguished Visiting Professor Subcommittee administers another research-related activity that involves a strong outreach component and makes women scientists more visible. The ADVANCING Leaders Subcommittee oversees a leadership development program for faculty at NMSU, which included an academic year of monthly luncheons, and a two-day, off-campus retreat. Financial support is obtained from all six NMSU academic colleges and the library for the program. And an ad-hoc Exit Interviews Subcommittee conducts face-to-face and phone interviews to understand why STEM faculty leave NMSU.

### **Research and Education**

The ADVANCE Program at NMSU supports institutional and faculty development research projects, conducted largely by ADVANCE Program personnel (Frehill, Jeser-Cannavale, and Javurek-Humig) and research and travel for female STEM faculty in the 19 target STEM departments.

All reports and data are posted to the ADVANCE program webpage. We routinely bring copies of reports to key administrators (e.g., the President, Provost, Vice Provost for Research, Deans, Director of the Teaching Academy, etc.) to discuss findings and seek assistance in solving problems.



## ADVANCE Program Staff Research

- **Institutional Data:** We compiled data for the 12 required indicators (except start-up packages) for the 19 STEM and 6 SBS departments as in the past (findings reported in the attached file) and we compiled many of these indicators for the non-STEM departments. In addition, this year we compiled more trend data to make meaningful presentations about the trends in women's involvement in STEM and academic administration for the five-year period prior to ADVANCE (i.e., 1997-2001) and for the first five years of the ADVANCE Program.
  - **Attrition data** for the entire campus were analyzed and presented to: Roles and Rewards Taskforce (and included in the Taskforce's second report to the Provost on Promotion and Tenure); the Associate Provost; the Vice Provost for Research.
    - **Toolkit:** Founding PI Lisa Frehill and Jeser-Cannavale produced a toolkit for other ADVANCE institutions to use in collecting, compiling and reporting the data for the 12 required indicators. The toolkit forms the basis for the supplemental funding award (\$60,000) to bring together data analysts from several ADVANCE institutions to craft a uniform approach to the data reporting tasks.
- **Program Analysis.** We are collecting and analyzing data on participants in our programs to determine the overall effect of the program on individuals.
  - **Career Advancement.** We are creating a cohort data set so that we can determine the career advances of faculty who were active with the ADVANCE Program over the course of the grant.
  - **Mentoring Program.** An analysis of the ADVANCE mentoring program was conducted. Twenty-four interviews with participants and 24 interviews with non-participants were conducted. A publication of this work is in progress.

## Publications

- Frehill, Lisa M., Abby Javurek-Humig, and Cecily Jeser-Cannavale. "Women in Engineering: Review of the 2005 Literature" *SWE Magazine*, 52, 34-60.
- Frehill, Lisa M. "Using the Index of Dissimilarity to Understand the Sex Segregation of Academic Science and Engineering." *Journal of Technology Transfer*, 2006. Volume 31, Number 3, 345-354.
- ADVANCE Institutional Transformation Indicators Working Group (Convened by Lisa Frehill). "Using Program Evaluation to Ensure the Success of Your Advance Program." Toolkit #2. Available at NMSU ADVANCE website.

## Forthcoming publications (2006)

- Frehill, Lisa, Cecily Jeser-Cannavale, and Janet Malley. "Measuring the Status of Women Towards Cross-Institutional Analysis to Understand Institutional Transformation" forthcoming in *Learning from ADVANCE* edited by Abigail Stewart,



Danielle Lavaque-Manty and Janet Malley, Ann Arbor, University of Michigan Press (In Press).

- Fox, M. F. and L. M. Frehill. 2006. "Footnotes Article"; Need title

Publications under preparation are:

- Frehill, Lisa and Cecily Jeser-Cannavale. "Gender Equity and Space Allocation: Are Women Science and Engineering Faculty Disadvantaged Relative to Their Male Peers?"
- Frehill, Lisa. "It's Just Not Fun Coming to Work Anymore: Faculty Exit Interviews."
- Frehill, Lisa M., Cecily Jeser-Cannavale, Lauren Ketcham. "The Impact of a Mentoring Program on Women and Men in Science and Engineering."
- Frehill, Lisa M. "The Impact of NSF-Funded ADVANCE: Institutional Transformation on Engineering Schools" submitted to the Women in Engineering Programs Advocates Network annual conference (Book Chapter).
- **Dual Career Couples:** ADVANCE personnel have worked with five couples at NMSU to make accommodations, which has resulted in recruitment/retention of six STEM faculty (including two college track females) and two social and behavioral science faculty (both college track). We are working with Elizabeth Creamer of Virginia Tech on a study of institutional accommodation of dual career couples. An IRB application to the NMSU review board was approved and interviews are in process. Future publications and presentations will be prepared based on these data.
- **Exit Interviews:** NMSU Institutional Review Board approved this year's interviews. Twelve interviews were completed over the fall of 2006 and an interim report given to Provost Flores. Working with the Provost's Office and Human Resources to obtain a list of those faculty who have left and their contact information, another 16 are scheduled for spring 2007 with a final report due by the end of the spring 2007 semester.
- **Diversity in engineering:** Several presentations and papers are based upon this work, with several more in preparation. Diversity as it relates to recruitment has been and will continue to be a theme in this research strand.
  - SWE Literature Review: for the past three years, the ADVANCE Program research group at NMSU has prepared a comprehensive review of the literature on women in engineering for publication in the Society of Women Engineers' annual yearbook. The literature review has become an essential and well-respected resource for engineers, engineering faculty and academic administrators, and for people involved in efforts to increase women's participation in engineering.
    - The 2005 Literature Review of Women in Engineering, appeared in the April-May, 2006 issue of *SWE Magazine*
  - Frehill: "The NSF-ADVANCE Program and the Recruitment and Retention of Women Engineering Faculty" for the American Society of Engineering Education conference, June 2005.

## Institutionalization of ADVANCE

The spring semester of 2006 proved to be an eventful time of progress towards institutionalization for ADVANCE. As a symbol of the strong commitment to institutionalization



of our Best Practices and responsiveness to climate change on campus, the Provost has been funding two-thirds of the Associate Director's salary since July 2006, with a commitment to request 100% from the Budget Committee in July 2007. NMSU ADVANCE's new home for championing STEM and entire-campus climate issues for all faculty, especially women and other under-represented groups in STEM, will be the Teaching Academy, a unit devoted to training Faculty in Professional Development specific to teaching, but already helping ADVANCE deliver many of its Best Practices (i.e. Mentoring, Department Head training, P&T Workshops, ADVANCING Leaders) and serving as a critical dissemination tool for the newly awarded NSF-PAID grant.

Additional evidence of our partnership with the Teaching Academy and institutionalization is that the Teaching Academy began this fall to co-sponsor several Department Head training events with facilitators who are Department Heads. Also, ADVANCE events are now using the Teaching Academy's on-line registration, which has greatly stream-lined our process for tracking attendees. In addition, Director Tara Gray has initiated monthly meetings for Women in Science and Engineering to meet informally.

In addition, with the support of President Michael Martin and EVP/Provost Flores, ADVANCE succeeded in getting a house bill on the docket of the New Mexico State legislative 2006 session. PI/PD Sterling and Hunt traveled to Santa Fe where Sterling testified to the house committee on higher education. While the bill did not pass the senate, the progress made this year constitutes a strong foundation for future efforts to obtain the support of state funds.

Sterling submitted a Proposal in June to the NMSU Budget Committee entitled 'Partnering for Faculty Diversity'. The proposal was supported and is number 7 out of 30 initiatives which President Martin is bringing to the NM Legislature for the January to March 2007 session. The bill requests \$1 mi to recruit diverse faculty in STEM disciplines through start-up package augmentation and is a top priority for the new Vice President for Research's Office.

A proposal for an ombudsperson, crafted by founding PI Lisa Frehill and Jeser-Cannavale, is slated to be filled in 2007.

The PI/PD Sterling continued to serve as co-chair of the Provost-convened Faculty Senate Task Force on Promotion and Tenure Revision. Co-chair is Donna Alden, past Faculty Senate Chair and Roles and Rewards co-Chair with Frehill. The Task Force released a draft document for public comment across campus (included branch campuses and Extension faculty from across the state) in November 2006; each committee member has met with Department Heads and P&T committees from each College to engage dialog and encourage input. In January, the Task Force will reconvene, incorporate changes and present as legislation to the Faculty Senate in Spring 2007. This umbrella policy is to serve as a guide for Colleges and Department to increase the transparency of the tenure process and to recognize the need for flexibility, particularly with 'Stopping the Tenure Clock' and 'Part-Time Tenure-track positions' as well as the definition of 'Scholarship,' and that candidates should be reviewed on their allocation of effort..

In November 2005, the President announced a major administrative restructuring to consolidate units and build internal collaborative relationships. The Provost was promoted to Executive Vice President and Provost, and the Assistant to the President was promoted to Senior Assistant,



and was placed in charge of diversity. A new director of institutional equity was appointed in April.

A new Vice President for Research (VPR), Dr. Vimal Chaitanya, was selected, and slated to assume his duties in July. A further reorganization to integrate the office of the VPR with college research centers was carried out in May, when Flores announced that the associate deans/directors of college research centers will have dual reporting lines, to the college dean and to the VPR.

In line with these organizational changes, Institutional Research, Planning and Outcomes Assessment (IRPOA) was placed within Information and Communication Technologies (ICT). The director of IRPOA retired and a search was initiated. In December 2005, the ADVANCE PI/PD was invited to join the search committee for this position, and she worked actively on this committee throughout the Spring; Carmen Santana-Melgoza assumed the position in Summer 2006 and has been helpful in helping ADVANCE access critical data.

Working with the Chief Information Officer and IRPOA, ADVANCE obtained access to the raw data for this annual report and for NMSU's employee climate survey conducted in 2004. The data included in the 2005 Annual Report is the first data report produced by any NMSU grant program based on raw personnel data. ADVANCE aggregated the Employee Climate Survey data so that differences between gender, units, and campuses could be available to evaluate climate in specific areas (<http://irpoa.nmsu.edu/EmployeeClimateSurvey/EmployeeClimateSurvey.html>). NMSU has committed to another Employee Climate Survey in 2007 and consistently thereafter, and will work with UW-Madison to generate questions that have been found by other ADVANCE institutions to be sensitive to gender differences or shown to be reliable indicators of institutional climate.

The PI/PD continues to work to ensure that gender diversity in the sciences and engineering is part of NMSU's vision of diversity.

PI/PD and Dr. Christine Eber, Professor of Anthropology, met with Provost Flores and Diana Quintana (HR) to share an initial report on findings from 12 interviews of faculty who have left NMSU in STEM and non-STEM departments for reasons other than retirement; we were encouraged to continue completing in Spring 2007 another 16 interviews of faculty who have left NMSU for reasons other than retirement.

PI/PD co-wrote a section for NMSU's self-study for the North Central Accreditation with Peter Gregware, Associate Dean Arts & Sciences and Management Department Head, Terry Adler. Our subsection was Core Component D, "The organization provides support to ensure that faculty, students, and staff acquire, discover, and apply knowledge responsibly." of Criterion 4, Statement: Acquisition, Discovery, and Application of Knowledge.

PI/PD was invited to participate in the Provost's "Leadership Summit", a two-day series of focus groups determining strategies for student recruitment and retention.

Related to institutionalization, the PI/PD and Associate Director met regularly with the Director of the Teaching Academy, the Assistant to the President, and the Human Resources Director to discuss ways to collaborate on programming with a plan to move gender and ethnic equity-



related programming into these established institutional offices. Sterling reported to the Regents in March, presenting a talk entitled “Advancing Faculty Diversity.”

In addition, in May the ADVANCE graduate student, Abby Rose Javurek-Humig made a presentation to the NMSU P&T Taskforce, "NMSU ADVANCE: P&T Workshops and Faculty Perceptions". May 25, 2006.

To help move forward institutionalization, the program hired specialized part-time staff. Using operational funds, the program hired a seasoned part-time major gifts officer, Mark Hohnstreiter. As a permanent part-time employee of the NMSU Teaching Academy, Hohnstreiter is familiar with faculty development programs and with the NMSU foundation, for which he has also worked on a contractual basis. We have had three events intended as advocacy and outreach activities with over 50 attendees ranging from key ADVANCE participants and committee members, NMSU leadership, deans, and department heads, members of the NMSU Foundation, media, elected officials, and University donors. Other participants have included the local chapter of the American Association of University Women and the NM High Tech Research Consortium. We make a general presentation on the accomplishments of the program, present status, and future directions, and engage the group in discussion.

The program also acquired a student webmaster, and a redesign of the website was inaugurated.

The PI/PD also continued in an effort to work out strategies for a regional “consortia” approach to addressing the needs of dual career couples. NMSU President Martin has met with the University of Texas at El Paso (UTEP) President, Diana Natalicio, on this topic as well.

## **Findings**

### Indicators and Reports

See 2006 tables reporting the 12 required indicators.

In addition, all recipients of start-up funds (distributed by the Recruitment Subcommittee), research and travel awards (distributed by the Research Subcommittee), and Faculty Development funds (distributed by the Faculty Development Subcommittee) report their findings from work supported by ADVANCE funds. Project dates vary, but the following findings were reported in 2006 by the recipients of ADVANCE funds in this and previous years.

**PI** – Cynthia Zoski

**Title** – Assistant Professor

**Department** – Chemistry and Biochemistry

**Type of Project** – Start-up Funds

**Title of Project** – Electrochemistry

Start-up funds from ADVANCE enabled Dr. Zoski to present at lectures and seminars as an invited speaker in 2006, as follows: She served as an invited speaker at: NM EPSCORE Meeting, Sevilleta, NM, March 2006, “Nanoelectrochemistry”; Biosensors and Biosensor Network Symposium, Wichita State University, July, 2006, “Chemical Sensing with Scanning Electrochemical Microscopy”; 4<sup>th</sup> International SECM Workshop, Italy, September, 2006, “Investigation of Ion Transport in PEDOT Films by Scanning Electrochemical Microscopy”; Pittcon 2007, “Probing Addressable Nanoelectrode Ensembles by Scanning Electrochemical



Microscopy”; and Texas Tech University, November, 2006, “Scanning Electrochemical Microscopy (SECM): Probing Ion Transport in Conducting Polymers”

In addition, she served as an organizer of an invited symposium at Pittcon 2006 (Charge Transport in DNA) and 2007 (New Frontiers in Scanning Electrochemical Microscopy: Probing Biological and Nanostructured Interfaces) and was the invited session chair at the 4<sup>th</sup> International Scanning Electrochemistry (SECM) Workshop, Italy, September, 2006.

**PI** – Deborah J. Bathke

**Title** – Assistant Professor

**Department** – Plant and Environmental Science

**Type of Project** – Start-up Funds

**Title of Project** – Climate change, water supply and flooding

Dr. Bathke is the first female assistant climatologist in the state of New Mexico. ADVANCE funds contributing to a start-up package enhancement assisted Dr. Bathke in producing the following series of products in 2006: Newsletter articles: Bathke, “CoCoRaHS Success in New Mexico,” *New Mexico High Waters*, 13(3), p. 7, 2006; and “It finally rained: Are we out of the drought?” *The Nature Park News*, 15(4), p. , 2006. In addition she contributed to a report titled, “The impact of climate change on the State's water supply and the ability to manage its water resources.” Drought Monitoring Workgroup Drought Status Reports and presentations: “The Community Collaborative Rain, Hail and Snow Network,” New Mexico Chapter of the American Society of Agricultural and Biological Engineers, Bosque del Apache National Wildlife Refuge (3/31/06 and 6/13/06); “Rain Gauge Training Influences on Master Gardeners' Water Conservation Practices”, UCOWR/NIWR Annual Conference, Santa Fe, NM (7/19/06); “New Mexico State Climate Office Initiatives,” National Weather Service (NWS) Southern Region and Texas A&M University Climate Services Workshop, College Station, TX (8/1 – 8/3/06); “Group 4: Engaging the Preparedness Communities,” National Integrated Drought Information System (NIDIS) Implementation Plan Workshop, Longmont, CO (9/22/06); “New Mexico Climate Issues,” Southwest Turfgrass Conference, Ruidoso, NM (10/12/06).

**PI** – Carol Campbell

**Title** – Assistant Professor

**Department** – Geography

**Type of Project** – Start-up Funds

**Title of Project** – Tree canopy height data, Community ecology, ornithology and geography

Dr. Campbell, the first female tenure-track geologist hired by the NMSU Department of Geology, received ADVANCE support for summer research and international conference attendance. Summer salary enabled her to conduct two months of research in Yosemite National Park, California, where she collected tree canopy height data with which to test a model of canopy height derived from radar data (Shuttle Radar Topography Mission – SRTM). She is currently preparing a paper on the test of the canopy model using the data obtained over the summer, targeting the *International Journal of Remote Sensing*. In addition, she collected a third year of data on bird community composition to compliment data from her dissertation research conducted in 2003 and 2004. ADVANCE also supported travel to Veracruz, Mexico, and lodging expenses to attend the IV North American Ornithological Congress.

**PI** – M. Cristina Mariani

**Title** – Associate Professor



**Department** – Mathematical Sciences

**Type of Project** – Start-up Funds and Research Award

**Title of Project** – Truncated Levy walks applied to the study of the behavior of market indices  
In 2006 Dr. Mariani became the first member of the initial cohort of female STEM tenure-track faculty hired with ADVANCE start-up fund contributions to receive tenure. Her numerous publications in key journals are documented in Section III, Products.

**PI** – Nancy Flores

**Title** – Assistant Professor

**Department** – Family and Consumer Sciences, Food Technology

**Type of Project** – Research Award

**Title of Project** – The effects of salt in chile pepper mash fermentation

Flores conducted the first of a planned series of more detailed studies designed to lead to the understanding of the fermentation process in chile pepper mash and other vegetables. The fermentation of chile pepper mash is a natural process that has never been fully characterized. The data collected will be presented to the regional food producers association and contribute to USDA CREES grant proposals. Her research will also help other commodity groups, including soybean breeders in Indiana and chile processors in Missouri. This work contributes to Dr. Flore's tenure process, by providing research, publication and networking opportunities.

**PI** – Susana Salamanca-Ribas

**Title** – Assistant Professor

**Department** – Mathematical Sciences

**Type of Project** – Research Award

**Title of Project** – Representation Theory of Lie Groups

Lie groups have connections in many applications of mathematics, engineering, materials science, quantum field theory, particle physics, control theory, robotics, as well as such areas of pure math as differential equations, harmonic analysis, topology, geometry, and ergodic theory. Dr. Salamanca-Riba's work concentrates on the old problem of classifying those representations of a Lie group  $G$  which are unitary. As a result of her work with David Vogan of M.I.T., funded by ADVANCE, she has become involved in the Atlas of Lie groups and Representations project which seeks to make available information about representations of non-compact semi-simple Lie groups and related groups over local fields. She has presented as an invited speaker at several conferences.

**PI** – David Finston

**Title** – Professor

**Department** – Mathematical Sciences

**Type of Project** – Mini-Grant

**Title of Project** – Increasing diversity in advanced mathematics

Using funds from an ADVANCE mini-grant, Dr. Finston presented on Minority doctorates in mathematics and the pipeline at the Mathematical Association of America Special Session on Increasing Diversity in Mathematics Programs, January 2006.

**PI** – Megan Lockwood

**Title** – Undergraduate Student – Faculty Mentor: Elizabeth Gasparim

**Department** – Mathematical Sciences

**Type of Project** – Undergraduate Researcher Scholarship

**Title of Project** – String Theory



Working with Dr. Elizabeth Gasparim, Ms. Lockwood studied string physics – work which she has found helpful as she continues her studies in physics.

**PI** – Kalli Lambeth

**Title** – Undergraduate Student – Faculty Mentor: Kathryn Hanley

**Department** – Biology

**Type of Project** – Undergraduate Researcher Scholarship

**Title of Project** – Patterns of inter-seotypic competition in dengue virus

Working with Dr. Kathryn Kanley, Ms. Lambeth conducted research on dengue virus serotypes. Future research involves infecting mosquito cells in culture under the same treatments to determine serotype interactions during co- and superinfection in the absence of barriers existing inside the mosquito.

## **Opportunities for Training and Development**

### ADVANCE Program Staff

- ADVANCE Associate Program Director Hunt attended the Women in Engineering Leadership Institute (WELI) that was conducted at the annual meeting of WEPAN in June 2006.
- In April of 2006, Research Analyst Abby Javurek-Humig attended the annual Pacific Sociological Association meetings in Hollywood California to disseminate information based on the ADVANCE Promotion and Tenure Program. Included with this information was data from the Institutional Employee Climate survey that looked at faculty climate particularly as it related to the P&T process. This information was also shared with the university Promotion and Tenure working group.

### Other Faculty and Administrators

The ADVANCE Program provided training programs that reached many faculty and administrators from almost every NMSU academic department and a limited number of students (graduate and undergraduate). In addition to ADVANCE events on campus, the ADVANCE Program provides support to the NMSU Teaching Academy and enables STEM faculty, administrators, and students to attend important off-campus workshops and conferences related to gender in the STEM fields.

### *On Campus Events*

The ADVANCE Program features a number of training events associated with mentoring, department head training and ADVANCING Leaders programs. Attendance at these events averages about 26 people.

In January, the ADVANCE Program co-hosted with the College of Engineering a breakfast for Patricia Galloway, Chief Executive Officer and Chief Financial Officer of Nielsen-Wuster, and member of the NMSU chapter of the Society of Women and Engineering.

While the mentoring program focuses predominantly upon faculty in the STEM and now SBS fields, several participants are from departments outside these target disciplines and several key NMSU administrators outside of STEM participate in this program. An additional cohort of social and behavioral sciences participants will be recruited in the coming year and the program will expand to include all new tenure-track faculty to NMSU as well as college-track STEM faculty.



The ADVANCING Leaders Program also reaches across campus in important ways. Not only are the participants from all six academic colleges plus the NMSU Library, but the invited speakers include important administrators at NMSU, including: Provost William Flores, Senior Vice President, Planning, Resources and University Relations Ben Woods, Legislative Liaison for NMSU Ricardo Rel and Vice President Gladys De Necochea (Student Affairs). Dean Waded Cruzado-Salas and several Associate deans from multiple colleges were involved as mentors or are on the planning committee for the program including: Kathleen Brooks (College of Business Administration and Economics); LeRoy Daugherty and Wes Holley (College of Agriculture and Home Economics); Peter Gregware ( College of Arts and Sciences); Enedina Vasquez (Graduate School); Michael Morehead (College of Education); Robert Czerniak (Arts and Sciences); and Walter Zakahi, Associate Dean/Academic Department Head, Communications.

<u>Date</u>	<u>Attendees</u>	<u>Event</u>
1/20/06		ADVANCING Leaders Luncheon – Conflict Management – Patricia Witherspoon, Communications Department. Head, University of Texas – El Paso
2/10/06		ADVANCING Leaders Luncheon – Organizational Day Follow-up and Provost’s Project – Patricia Hynes, Director, Space Grant
2/22/06	34	Visiting Professor Program: Breakfast Reception with Dr. Patricia Galloway and SWE students
2/25/06	45	Promotion and Tenure Workshop: Getting a Head Start for the Tenure Review
3/8/06	26	Mentoring Workshop: Managing and Mentoring Students
3/10/06		ADVANCING Leaders Luncheon – Provost’s Project Planning by participants – Analysis Research Cluster and Faculty Input
3/30/06	20	Mentoring Program: Mixer
4/3/06	16	Visiting Professor Program: Dr. Melissa Gerald Research Lecture – Behind the Scenes: Theoretical and Empirical Examination of Ho Color Guides the Primate World
4/3/06	24	Visiting Professor Program: Roundtable with Dr. Melissa Gerald on Balance: Issues and Concerns of Women Pursuing STEM Careers
4/4/06	29	Visiting Professor Program: Dr. Melissa Gerald Public Lecture: How Color Guides the Primate World
4/4/06	29	Visiting Professor Program: Discussion with Dr. Melissa Gerald – Research Opportunities at the Caribbean Primate Research Center
4/5/06	4	Visiting Professor Program: Lunch with Dr. Melissa Gerald – Guiding Graduate Students through Field Research



4/20/06	33	Visiting Professor Program: Dr. Heidi Hammel Luncheon: Encouraging Young Women to Pursue Non-traditional Careers.
4/20/06	43	Visiting Professor Program: Dr. Heidi Hammel Public Lecture: Planets Around Stars.
4/21/06	32	Visiting Professor Program: Dr. Heidi Hammel Astronomy Colloquium: Uranus and Neptune: Understanding the Ice Giants.
4/21/06		ADVANCING Leaders Luncheon – Finance: How the Institution Works, Jennifer Taylor, Vice President for Business and Finance
5/6/06	24	End of Year Mentoring Event
5/11/06		ADVANCING Leaders Recognition Luncheon – President Martin
5/12/06		ADVANCING Leaders Luncheon – Seven Habits Mini-Course – Carter Campbell from Dona Ana Branch Community College
8/25/06	46	ADVANCE Open House
9/8/06		ADVANCING Leaders Retreat – The Organizational Day (Patricia Hynes) and Covey’s Four Roles of Leadership (Carter Campbell)
9/9/06		ADVANCING Leaders Retreat – Covey’s Four Roles (cont’d)
9/16/06	42	Promotion & Tenure Workshop – Provost Question/Answer period, P&T Revision, Collegiality, Meet with your College P&T Committee members
9/19/06	19	Academic Leader Conference Series: “Overview and Introduction”
9/26/06	23	Academic Leader Conference Series: “Budgeting and Financial Management”
9/28/06	29	Mentoring Program Orientation
10/3/06	23	Academic Leader Conference Series: “Managing Conflict in Higher Education”
10/10/06	24	Academic Leader Conference Series: “Creating a Campus Climate for Successful”
10/13/06		ADVANCING Leaders Luncheon – Introductory Luncheon – What is Leadership? Ben Woods, Senior Vice President, Planning, Resources and University Relations - Myers-Briggs Indicators – Pat McCoy, Learning Center



10/17/06	20	Academic Leader Conference Series: "Supporting Faculty"
10/23/06	30	Visiting Professor Program: Dr. Radia Perlman Research Colloquium: How to make it be there when you want it and make it go away when you want it gone.
10/24/06	7	Visiting Professor Program: Dr. Radia Perlman: Grad students and junior faculty outreach.
10/24/06	14	Visiting Professor Program: Dr. Radia Perlman: Lecture for the general public: 10 Things I Learned About Computer Networks and Life
10/25/06	8	Visiting Professor Program: Dr. Radia Perlman: Advisory Meeting on Outreach – Breakfast with K-12 Educators
10/25/06	24	Visiting Professor Program: Dr. Radia Perlman: Lunch with female students: 10 Things I Wish I'd Known When I Was Your Age: Computer Networks and Life
10/27/06	23	Mentoring Workshop: Research Clusters: Working Across Disciplines – Vimal Chaitanya, VP for Research
11/10/06		ADVANCING Leaders Luncheon <ul style="list-style-type: none"> <li>- Navigating the Legislative Process – Federal and State – Ricardo Rel, NMSU Legislative Liaison</li> <li>- Provost Project Orientation – Robert Rhodes</li> </ul>
12/8/06		ADVANCING Leaders Luncheon - Networking across administrative levels and shared governance issues; Greg Blanch, Professor of Leadership in School of Hotel, Restaurant & Tourism Management, and College of Agriculture's Omsbudsperson

All ADVANCE workshops are evaluated, with a report prepared by the Research Analyst for use by the Faculty Development Subcommittee in planning future workshops.

#### *NMSU Teaching Academy Programs*

The NMSU ADVANCE Program supports and promotes events at the NMSU Teaching Academy, which provides a range of professional development activities for all NMSU faculty. The Teaching Academy provides the ADVANCE Program with names of STEM faculty who attend so that we can determine topics of interest to STEM faculty in particular  
*Conferences and Off-Campus Development Opportunities*

#### **Outreach Activities**

#### Miscellaneous Visits and Meetings

Regular meetings with Tara Gray (Director, Teaching Academy), Diana Quintana, Director Human Resources (Promoted in May 2004), Christina Chavez-Kelley (Assistant to the



President; Chair of Diversity Committee), Michael Hites (VP ICT), Donald Birx/Vimal Chaitanya (as of July 2006) (VP Research)

### Committee Memberships

The Program Director was involved in several committees:

- President's Commission on the Status of Women
- Faculty Senate
- Provost's Promotion and Tenure Revision Task Force – co-chair
- Biochemistry Search Committee - member
- Institutional Research, Planning and Outcomes Assessment Search Committee - member
- Leadership Institute – an embryonic grass-roots committee engaged in creating Leadership curriculum for all staff and faculty at NMSU

The Associate Director was also doing committee work:

- Children's Village Planning Committee (on-site daycare)
- Committee on Diversity
- Working with Housing to create MOUs among the science colleges to create Living Learning Communities for Women in Science and Engineering; The first WISE hall was established in fall 2006; the AD meets periodically with the students and their residential hall and faculty advisor, inviting them to our events, several of which they have attended.
- Women's Studies Steering Committee
- Chair, Women's History Month – Theme: Women in Science and Technology
- Leadership Institute – an embryonic grass-roots committee engaged in creating Leadership curriculum for all staff and faculty at NMSU

The Research Analyst served on:

- President's Commission on the Status of Women
  - Monitoring Policies Subcommittee
  - Maternity and Family Leave Policy Subcommittee

Presentations to NM science faculty/staff audiences to disseminate ADVANCE initiatives throughout New Mexico's doctoral-granting institutions and National Labs:

- New Mexico Institute of Technology, Socorro, NM
  - Met with: Chemistry Department Chair, Faculty Development Chair, Associate Provost and VP for Research
- University of New Mexico
  - Met with: Mathematics Department Chair, Spec. Asst. to Provost for Faculty Development, Deputy Provost for Academic Affairs, Associate Dean of Arts and Sciences
- Los Alamos National Laboratories – Earth and Environmental Science (EES) Division
  - Met with: Directorate Leader (Chemistry, Biology and Earth Sciences), Division Leader (EES), 10 Group Leaders within EES



Sessions Organized/Moderated/Presented at Conferences

ADVANCE PI Meeting (5/06), Washington DC -

- Presentation – ‘Mentoring and Institutional Transformation: A Formalized Mentoring for STEM Faculty’, Sterling, T.M., L.M. Frehill, P. Hunt, and C. Jeser-Cannavale.
- Panel - ‘Engaging Senior Female Faculty’, Hunt and Sterling
- Poster – ‘NSF-ADVANCE: Institutional transformation for faculty diversity’, Sterling, T.M., P. Hunt, L.M. Frehill, and C. Jeser-Cannavale.

Conferences

- Javurek-Humig, Abby Rose, L.M. Frehill, and C. Jeser-Cannavale. 2006. "Navigating Faculty Life: Promotion and Tenure Workshops." Presented at the annual Pacific Sociological Association Meetings in Hollywood, California, Saturday, April 22, 2006.
- Frehill, L.M. Convener, ADVANCING Women in Computer Science at Grace Hopper Conference of Women in Computing
  - o Desh Ranjan, Department Head of Computer Science at NMSU, presenter.
- Frehill, L.M. ADVANCE: Institutional Transformation at New Mexico State University: Sociological Practice Built on the Foundation of Sociology of Science, Feminist Organizations Theory and Social Research Methods, presented at the American Sociological Association Annual Meetings, Montreal, Quebec, August 2006.

Poster Presentations:

- Sterling, T. M., L. M. Frehill, and C. Jeser-Cannavale. 2006. NSF-ADVANCE: Institutional transformation for faculty diversity. Proc. Western Society of Weed Science 59:44-45.
- Sterling, T. M., L. M. Frehill, and C. Jeser-Cannavale. 2006. NSF-ADVANCE: Institutional transformation for faculty diversity. Weed Science Society of America Abstracts 46:23-24.
- Sterling, T.M., P. Hunt, L.M. Frehill, and C. Jeser-Cannavale. 2006. NSF-ADVANCE: Institutional transformation for faculty diversity. NMSU University Research Council Fair – Placed as one of top three posters at the fair; Dr. Chaitanya (VPR) recognized awardees at a reception December 13, 2006.

Distinguished Visiting Professor: In April, the ADVANCE Distinguished Visiting Professors Program supported a visit by Dr. Melissa Gerald hosted by Dr. Wenda Trevathan, Professor, Anthropology. Dr. Gerald, is Scientific Director of the Cayo Santiago Caribbean Primate Research Center, Puerto Rico. Her research focuses on the functions of color in primates as it relates to social behavior and reproductive outcome. Gerald’s schedule follows:

Date/Time	Event	Location	Target Group
<b>Monday 4/3/06</b>			
9-10AM	3 rd grade lecture/workshop: <i>Who are the Primates?</i>	Hillrise Elementary	Third-grade students



11:30-1:30PM Lunch provided	Roundtable: <i>Balance: Issues and Concerns of Women pursuing STEM careers</i>	Breland Hall, Room 333	Faculty and graduate students
4-5PM	Research Lecture: <i>Behind the Scenes: Theoretical and Empirical Examination of How Color Guides the Primate World</i>	Hardman Hall, Room 208	Researchers, students and interested public
<b>Tuesday 4/4/06</b>			
10-11AM	Discussion: <i>Research Opportunities at the Caribbean Primate Research Center</i>	Breland Hall, Room 333	Students, faculty
3-4pm	Public Lecture: <i>How Color Guides the Primate World</i>	Jornada ARS Building, Wooten Hall, Room 105	General public, NMSU community
<b>Wednesday 4/5/06</b>			
11:30-1:30PM	Brown Bag: <i>Guiding Graduate Students through Field Research</i>	Breland Hall, Room 333	Interested faculty

Also in April ADVANCE supported a Distinguished Professor visit by Dr. Heidi Hammel, a senior research scientist with the Space Science Institute, is a member of the science team for NASA's Terrestrial Planet Finder mission, which has the goal of finding earth-like planets around other stars. An acknowledged expert on the planet Neptune, she was a member of the Imaging Science Team for the Voyager 2 encounter with that planet in 1989. Hammel's schedule follows:

Date/Time	Event	Location	Target Group
<b>Wednesday 4/19</b>			
Astronomy Department and SEMAA activities			
<b>Thursday 4/20</b>			
Astronomy Department and SEMAA activities			
12:00 – 1:30 Lunch provided  Please register by 4/17/05 by emailing adv-prog@nmsu.edu	ADVANCE Luncheon -- <i>Encouraging young women to pursue non-traditional careers</i>	Science Hall 124	Faculty (male and female) and female science students, grad and undergrad are invited.
7:00 PM – 8:00 PM	Public talk: <i>Planets Around Stars</i>	Gerald Thomas Hall Auditorium	General public and NMSU community



		Rm 194, 1st floor	
<b>Friday 4/21</b>			
Astronomy Department activities. Contact Dr. Chanover for details: 505-646-2576 or nchanove@nmsu.edu			
3:45 PM - 5:00 PM	Astronomy Colloquium, <i>Uranus and Neptune: Understanding the Ice Giants</i>	Room 102, Biology Annex	NMSU community -- faculty and students -- and interested parties

In October, ADVANCE supported a Distinguished Professor visit by Dr. Radia Perlman, an engineer with Sun Microsystems. She designed the spanning tree used by bridges and modern day Ethernet, fundamental algorithms that make today's network routing algorithms scalable and robust, as well as other contributions in routing, security, and even programming languages for kids. She's also written and co-written two influential computer networking books, Interconnections (on routing protocol) and Network Security (on network security protocols) that are used by many engineers and academics. Holding over 80 patents, she was named Silicon Valley's Intellectual Property Law Association's inventor of the year. This year she was given a lifetime achievement award by Usenix Association. She has a Ph.D. in computer science from MIT and an honorary doctorate from KTH of the Royal Institute of Sweden. Dr. Perlman's schedule follows:

Date/Time	Event	Location	Target Group
<b>October 23 (Monday)</b>	<b>Computer Science Departmental Colloquium, Computer Class and Teaching Academy</b>		
4:00 PM - 5:00 PM	<b>Research Colloquium: <i>Data: How to make it be there when you want it, and make it go away when you want it gone</i></b>	Science Hall Rm 107	Faculty, students, and interested specialists
<b>October 24 (Tuesday)</b>	<b>Meetings with students and potential collaborators Lecture for the general public</b>		
9:30 – 11:30 AM	Open office hours for interested students and staff	SH 155	Undergrad and grad students in Computer Science, Electrical and Computer Engineering, Accounting and Information Systems, ICT etc.
11:45 AM - 1:30 PM	Round table Discussion: <i>How to succeed in research – research grant writing, industry sponsorship and taking innovation from research to product</i>	SH 286A	Faculty and graduate students in STEM and social sciences. Registration requested by Oct. 20. Box-lunch provided. Please register on-line at the Teaching Academy registration site



Date/Time	Event	Location	Target Group
4:30 - 5:30 PM	<b>Lecture for the general public:</b> <i>10 things I learned about computer networks and life</i>	Thomas & Brown 104	Faculty, students and the general public
<b>October 25 (Wednesday)</b>	<b>Programs for K-12 Educators and Female NMSU students</b>		
12:30 - 2:00 PM	<b>Lunch with female students:</b> <i>10 things I wish I'd known when I was your age: Computer networks and life</i>	SH 107	For female students and their professors.  Registration requested by Oct. 21. Lunch provided. Please register on-line at the Teaching Academy registration site



### III. PRODUCTS

The ADVANCE program at NMSU has produced an impressive array of products in a large number of STEM disciplines via the mini-grants program that provides research and travel funds to women faculty in 19 departments at NMSU.

#### **Websites**

<http://www.nmsu.edu/~advprog/>. ADVANCE program website.

#### **Other Products**

Frehill, Lisa M., Abby Javurek-Humig, and Cecily Jeser-Cannavale. "Women in Engineering: Review of the 2005 Literature" forthcoming in SWE Magazine. (2006), 52, 34-60.

Giorgi, T. July 10-12, 2006 – Boston – (SIAM) Society for Industrial and Applied Mathematics Conference on Analysis of Partial Differential Equations, in the minisymposium: "Superconductivity, Ginzburg-Landau Theory, and Related Topics". Title of talk: Composite Superconducting Systems.

#### Journal Publication

M. Ferraro, N. Furman, Y. Liu, M.C. and D. Rial. Analysis of Intermittence, Scale Invariance and Characteristic Scales in the Behavior of Major Indices near a Crash. *Physica A*, 359, (2006) 576.

Frehill, Lisa M. "Using the Index of Dissimilarity to Understand the Sex Segregation of Academic Science and Engineering." *Journal of Technology Transfer*, Volume 31, Number 3, 345-354.

Giorgi, T. and R.G. Smits. 2006. Eigenvalue estimates and critical temperature in zero fields for enhanced surface superconductivity. *Zeitschrift fur Angewandte Mathematik und Physik*, 57, 1-22.

Giorgi, T. and R.G. Smits. 2006. Monotonicity results for the principal eigenvalue of the generalized Robin problem. *Illinois Journal of Mathematics*, 49(4), 1133-1143.

Giribet, G., A. Okusu, A.R. Lindgren, S.W. Huff, M. Schrödl, and M.K. Nishiguchi. 2006. Evidence for a clade composed of mollusks with serially repeated structures-monoplacophorans are related to chitons. *Proc. Natl. Acad. Sci. USA*, 103:7723-7728.

Romero, T.A., E. Tumban, J. Jun, W.B. Lott, and K.A. Hanley. 2006. Secondary structure of dengue virus type 4 3' untranslated region: Impact of deletion and substitution mutations. *Journal of General Virology* 87:3291-3296.

Jones, B.W. and M.K. Nishiguchi. 2006. *Vibrio fischeri* transcripts reveal adaptations in an environmentally transmitted symbiosis. *Can. J. Microbiol.*, 52, 1-10.

Jones, B.W., J.E. Lopez, J. Huttenberg, and M.K. Nishiguchi. 2006. Population structure between environmentally transmitted *Vibrios* and bobtail squids using nested clade analysis. *Mol. Ecol.* 15:4317-4329.



Maria Cristina Mariani and Yang Liu. A new Analysis of Intermittence, Scale Invariance and Characteristic Scales applied to the Behavior of Financial Indices near a Crash. *Physica A* 367 (2006) 345-352.

M. C. Mariani. La matematica financiera y el nacimiento de una nueva disciplina. *Matematicalia*, Vol. 2, 2 April 2006.

Romero, T.A., E. Tumban, J. Jun, W.B. Lott, and K.A. Hanley. 2006. Secondary structure of dengue virus type 4 3' untranslated region: Impace of deletion and substitution mutations. *Journal of General Virology*, 87: 3291-3296.

Schroeder, J., S.H. Thomas, and L.W. Murray. 2005. Impacts of crop pests, and their management, on weeds. *Weed Science*, 53, 918-922.

Smith, G.T., Unguez, G.A., and Weber, C.B. (2006). Distribution of Kv1-like potassium in the electromotor and electrosensory systems of the weakly electric fish *Apteronotus leptorhynchus*. *J. Neurobiol*, 66, 1011-1031.

### **Forthcoming publications**

#### Journal Publication

P. Amster, P. De Napoli and M. C. Mariani. Periodic Solutions for p-Laplacian Like Systems with Delay. To appear in *Dynamics of Continuous, Discrete and Impulsive Systems (series A)*. Accepted in 2004.

P. Amster, P. De Napoli and M.C. Mariani. An H-system for a revolution surface without boundary. To appear in *Abstract and Applied Analysis*. Accepted in 2005.

P. Amster, M.C. Mariani and O. Mendez. Solutions of nonlinear elliptic equations in unbounded Lipschitz domains. To appear in *Forum Mathematicum*. Accepted in 2006.

P. Amster, M.C. Mariani. A system of coupled pendulii. To appear in *Nonlinear Analysis*. Accepted in 2005.

P. Amster, M.C. Mariani. Oscillating solutions of a nonlinear fourth order ordinary differentialEquation. To appear in *Journal of Mathematical Analysis and Applications*. Accepted in 2006.

Bathke, D. J., "The New Mexico Office of the State Climatologist Annual Report," *The State Climatologist*, in press.

Bathke, D.J. and L. DeMouche, "New Mexico state summary," *The Gauge: The CoCoRaHS Network Newsletter*, in press.

Bathke, D.J. White paper on "Coordinated Resource Management" written with the New Mexico Floodplain Managers Association.



Cuellar, H., Kim, J.A., and Unguez, G.A. Evidence of post-transcriptional regulation in the maintenance of a partial muscle phenotype by electrogenic cells of *S. macrurus*. *FASEB J.* In press (2006).

DeMouche, L., D. Bathke, and N. Doesken, "Master Gardeners Role in Encouraging Water Conservation Using a Rain Gauge Network", *Journal of Extension*, in press.

Frehill, Lisa, Cecily Jeser-Cannavale, and Janet Malley. "Measuring the Status of Women Towards Cross-Institutional Analysis to Understand Institutional Transformation" forthcoming in *Learning from ADVANCE* edited by Abigail Stewart, Danielle Lavaque-Manty and Janet Malley, Ann Arbor, University of Michigan Press.

Elizabeth Gasparim and Pedro Ontaneda. Three Applications of Instanton Numbers. *Communications in Mathematical Physics*, 270, 1 (2007), 1-12.

Giorgi, T. and H. Jadallah. "The onset of superconductivity at a superconducting/normal interface" forthcoming in the *European Journal of Applied Mathematics*.

Guerrero-Ferreira, R.C. and M.K. Nishiguchi. "Identification of light organ symbionts from the genera *Uroteuthis*, *Loliolus*, and *Euprymna*" forthcoming in *Cladistics* (2007).

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## **IV. Contributions**

### **Within PI Discipline**

The Research Analyst worked with founding PI Frehill to prepare a number of manuscripts within the field of sociology. To some extent, the data related to the institution and the question of how to make meaningful and appropriate cross-institutional comparisons among the original nine ADVANCE institutions has formed the basis of one thread of work, measuring the status of women. This work will continue, with additional presentations and publications.

Other related research uses in-depth qualitative interviews and other programmatic records maintained by the ADVANCE program to understand how institutional forces affect faculty work lives. Frehill and the research analyst, also a sociologist, worked on several projects to be presented at sociology and educational management conferences. These projects examine the impact of the mentoring program and the study of space allocation that we have completed at NMSU.

Working with founding PI/PD Frehill, the ADVANCE research staff produced an in-depth review of literature for the Society of Women Engineers' annual "Yearbook" edition in 2005 and have done this service again for 2006.

### **Contributions to Other Disciplines**

This year ADVANCE funds will assist in the preparation of scholarly work in eight STEM disciplines: agronomy and horticulture, biology, computer science, fishery and wildlife, food sciences, geological sciences, industrial engineering, and mathematical sciences. Wide-reaching contributions across the STEM fields have been and will continue to be made as a result of this grant.

### **Development of Human Resources**

ADVANCE start-up package enhancements, research awards, mini-grants and undergraduate student researcher scholarships were essential to scholar's professional development. First, mini-grant recipient David Finston's participation in the Mathematical Association of America 2006 session on "Models That Work: Building Diversity in Advanced mathematics," furthered his development as a spokesperson on the topic of minority doctorates and the pipeline. Mini-grants also contributed to the professional development of Dr. Muhammad Dawood of Electrical and Computer Engineering, who attended an intensive week-long teaching institute, Boot Camp for Profs. Dr. M. Cristina Mariana used her mini-grant funds to attend a special session on recent developments on fluid and geophysical fluid dynamics at the American Mathematical Society Spring Southeastern Meeting. She took advantage of her attendance at the conference to discuss developing a professional master program in financial mathematics – an initiative she is developing at NMSU with the Finance Department.

Second, ADVANCE start-up fund enhancements contributed to breakthrough hires in two departments. The Physics Department, which had been without a female tenure-track position since 2002, was able to hire Dr. Kananin Lee. And in Biology, Michele Shuster transitioned from "college track" to tenure track – a major success for the ADVANCE Program which has engaged in activities to develop college track women to enable them to compete successfully for future tenure-track openings. Dr. Shuster was a recipient of ADVANCE mini-grants in 2006.



Third, the program contributed \$6,000 towards a dual career accommodation for Leslie Morrell's appointment as a college-track instructor in Women's Studies.

Fourth, ADVANCE research funds contributed to the professional development of recipients. M. Cristina Mariani, a recipient of the first "round" of start-up package enhancements, became the first in that cohort to receive tenure. Her progress was augmented by an ADVANCE research grant. An ADVANCE research grant was also instrumental in the tenure of Elizabeth Gasparim, also of the Department of Mathematical Sciences. Susana Alamanca-Riba used her research funds to work with a collaborator at MIT on a wide-ranging project on Lie groups. And Nancy Flores of Food Science conducted research to collect data designed to contribute to future USDA and CREES grant proposals.

Fifth, the ADVANCING Leaders Program and the department head training sessions contributed the development of the managerial capabilities of women in science and the furthering of a constructive university climate.

Sixth, the ADVANCE Program granted scholarships of up to \$2,000 to eight female undergraduate students who assisted in the research of their faculty mentors. Megan Lockwood, working with her faculty mentor, Elizabeth Gasparim of Mathematical Sciences, studied string physics – work which she has found helpful as she continues her studies in physics. Kalli Lambeth, working with Kathryn Hanley of Biology, studied patterns of inter-seotypic competition in dengue virus. Not only does this scholarship program encourage undergraduate female STEM students to pursue graduate work and perhaps faculty careers by forming mentoring relationships with their faculty sponsors – these sponsors in turn receive valuable assistance in their research by highly motivated students.

### **Physical, institutional, or information resources that form the infrastructure for research and education.**

The ADVANCE program was instrumental in providing significant support for increased information resources at NMSU for STEM and non-STEM fields. Working with the Office of the Provost, the Hispanic Faculty/Staff Caucus, the Teaching Academy and Faculty Senate the program provided support for broad-based institutional training. ADVANCE program funds have been essential to the launch of the NMSU Teaching Academy.

In addition, the program, in collaboration with the University of Texas at EL Paso ADVANCE Program, has produced a brochure on "Dual Career Couples" for use by the institutions in solving dual career dilemmas. The program brought top administrators and department heads together to attend Virginia Valian's briefing dinner and discuss gender equity in recruitment and working across colleges and disciplines. The program has established a reputation among department heads of providing quality, value-added programming that is truly relevant to their administrative roles. NMSU President Martin has continued these conversations with President Natalicio of UTEP, demonstrating an institutional commitment to dual career issues.

The ADVANCE program website, and the vital connections maintained with the other eight ADVANCE institutions have been essential in making information about institutional change easily accessible to a wide audience. The PI, Research Analyst, and Graduate Assistant made presentations about women's status in STEM fields and the ADVANCE Program to various NMSU, state, and national audiences.



Program personnel participation in other institutional efforts - notably a campus-wide Provost's Taskforce on Roles and Rewards, the President's Commission on the Status of Women, the Committee on Diversity and the Employee Climate Survey Committee are important in disseminating the information learned via the many data collection efforts of the program across campus. Such involvement insures that issues related to the status of women at the institution are kept at the forefront of these other institutional efforts.

### **Other Aspects of Public Welfare**

Research on diversity in science and engineering is important in determining how more women and under represented minorities can be recruited and retained at all levels of the science engineering pipeline. Affecting the pipeline is also one important role of the Distinguished Visiting Professor program. This year's Distinguished Visiting Professors, Melissa Gerald, Heidi Hammel, and Radia Perlman visited K-12 classrooms or educators as part of their visits. Such women were an inspiration to the young girls in these classes, providing them with role models affirming that there are women in science.



\*All Data Provided by the Office of Institutional Research, Planning, and Outcomes Assessment (IRPOA) unless otherwise noted

**Table 1: New Mexico State University Faculty by Category, Fall 2006**

Faculty Category	All NMSU <sup>1</sup>			STEM and SBS Departments			Social and Behavioral Science Departments			ADVANCE (STEM) Departments <sup>1</sup>		
	All	Female	%Female	All	Female	%Female	All	Female	%Female	All	Female	%Female
Tenure/Tenure Track	567	189	33.3%	266	116	43.6%	54	22	40.7%	247	51	20.6%
Temporary/Non-tenure Track <sup>2</sup>	121	70	60.3%	81	47	58.0%	9	6	66.6%	31	17	54.8%
Total	688	259	37.6%	347	163	47.0%	63	28	44.4%	278	68	24.5%

<sup>1</sup>For a complete list of Social and Behavioral Science Departments and ADVANCE (STEM) Departments, see Table 3.

**Table 2: Distribution of NMSU STEM Faculty by Category and Gender, Fall Semesters 1995 – 2006**

	Tenure/Tenure Track			Non-Tenure Track			All Categories		
	Total	Female	% Female	Total	Female	% Female	Total	Female	% Female
<b>1995</b>	251	34	13.5%	35	15	42.9%	286	49	17.1%
<b>1996</b>	246	33	13.4%	31	15	48.4%	277	48	17.3%
<b>1997</b>	250	40	16.0%	31	17	54.8%	281	57	20.3%
<b>1998</b>	247	41	16.6%	36	18	50.0%	283	59	20.8%
<b>1999</b>	240	42	17.5%	27	16	59.3%	267	58	21.7%
<b>2000</b>	231	40	17.3%	32	22	68.8%	263	62	23.6%
<b>2001</b>	233	37	15.9%	30	18	60.0%	263	55	20.9%
<b>2002</b>	232	41	17.7%	39	19	48.7%	271	60	22.1%
<b>2003</b>	236	42	17.8%	24	16	66.7%	260	58	22.3%
<b>2004</b>	241	46	19.1%	23	13	56.5%	264	59	22.3%
<b>2005</b>	244	47	19.3%	21	13	61.9%	265	60	22.6%
<b>2006</b>	247	51	20.6%	31	17	54.8%	278	68	24.5%

**Table 3: Fall 2006 STEM and SBS Departmental Faculty Sex Composition**

	Tenured and Tenure Track			Non-Tenure Track			Non-Tenure Track as % All Females
	All	Female	%Female	All	Female	% Female	
<b>Agriculture and Home Economics</b>	<b>63</b>	<b>18</b>	<b>28.6%</b>	<b>5</b>	<b>2</b>	<b>40.0%</b>	<b>10.0%</b>
Agronomy and Horticulture	16	3	18.8%	2	1	50.0%	25.0%
Animal and Range Science	19	2	10.5%	1	0	0.0%	0.0%
Entomology, Plant Pathology and Weed Science	11	3	27.3%	1	0	0.0%	0.0%
Family and Consumer Science	10	8	80.0%	0	0	0.0%	0.0%
Fishery and Wildlife Sciences	7	2	28.6%	1	1	100.0%	33.3%
<b>Arts and Sciences</b>	<b>110</b>	<b>26</b>	<b>23.6%</b>	<b>21</b>	<b>14</b>	<b>66.7%</b>	<b>53.8%</b>
Astronomy	8	1	12.5%	1	1	100.0%	50.0%
Biology	21	7	33.3%	0	0	0.0%	0.0%
Chemistry and Biochemistry	19	3	15.8%	5	3	60.0%	50.0%
Computer Sciences	12	2	16.7%	2	2	100.0%	50.0%
Geological Sciences	5	2	40.0%	0	0	0.0%	0.0%
Mathematical Sciences	29	10	34.5%	12	7	58.3%	41.2%
Physics	16	1	6.3%	1	1	100.0%	50.0%
<b>Engineering</b>	<b>75</b>	<b>7</b>	<b>9.3%</b>	<b>4</b>	<b>1</b>	<b>25.0%</b>	<b>12.5%</b>
Electrical and Computer Engineering	18	1	5.6%	1	1	100.0%	50.0%
Chemical Engineering	7	1	14.3%	0	0	0.0%	0.0%
Civil and Geological Engineering	15	2	13.3%	1	0	0.0%	0.0%
Engineering Technology	12	2	16.7%	0	0	0.0%	0.0%
Industrial Engineering	5	1	20.0%	1	0	0.0%	0.0%
Mechanical Engineering	15	0	0.0%	1	0	0.0%	0.0%
Survey Engineering	3	0	0.0%	0	0	0.0%	0.0%
<b>Social and Behavioral Sciences</b>	<b>54</b>	<b>22</b>	<b>40.7%</b>	<b>9</b>	<b>6</b>	<b>66.7%</b>	<b>21.4%</b>
Communications	5	2	40.0%	4	4	100.0%	66.7%
Criminal Justice	9	4	44.4%	2	0	0.0%	0.0%
Geography	5	1	20.0%	0	0	0.0%	0.0%
Government	10	2	20.0%	1	1	100.0%	33.3%
Psychology	11	4	36.4%	0	0	0.0%	0.0%
Sociology and Anthropology	14	9	64.3%	2	1	50.0%	10.0%



**Table 5: Faculty by Gender and Ethnicity, Number and Percent of Total within Tenured and Tenure-Track and Non-Tenure Track**

2005		Tenured and Tenure-Track						Non-Tenure Track				
		Hispanic	Asian	Black	White	Am. Indian	Not Coded	Hispanic	Asian	Black	White	Not Coded
STEM <sup>1</sup>	Female	7 2.9%	6 2.5%	0 0.0%	32 13.2%	0 0.0%	1 2.9%	1 3.2%	0 0.0%	0 0.0%	16 51.6%	1 3.2%
	Male	15 6.2%	21 8.7%	2 0.8%	155 64.0%	1 0.4%	2 0.8%	0 0.0%	0 0.0%	0 0.0%	9 29.0%	4 12.9%
	<b>Total</b>	22	27	2	187	1	3	1	0	0	25	5
SBS <sup>2</sup>	Female	3 5.9%	1 2.0%	0 0.0%	18 35.3%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	4 50.0%	1 12.5%
	Male	2 3.9%	0 0.0%	0 0.0%	27 52.9%	0 0.0%	0 0.0%	1 12.5%	0 0.0%	0 0.0%	2 25.0%	0 0.0%
	<b>Total</b>	5	1	0	45	0	0	1	0	0	6	1
Non-STEM and Non-SBS <sup>3</sup>	Female	11 4.3%	3 1.2%	2 0.8%	84 32.9%	2 0.8%	3 1.2%	6 12.8%	0 0.0%	0 0.0%	26 55.3%	1 2.1%
	Male	21 8.2%	6 2.4%	1 0.4%	118 46.3%	3 1.2%	1 0.4%	3 6.4%	0 0.0%	0 0.0%	10 21.3%	1 2.1%
	<b>Total</b>	32	9	3	202	5	4	9	0	0	36	2

2006		Tenured and Tenure-Track						Non-Tenure Track				
		Hispanic	Asian	Black	White	Am. Indian	Not Coded	Hispanic	Asian	Black	White	Not Coded
STEM <sup>1</sup>	Female	6 2.4%	7 2.9%	0 0.0%	35 14.3%	0 0.0%	1 0.4%	1 3.0%	1 3.0%	0 0.0%	13 39.4%	4 12.1%
	Male	15 6.1%	23 9.4%	2 0.8%	150 61.2%	1 0.4%	5 2.0%	0 0.0%	1 3.0%	0 0.0%	11 33.3%	2 6.1%
	<b>Total</b>	21	30	2	185	1	6	1	2	0	24	6
SBS <sup>2</sup>	Female	3 5.6%	1 1.9%	0 0.0%	17 31.5%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	4 44.4%	2 22.2%
	Male	4 7.4%	0 0.0%	0 0.0%	25 46.3%	0 0.0%	4 7.4%	1 11.1%	0 0.0%	0 0.0%	2 22.2%	0 0.0%
	<b>Total</b>	7	1	0	42	0	4	1	0	0	6	2
Non-STEM and Non-SBS <sup>3</sup>	Female	12 4.5%	2 0.8%	2 0.8%	86 32.5%	3 1.1%	10 3.8%	8 10.4%	0 0.0%	0 0.0%	30 39.0%	10 13.0%
	Male	21 7.9%	7 2.6%	1 0.4%	113 42.6%	4 1.5%	4 1.5%	4 5.2%	1 1.3%	0 0.0%	16 20.8%	8 10.4%
	<b>Total</b>	33	9	3	199	7	14	12	1	0	46	18

<sup>1</sup>ADVANCE Departments

<sup>2</sup>Social and Behavioral Science Departments

<sup>3</sup>Departments that are not ADVANCE departments nor Social and Behavioral Science Departments

**Table 6A: Assistant Professor Cohorts, ADVANCE (STEM) Departments**

Cohort Year	# In Cohort		Tenured		Left Institution				Not yet tenured	
					After P/T		Without P/T			
	M	F	M	F	M	F	M	F	M	F
1995	9	4	8	1	1	1	0	2	0	0
1996	10	1	4	1	3	0	3	0	0	0
1997	10	0	6	0	1	0	3	0	0	0
1998	5	3	5	2	0	1	0	0	0	0
1999	7	4	5	4	0	0	2	0	0	0
2000	6	2	5	0	0	0	1	1	0	1
2001	18	1	5	0	0	0	6	0	7	1
2002	11	6	3	2	0	0	2	0	6	4
2003	14	4	0	1	0	0	0	1	14	2
2004	7	5	0	0	0	0	0	1	7	4
2005	5	2	0	0	0	0	0	0	5	2
2006	5	4	0	0	0	0	0	0	5	4
<b>Total</b>	107	36	41	11	5	2	17	5	44	18

Total 102 32 41 11 5 2 17 5 39 14  
 1995-2005

**Table 6B: Assistant Professor Cohorts, Non-ADVANCE (STEM) Departments**

Cohort Year	# In Cohort		Tenured		Left Institution				Not yet tenured	
					After P/T		Without P/T			
	M	F	M	F	M	F	M	F	M	F
1995	10	13	6	4	1	2	3	7	0	0
1996	9	15	7	6	0	2	2	7	0	0
1997	8	13	2	6	1	2	5	5	0	0
1998	10	5	3	2	0	0	7	3	0	0
1999	8	5	5	1	0	1	2	3	1	0
2000	10	9	7	3	0	0	3	3	0	3
2001	4	13	1	2	0	0	0	1	3	10
2002	14	20	3	1	0	0	4	5	7	14
2003	12	7	0	1	0	0	3	1	9	5
2004	6	10	0	0	0	0	2	2	4	8
2005	2	5	1	0	0	0	0	1	1	4
2006	8	10	0	0	0	0	0	0	8	10
<b>Total</b>	101	125	35	26	2	7	31	38	33	54

Total 1995-2005 93 115 35 26 2 7 31 38 25 44

**Table 7A: Associate Professor Cohorts, ADVANCE (STEM) Departments**

Cohort Year	# In Cohort		Promoted		Left		Not yet promoted		Not yet tenured	
	M	F	M	F	M	F	M	F	M	F
1995	6	1	0	1	2	0	4	0	0	0
1996	7	3	3	1	2	1	2	1	0	0
1997	9	1	4	1	3	0	2	0	0	0
1998	8	4	5	2	0	1	3	1	0	0
1999	10	2	6	1	2	1	2	0	0	0
2000	9	3	2	1	3	2	4	0	0	0
2001	7	1	3	0	1	1	3	0	0	0
2002	5	1	1	0	1	0	3	1	1	0
2003	7	0	0	0	0	0	7	0	0	0
2004	8	2	0	0	0	0	8	2	1	0
2005	5	5	0	0	0	0	5	5	0	1
2006	11	3	0	0	0	0	11	3	2	0
<b>Total</b>	92	26	24	7	14	6	54	13	4	1

Total 1995-2005      81      23      24      7      14      6      43      10      2      1

**Table 7B: Associate Professor Cohorts, Non-STEM Departments**

Cohort Year	# In Cohort		Promoted		Left		Not yet promoted		Not yet tenured	
	M	F	M	F	M	F	M	F	M	F
1995	8	11	1	3	2	5	5	3	0	0
1996	11	6	5	3	3	2	3	1	0	0
1997	5	3	1	1	0	1	4	1	0	0
1998	7	9	2	2	2	4	3	3	0	0
1999	6	10	4	2	1	3	1	5	0	0
2000	4	4	2	0	0	1	2	3	0	0
2001	2	5	0	1	1	2	1	2	0	0
2002	11	7	1	0	0	1	10	6	2	1
2003	5	7	0	0	2	0	3	7	0	2
2004	4	4	0	0	0	0	4	4	1	1
2005	5	5	0	0	0	0	5	5	1	1
2006	10	8	0	0	0	0	10	8	1	3
<b>Total</b>	78	79	16	12	11	19	51	48	5	8

Total 1995-2005      68      71      16      12      11      19      41      40      4      5

**Table 8: Tenured and Tenure Track Age, Time at NMSU, Experience and Time to Tenure, 2006**

2006	SBS <sup>1</sup> Departments			STEM <sup>2</sup> Departments			Non STEM/SBS Departments <sup>3</sup>		
	Males	Females	Gender Gap <sup>4</sup>	Males	Females	Gender Gap <sup>4</sup>	Males	Females	Gender Gap <sup>4</sup>
<b>Age</b>									
Mean	46.6	45.6	1.0	48.9	46.4	2.5	51.6	48.7	2.8
Median	46.5	44.5	2.0	48.5	45	3.5	53	49	4.0
Std. Dev.	9.4	7.6		9.1	8		9	9	
Minimum	30	33		29	29		30	30	
Maximum	61	59		74	65		70	69	
# of valid cases	32	22		192	47		153	117	
<b>Time at NMSU</b>									
Mean	11	10.2	0.9	13.8	9.7	4.1	13.6	8.7	5.0
Median	10.7	10.2	0.5	12.2	7.8	4.4	12.3	6.2	6.1
Std. Dev.	8.3	6		9.6	6.7		8.7	6.6	
Minimum	0.2	0.2		0.2	0.2		0.2	0.2	
Maximum	31.2	23.2		42.1	23.3		35.2	23.2	
# valid cases	32	22		192	47		153	117	
<b>Years of Experience<sup>5</sup></b>									
Mean	16.1	12.8	3.2	19.1	15.1	4.0	18.4	12.9	5.5
Median	15.3	13.8	1.5	17.9	14.9	3.0	16.9	11.8	
Std. Dev.	9.3	7.3		9*9	7.6		9.2	7.8	
Minimum	0.7	1.5		1.5	2.7		2.5	1.5	
Maximum	32.9	28.9		45.9	31.9		39.9	33.9	
# valid cases	30	22		191	47		151	116	

<sup>1</sup>Social and Behavioral Science Departments<sup>2</sup>ADVANCE Departments<sup>3</sup>Departments that are not ADVANCE departments nor Social and Behavioral Science Departments<sup>4</sup>Gender Gap: Male minus Female.<sup>5</sup>Years of experience: Current year minus date of Ph.D.

**Table 9: Tenure and Tenure Track Monthly Salary by Rank, 2005**

	SBS Departments <sup>1</sup>			STEM Departments <sup>2</sup>			Non-STEM and Non-SBS <sup>3</sup>		
	Males	Females	Gender Gap <sup>4</sup>	Males	Females	Gender Gap*	Males	Females	Gender Gap <sup>4</sup>
<b>Monthly Salary:</b>									
<b>Assistant Professors</b>									
Mean	\$4,954.37	\$4,584.82	\$369.55	\$6,299.63	\$6,119.21	\$180.42	\$5,270.01	\$5,086.37	\$183.64
Median	\$5,290.53	\$41,999.87	\$1,090.65	\$6,128.89	\$6,000.00	\$128.89	\$5,133.84	\$4,649.59	\$484.25
Std. Dev.	\$653.82	\$889.79		\$1,134.80	\$1,216.18		\$1,052.06	\$1,220.93	
Minimum	\$9,875.00	\$3,909.87	Ratio:	\$4,440.80	\$4,333.33	Ratio:	\$3,795.59	\$3,478.67	Ratio:
Maximum	\$5,831.95	\$6,280.81	0.93	\$8,725.14	\$8,794.43	0.97	\$8,316.82	\$9,485.16	0.97
# valid cases	12	7		44	17		27	49	
<b>Monthly Salary:</b>									
<b>Associate Professors</b>									
Mean	\$5,560.38	\$5,440.64	\$119.74	\$6,953.81	\$6,391.83	\$561.99	\$6,127.41	\$5,925.09	\$202.32
Median	\$5,595.05	\$5,021.00	\$574.05	\$9,701.28	\$6,265.37	\$435.91	\$5,888.92	\$5,367.52	\$521.40
Std. Dev.	\$1,520.99	\$849.84		\$1,291.43	\$984.80		\$1,439.80	\$1,534.83	
Minimum	\$3,180.36	\$4,508.14	Ratio:	\$4,669.58	\$5,151.26	Ratio:	\$4,177.22	\$4,221.07	Ratio:
Maximum	\$7,795.83	\$6,738.28	0.98	\$9,238.06	\$9,260.44	0.92	\$10,678.48	\$10,865.11	0.97
# valid cases	11	12		62	16		59	39	
<b>Monthly Salary:</b>	\$5,560.38	\$5,440.64	\$119.74	\$6,953.81	\$6,391.83	\$561.99	\$6,127.41	\$5,925.09	\$202.32
<b>Full Professors</b>									
Mean	\$6,528.43	\$8,000.97	(\$1,472.55)	\$8,133.42	\$7,453.19	\$680.23	\$7,407.07	\$7,365.26	\$41.80
Median	\$6,726.64	\$7,709.49	(\$982.86)	\$7,823.76	\$7,186.70	\$637.06	\$7,354.02	\$7,086.63	\$267.39
Std. Dev.	\$1,727.28	\$886.53		\$1,572.94	\$905.97		\$1,700.57	\$1,454.93	
Minimum	\$2,594.05	\$7,296.88	Ratio:	\$4,236.88	\$6,397.58	Ratio:	\$4,659.27	\$5,147.95	Ratio:
Maximum	\$8,129.57	\$8,996.55	1.23	\$12,191.67	\$9,470.51	0.92	\$11,756.73	\$12,453.88	0.99
# valid cases	9	3		88	15		65	29	

<sup>1</sup>Social and Behavioral Science Departments

<sup>2</sup>ADVANCE Departments

<sup>3</sup>Departments that are not ADVANCE departments nor Social and Behavioral Science Departments

<sup>4</sup>Gender Gap: Male minus Female.

<sup>5</sup>Ratio: consistent with conventional reporting on pay gaps between men and women, the ratio of women's to men's median earnings was computed and reported. This ratio is interpreted as the amount the average woman earns for every dollar the average man earns.

**Table 10: Non-Contract Age, Time at NMSU, Experience and Monthly Salary, 2005**

2006	SBS <sup>1</sup> Departments			STEM <sup>2</sup> Departments			Non STEM/SBS <sup>3</sup>		
	Males	Females	Gender Gap <sup>4</sup>	Males	Females	Gender Gap <sup>4</sup>	Males	Females	Gender Gap <sup>4</sup>
<b>Age</b>									
Mean	51.36	58.3	-7	54.2	43.8	10.4	52.5	51.6	0.9
Median	54	61	-7	53.58	44	9.5	53	53	0
Std. Dev.	8.3	8.5		10.8	8.3		7	7.6	
Minimum	42	46		36	31		40	35	
Maximum	58	65		69	64		63	63	
# valid cases	3	4		12	16		23	45	
<b>Time at NMSU</b>									
Mean	5	10.7	-5.7	8.7	7.1	1.6	9.6	5.3	4.3
Median	5.2	7.2	-2	5.3	5.5	-0.2	7.2	2.8	4.4
Std. Dev.	2.7	9.9		8.5	6.1		8.2	5.7	
Minimum	2.2	3.2		1.8	1.1		0.8	0.2	
Maximum	7.6	25.2		26.1	24.2		26.8	20.2	
# valid cases	3	4		12	16		23	45	
<b>Years of Experience</b>									
Mean	11.8	22.6	-10.8	20.2	14	6.2	20.5	14.9	5.6
Median	10.8	25.4	-14.6	20.9	12.8	8.1	20.4	12.8	7.6
Std. Dev.	3.6	13.2		10.4	8.5		9.5	9.6	
Minimum	8.8	4.8		1.4	3.5		3.8	2.8	
Maximum	15.9	34.9		37.9	39.9		37.9	36.9	
# valid cases	3	4		12	15		22	45	
<b>Monthly Salary: All Non-Contract</b>									
Mean	\$4,204.05	\$3,568.65	\$635.40	\$4,589.35	\$4,398.58	\$190.80	\$4,781.91	\$4,276.90	\$505.01
Minimum	\$3,745.09	\$3,317.92		\$1,577.33	\$2,493.20		\$2,708.59	\$1,288.08	
Maximum	\$5,095.33	\$3,946.74		\$6,777.53	\$6,566.82		\$6,532.11	\$8,752.95	
# valid cases	3	4		12	16		23	45	
<b>Monthly Salary: Excluding Instructor Rank</b>									
Mean	\$4,204.05	\$3,568.65	\$635.40	\$4,993.93	\$4,419.15	\$574.80	\$4,825.02	\$4,630.64	\$194.38
Minimum	\$3,745.09	\$3,317.92		\$2,627.13	\$2,493.20		\$2,872.86	\$1,899.82	
Maximum	\$5,095.33	\$3,945.74		\$6,777.53	\$6,566.82		\$6,532.11	\$8,752.95	
# valid cases	3	4		10	15		21	27	

<sup>1</sup>Social and Behavioral Science Departments

<sup>2</sup>ADVANCE Departments

<sup>3</sup>Departments that are not ADVANCE departments nor Social and Behavioral Science Departments

<sup>4</sup>Gender Gap: Male minus Female.

**Table 11: NMSU Administrative Leadership Positions, Fall 2002 and 2005**

	2002				2006			
	Total	Male	Female	% Female	Total	Male	Female	% Female
<b>STEM<sup>1</sup> Department Heads</b>	19	17	2	10.5%	18	15	3	16.7%
<b>STEM<sup>1</sup> Associate Department Heads</b>	7	6	1	14.3%	4	4	0	0.0%
<b>STEM<sup>1</sup> Assistant Department Heads</b>	1	1	0	0.0%	3	3	0	0.0%
<b>Vice Presidents/Provosts</b>	5	3	2	40.0%	5	3	2	40.0%
<b>Vice Provosts</b>	3	1	2	66.7%	4	2	2	50.0%
<b>Deans<sup>1</sup></b>	8	5	2	25.0%	11	8	3	27.3%
<b>Associate Deans</b>	11	7	4	36.4%	9	7	2	22.2%

<sup>1</sup>ADVANCE Departments.

<sup>2</sup>The three female deans in 2006 were the Dean of the Graduate School, the Dean of the College of Arts and Sciences, and the Library Dean. A search is in progress to fill the position of the Dean of the College of Agriculture and Home Economics.

\*Data Source: NMSU Institutional Fact Book 2006.

**Table 12: Social and Behavioral Science (SBS) Faculty, ADVANCE (STEM) Faculty , and Faculty not in ADVANCE Departments nor Social and Behavioral Science Departments (Non-STEM and Non-SBS) Holding Regents' Professorships, 2005**

	Total	Men	Women
SBS Departments	3	2	1
STEM Departments	12	10	2
Non-STEM and Non-SBS	9	8	1
Total	24	20	4

\*Data Source: Teaching Academy at NMSU website, Regents Professors who have left the University and Emeritus professors are not counted in totals.

**Table 13: Gender Distribution of Tenure and Promotion Committees 1997-2005**

	College of Agriculture and Home Economics			College of Arts and Sciences			College of Engineering		
	Total	Female	% Female	Total	Female	% Female	Total	Female	% Female
1997-1998	N/A	N/A	N/A	6	0	0.0%	6	0	0.0%
1998-1999	5	1	20.0%	6	0	0.0%	7	0	0.0%
1999-2000	5	2	40.0%	6	1	16.6%	6	0	0.0%
2000-2001	5	2	40.0%	6	1	16.6%	7	0	0.0%
2001-2002	5	2	40.0%	6	1	16.6%	6	0	0.0%
2002-2003	5	2	40.0%	6	1	16.6%	6	0	0.0%
2003-2004	5	2	40.0%	6	2	33.3%	5	0	0.0%
2004-2005	5	2	40.0%	6	2	33.3%	5	0	0.0%
2005-2006	7	3	42.9%	6	3	50.0%	6	1	16.6%
2006-2007	N/A	N/A	N/A	6	2	33.3%	5	0	0.0%

\*Data Source: College Deans' offices, Data not available for College of Agriculture and Home Economics

**Table 14: Women as a Percent of All Ph. D. Recipients Nationwide, 2003, Post Docs, 2001, Academic Employment, 2001 and NMSU Faculty, 2006**

	Physical Sciences <sup>1</sup>	Biological and Agricultural Sciences <sup>2</sup>	Earth and Atmospheric Sciences <sup>3</sup>	Mathematical Sciences <sup>4</sup>	Computer Sciences <sup>5</sup>	Engineering <sup>6</sup>
<b>National, 2003</b>	26.9%	44.0%	33.1%	26.5%	20.2%	17.0%
<b>Post Docs, 2001</b>	23.1%	43.1%	25.0%	25.0%	0.0%	22.2%
<b>Employed in Academia, 2001</b>	12.1%	31.3%	18.6%	13.6%	18.2%	7.8%
<b>NMSU Faculty<sup>7</sup>, 2006</b>	12.5%	24.0%	40.0%	34.5%	18.2%	9.2%

<sup>1</sup>Physical Sciences Includes: Astronomy, Chemistry and Biochemistry, and Physics

<sup>2</sup>Biological and Agricultural Sciences Includes: Agronomy and Horticulture; Entomology, Plant Pathology and Weed Science; Animal and Range Sciences; Fishery and Wildlife Sciences and Biology

<sup>3</sup>Earth and Atmospheric Sciences Includes: Geological Sciences

<sup>4</sup>Mathematical Sciences Includes: Mathematical Sciences

<sup>5</sup>Computer Sciences Includes: Computer Science

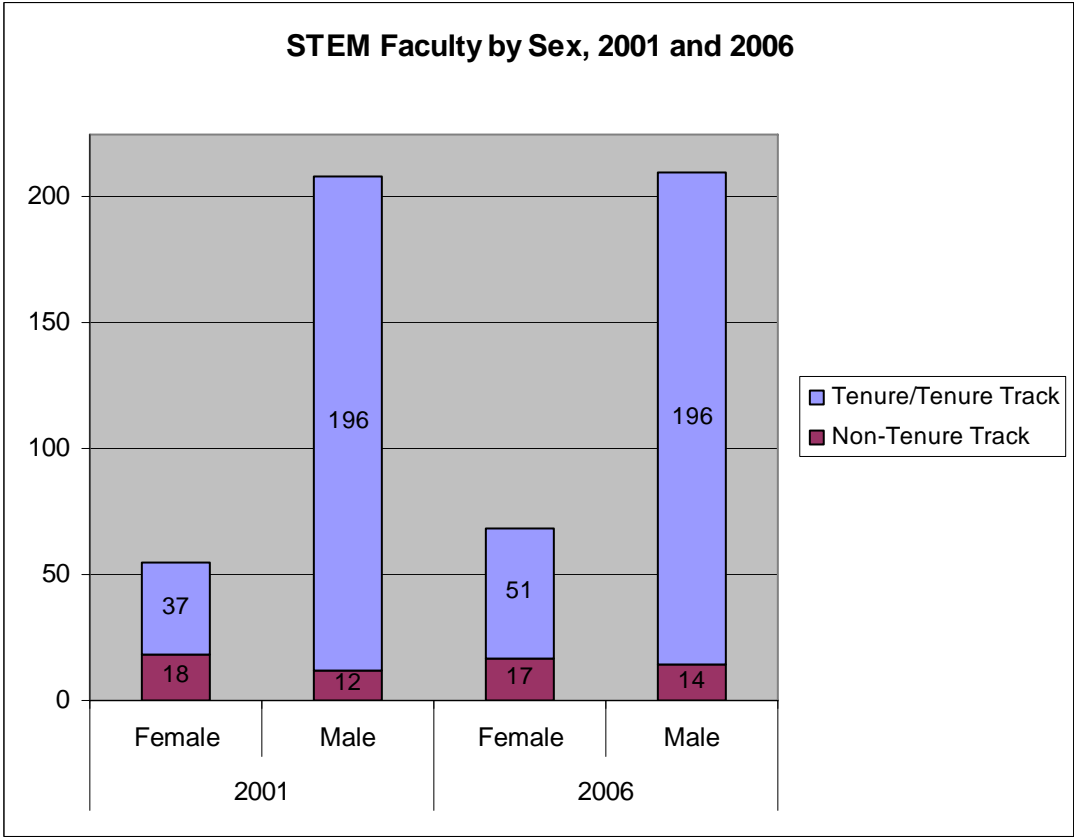
<sup>6</sup>Engineering Includes: Chemical Engineering; Civil and Geological Engineering; Electrical and Computer Engineering; Engineering Technology; Industrial Engineering; Mechanical Engineering and Survey Engineering

<sup>7</sup>Tenured and Tenure-Track Faculty Only.

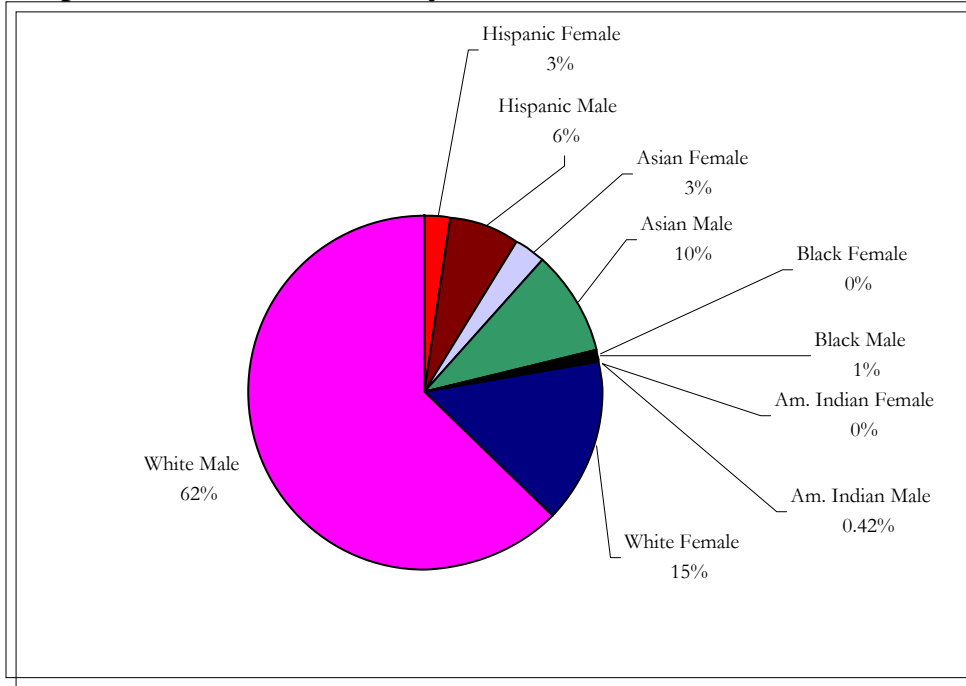
**Table 15: Women as a percentage of all STEM new hires 1995-2006**

1995	33%
1996	9%
1997	0%
1998	29%
1999	36%
2000	22%
2001	6%
2002	35%
2003	33%
2004	36%
2005	38%
2006	40%

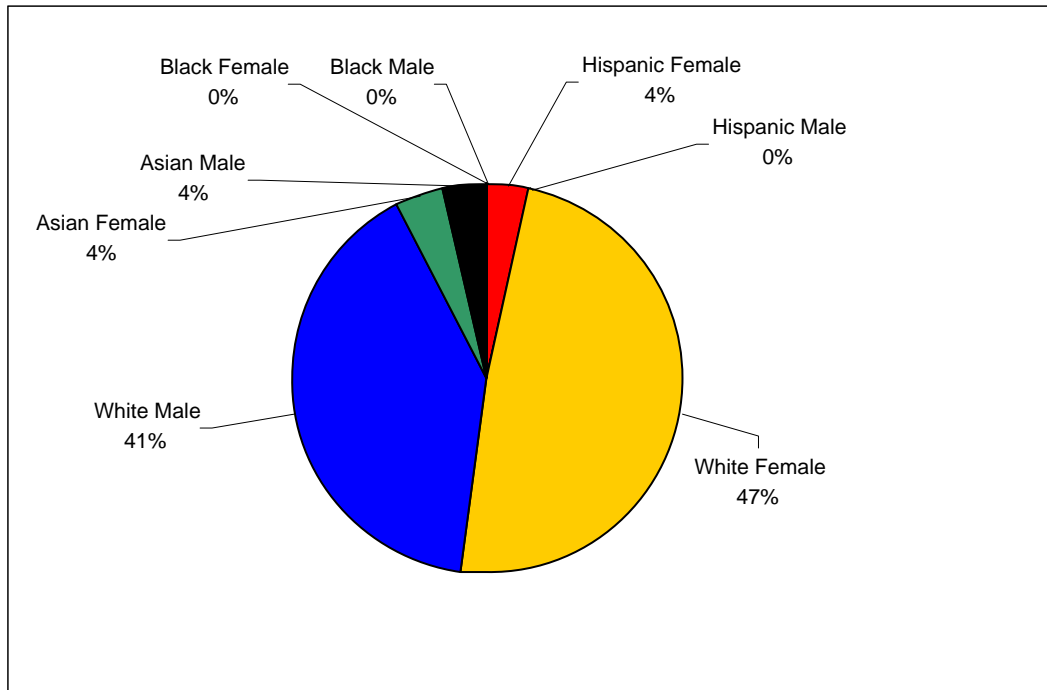
**Graph 1: STEM Faculty by Sex, Beginning of ADVANCE and Current**



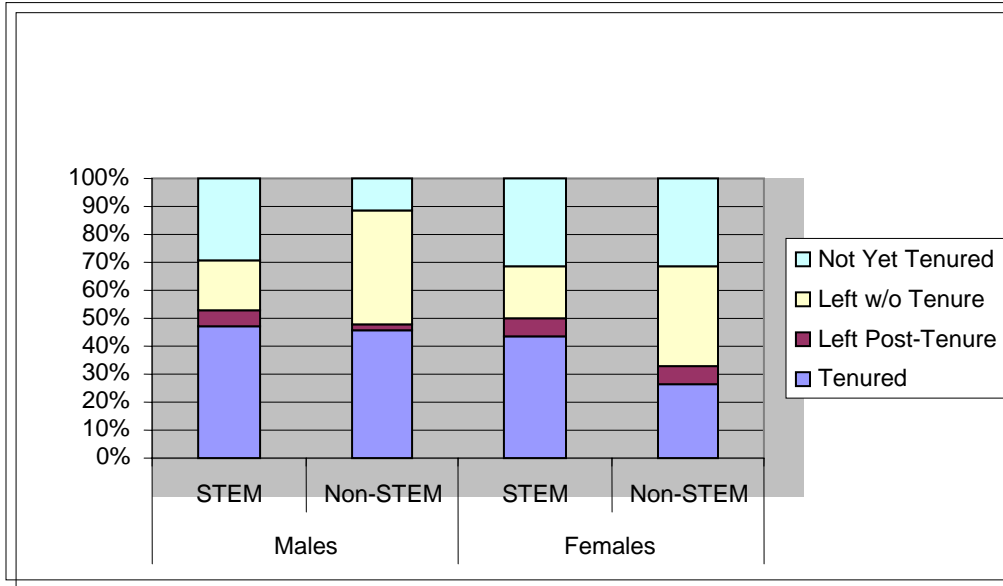
**Graph 2: Gender and Ethnicity of Tenured and Tenure-Track STEM Faculty, Fall 2006**



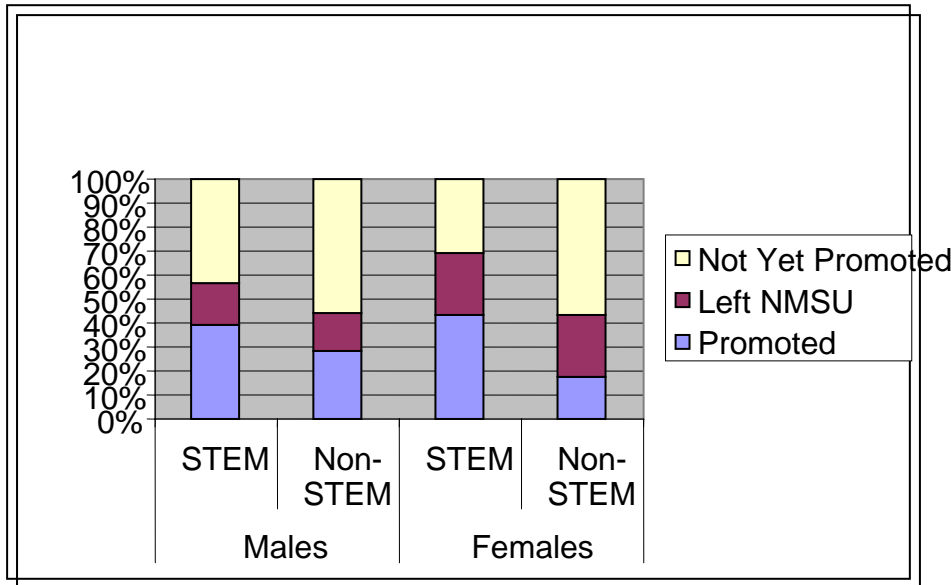
**Graph 3: Gender and Ethnicity of Non Tenure-track STEM Faculty, Fall 2006**



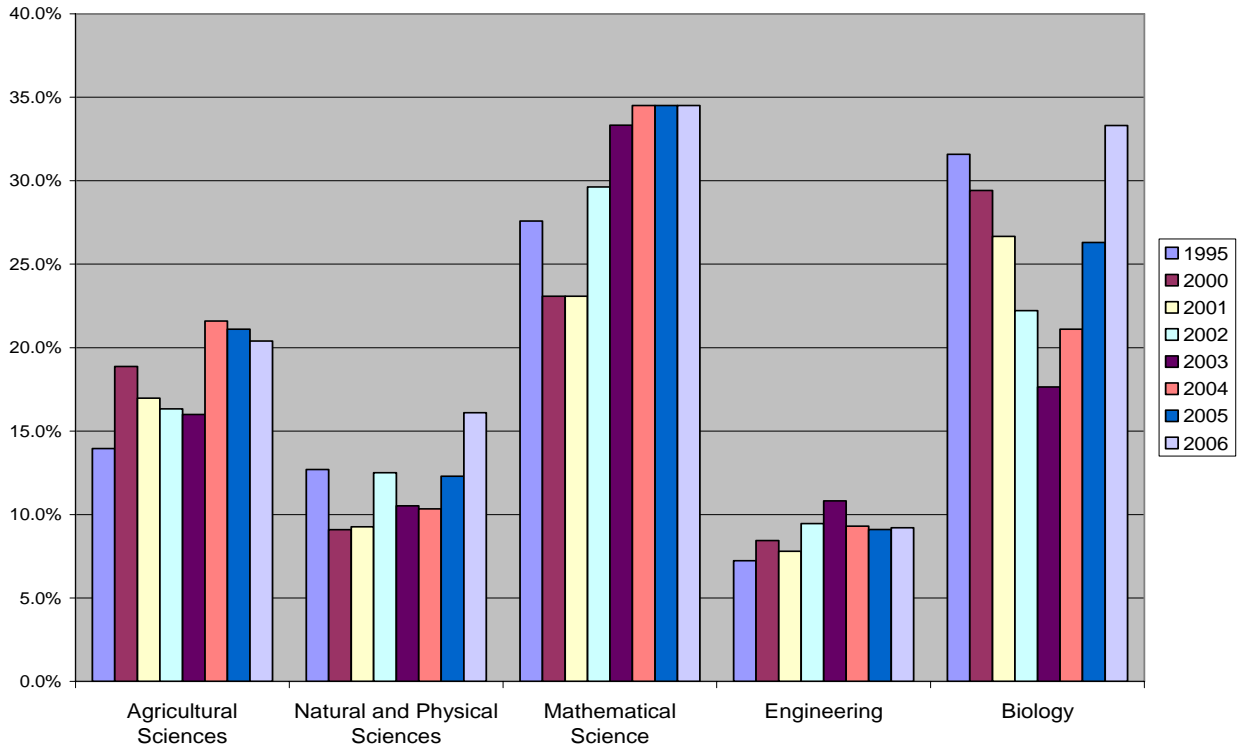
**Graph 4: Status of Assistant Professor Cohorts 1995-2005 , ADVANCE vs. Non-ADVANCE in Fall 2006**



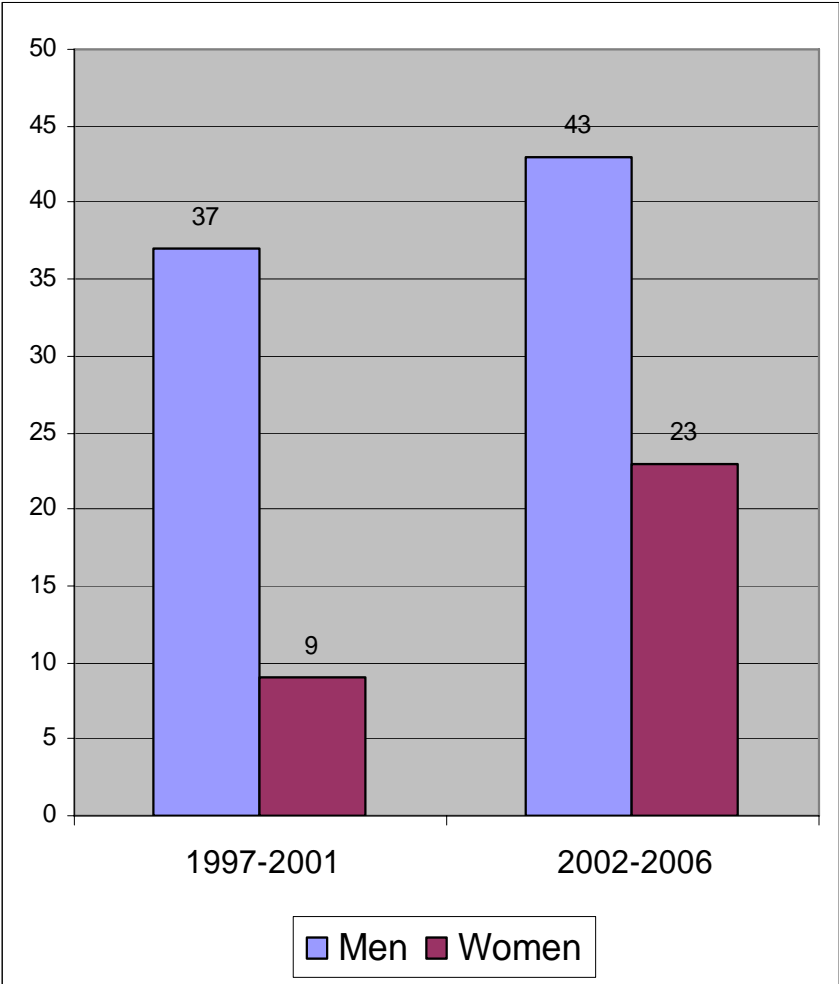
**Graph 5: Status of Associate Professor Cohorts 1995-2005 , ADVANCE vs. Non-ADVANCE in Fall 2006**



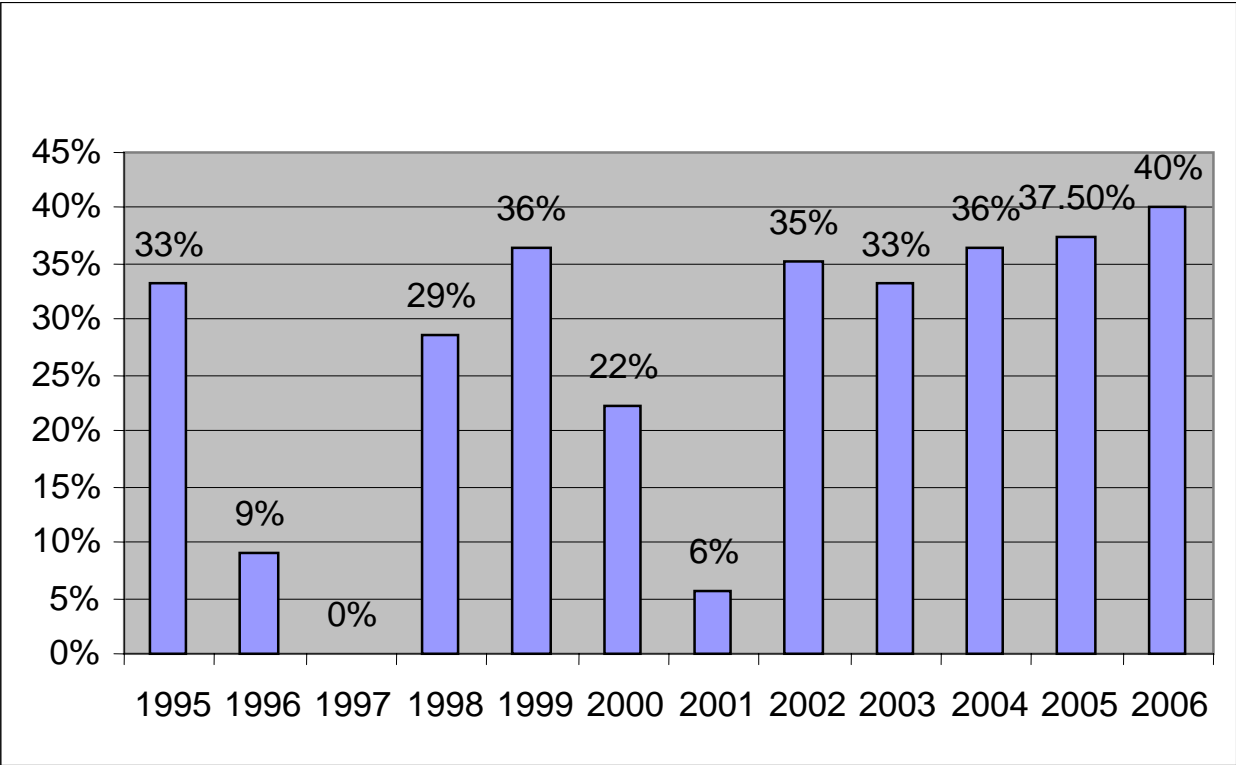
**Graph 6: Women as a percentage of STEM Tenured and Tenure-track faculty by discipline, 1995-2006**



**Graph 7: Number of women STEM newhires pre-ADVANCE and during ADVANCE**



**Graph 8: Percent of STEM new hires that were women 1995-2006**



## Appendix I

2006 Budget	2006 ANNUAL REPORT	NSF	Unobligated	NMSU Cost-Share
PERSONNEL	Program Director Research Time plus admin overload	43,000		
	Associate Director	33,333	16,667	16,667
	Co-PIs			29,000
	Exit Interview Course Release	4,560		
	Graduate Assistant(NSF)/Student (NMSU)	8,750	8,750	
	Research Analyst	28,500	6,500	
	Records Specialist			
	Dual Career - Women's Studies	6,000		
	Fringes	33,710	9,256	
TRAVEL	NSF PI Meeting	3,581		
	WEPAN	4,763		
	Other PI, Program Coordinator and Research Analyst Conference Travel	2,506		
	Grace Hopper -- Faculty and Students	10,754		
	Focus Groups	960		
	Mini-Grants for Faculty Professional Training	1,429		
PART. SPT.	Stipends: Faculty Development Program Participants	0	50,000	
CONSULTANT	External Evaluators	2,630	5,000	
START-UP FUNDS**	Start-Up Funds for new STEM female tenure-track faculty	85,000	195,121	26,300
RESEARCH FUNDS	Research Awards to STEM female tenure-track faculty	0		
	Undergraduate Research Awards	10,000		
COURSE RELEASE	Course Release Awards to STEM female tenure-track faculty	0		
	Mentoring Workshops	990		
FACULTY DEVELOPMENT	Promotion & Tenure Workshop Co-Sponsorship	811		
	Department Head Training: Evaluating Teaching, Research and Service (Valian)	305		
	Teaching Academy Workshop Leaders*	7,000		
ADVANCING LEADERS	Retreat, Luncheons, Books and Supplies	13,793	1,207	
VISITING PROF	Visiting Professor Program: Fees and Publicity	20,294		
OUTREACH	Women's Studies Luncheon	0		
	SWE/E-Week	200		
COMMUNICATIONS	Communications/Research	3,546		
TOTAL	Spent or committed for 2006	326,415		71,967
Grand Total	Available funds	421,581	292,501	

# Appendix I

2007 Budget	2007 Budget	Budgeted
PERSONNEL	Program Director: Research Time plus Admin Overload	43,000
	Associate Director	16,667
	Co-PIs	
	Research Analyst	17,500
	Fringes	22,378
TRAVEL	NSF PI Meeting	
	SWE Team Travel	0
	Teaching Academy Workshop Leaders*	3,500
	Visiting Professor Program facilitator	
	Travel awards for conference/research for STEM female tenure-track faculty	
PARTICIPANT	Stipends: Faculty Development Program Participants	
SUPPORT	Undergraduate Research Scholarships	0
CONSULTANT	External Evaluators	5,000
START-UP FUNDS	Start-Up Funds for new STEM female tenure-track faculty**	175,000
RESEARCH FUNDS	Mini-Grants for Faculty Professional Training	0
COURSE RELEASE	Course Release Awards to STEM female tenure-track faculty	
FACULTY DEVELOPMENT	Mentoring Workshops	1,000
	Promotion & Tenure Workshop Co-Sponsorship	456
	Department Head Training	500
	Teaching Academy Workshop Leaders*	3,500
ADVANCING LEADERS	Retreat, Luncheons, Books and Supplies	0
RECRUITMENT	Workshop	0
VISITING PROF	Visiting Professor Program: Fees and Publicity	0
OUTREACH	Outreach Event -- Women's Studies Luncheon	1000
COMMUNICATIONS	Communications	3,000
TOTAL		292,501
Available Funds		292,501