



ADVANCE: Institutional Transformation

Annual Report
January 1, 2007 – December 31, 2007

Tracy M. Sterling, PI and Program Director
Waded Cruzado-Salas, Co-PI
LeRoy Daugherty, Co-PI
Jozie De Leon, Co-PI
Rudi Schoenmackers, Co-PI

Pamela Hunt, Associate Director
Abby Javurek-Humig, Graduate Assistant; Research Analyst (ending August 21, 2007)

National Science Foundation Grant #SBE 0123690



Table of Contents

Participants	3
Program Personnel.....	3
Members, Committee on the Status of Women in STEM.....	4
Subcommittees.....	5
Participants' Summary.....	9
Activities and Findings	10
Overview	10
Research and Education Activities	10
Institutionalization	12
Findings.....	15
Opportunities for Training and Development.....	16
Outreach Activities.....	20
Products.....	24
Contributions.. ..	27
Appendices	
Appendix 1: Institutional Data Tables and Graphs	
Appendix 2: Budgets, 2007 and 2008 Program Years	



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. 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.

Abby Javurek-Humig, Research Analyst (ending 8/21/07)

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 (until August 31, 2007); Executive Vice President/Provost (starting September 1, 2007)

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 and Provost (until April 6, 2007)

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) (until April 2007)

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

Abby Javurek-Humig, Research Analyst, ADVANCE (until August 21, 2007)

Cecily Jeser-Cannavale (until April 10, 2006)

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 in the spring of 2006 in response to evaluator Dr. Laura 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



Faculty Development

Chair, Steven Kanim, Associate Professor of Physics
Maria Luisa Gonzales, Department Head, Educational Management and
Development (ending August 1, 2007)
Tara Gray, Director, New Mexico State University Teaching Academy
Nirmala Khandan, Professor of Civil and Geological Engineering
Inna Pivkina, Assistant Professor, Computer Science
April Ulery, Associate Professor, Agronomy and Horticulture

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:

Patricia Hynes, Program Director, New Mexico Space Grant Consortium, Co-Chair
Michael Morehead, Associate Dean, College of Education, Co-Chair
Robert Rhodes, Department Head and Professor, Special Education and
Communication Disorders (starting July 2006), Co-Chair
Cynda Clary, Special Assistant to the Provost, Past Chair
Tracy Sterling, Professor, Entomology, Plant Pathology and Weed Science and
ADVANCE PI/Program Director
Tara Gray, Director, Teaching Academy (starting July 2006)
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, ending June 27, 2007)
Michele Nishiguchi, Associate Professor, Biology
Diane Prindeville, Director, Women's Studies Program
Todd Savage, Assistant Professor, Counseling and Educational Psychology (ending
December 15, 2007)

ADVANCING Leaders Participants (2004-2005) (Inaugural year of program)

Brenda Benefit, Department Head and Professor, Sociology and Anthropology
Janice Black, Associate Professor, Management
Carolyn Chavez, Assistant Professor, Management
Steven Franks, Department Head and Associate Professor, Survey Engineering
Ricardo Jacquez, Professor, Civil and Geological Engineering and Director, New Mexico
Alliance for Minority Participation
Desh Ranjan, Department Head and Associate Professor, Computer Science
Allison Mann, Assistant Professor, Nursing
Gary Roemer, Assistant Professor, Fishery and Wildlife Sciences
Tracy Sterling, Entomology, Plant Pathology and Weed Science
Cynthia Pierard, Department Head, Research and Reference Services, NMSU Library
Connie Stout, Associate Professor, Special Education/Communication Disorders

Mentors for this cohort were:

Wes Holley, Associate Dean/Associate Director of Academic Programs, CAHE
Dan Howard, Academic Department Head, Biology
Marvin Bernstein, Professor, Biology
Douglas Gillan, Academic Department Head, Psychology
Sherry Mills, Associate Professor, Accounting and Business Computer Systems



Anne Gallegos, Regent's Prof, SPED/CD
George Alexander, Academic Department Head, Engineering Technology
Kenneth White, Academic Department Head, CAGE
Kathy Brook, Associate Dean, Business College

ADVANCING Leaders Participants (2005-2006)

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 were:

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
Enequina 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)

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 were:

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

ADVANCING Leaders Participants (2007-2008)

Richard Adkisson, Professor, Economics and International Business
Elsa Arroyos-Jurado, Assistant Professor, Counseling and Educational Psychology
Jamie Bronstein, Associate Professor, History
Susan Brown, Program Coordinator, Education Research and Budgeting
Earl Burkholder, Associate Professor, Engineering Technology and Surveying
Rebecca Creamer, Associate Professor, Entomology, Plant Pathology and Weed Science
Ivan De la Rosa, Associate Professor, Social Work
Sheila Horan, College Associate Professor, Electrical and Computer Engineering
Lou Reyes, Associate Professor, Curriculum and Instruction
Elba Serrano, Professor, Biology
Jeanette Smith, Professor, Information Services

Mentors for this cohort were:

Jeffrey Brown, Academic Department Head, History
Judith Weisinger, Associate Professor, Management
Luis Vazquez, Associate Dean, Graduate School
N. Khandan, Professor, Civil and Geological Engineering
Kathleen Brook, Associate Dean, Business
Satya Krishnan, Associate Professor, Health Science
Scott Moore, Dean of Students, Office of the Dean of Students
Carmen Gonzales, V P for Student Success and Dean, College of Extended Learning
Garrey Carruthers, Dean, Business
Lowell Catlett, Dean, Agriculture and Home Economics
Jeanne Gleason, Academic Department Head, Agricultural Information

Other Specific People Not Listed:

- Dr. William Flores, a strong ally of ADVANCE initiatives throughout the life of the grant, was appointed deputy secretary of higher education for the state of New Mexico.
- The EVP/Provost continued to participate in the university-wide promotion and tenure workshops and working sessions in collaboration with ADVANCE, the Hispanic Caucus, and the Teaching Academy. Dr. William Flores was the keynote speaker the Spring session in February, as was incoming EVP/Provost, Dr. Waded Cruzado-Salas in the Fall session. The Spring and Fall tenure working sessions were attended by 35 and 52 participants, respectively, from six colleges.
- Dr. Waded Cruzado-Salas, Dean of the College of Arts and Sciences and a Co-PI of the ADVANCE Program at NMSU, was appointed EVP/Provost in August. Dr. Cruzado has long championed ADVANCE goals at NMSU, and is a strong proponent of diversity.
- Dr. Tara Gray, Director of the Teaching Academy, worked with the ADVANCE PI/PD and Associate Director to transition the program to its future home in that department. While the Teaching Academy and ADVANCE have always collaborated to deliver faculty development workshops, Dr. Gray strengthened those ties this year by presenting a series of department head training events and bringing the CRLT players to campus. In addition, Dr. Gray helped disseminate ADVANCE Best Practices to the PAID Alliance for Faculty Diversity, of which she became Co-PI this year.
- Dr. Carmen Gonzalez is Vice Provost. For Distance Education and Dean of the College of Extended. She and her Associate Dean, Roberta Derlin, met with the PI/PD to discuss the legislative initiative, the importance of faculty diversity, and the NSF-PAID grant, in its first year.



- 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, Senior Assistant to the President, chaired the University's Diversity Committee and had worked with another committee to draft the position announcement for NMSU's first Omsbud position, a position proposed by the PCSW and supported by President Martin. That position was staffed, and an Ombuds Office was created this year.
- Diana Quintana, former Director of Human Resources, was promoted to Assistant to the President and made Director of the newly created Office of Ombuds.
- Dr. Timothy Wright, Assistant Professor, Biology, hosted the ADVANCE Distinguished Visiting Professor Mary Jane West-Eberhard in April. Dr. West-Eberhard is a senior scientist at the Smithsonian Tropical Research Institute and a leader in the field of evolutionary biology.



Participants' Summary

Between January and December 2007, 538 faculty, students, staff and community members attended events.

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

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

Fifty-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 twenty-one faculty members attended eight Department Head training sessions. With the exception of the PAID Department Head Retreat, these events were co-sponsored by ADVANCE and the Teaching Academy.

Details on participants:

- 82 (38 female, 49 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.)
- 86 faculty and department heads from 24 of the 36 non-STEM NMSU departments participated in an ADVANCE event.
- 100 faculty and administrators—mostly from STEM fields, with 19 from the social sciences—participated in the mentoring program (half men, half women).
- 21 department heads from 20 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, the Executive Vice President/Provost, all three members of the Provost's Office, and nine 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 was Research Analyst Abby Javurek-Humig.



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. Over the course of the grant, an office staff consisting of an Associate Director, Research Analyst, Graduate Assistant and two seasoned undergraduate student assistants have provided 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 that are conducted largely by ADVANCE Program personnel (Frehill, Jeser-Cannavale, and Javurek-Humig). In 2007, with the grant on a no-cost extension, the research and travel grant program for female STEM faculty in the 19 target STEM departments ended.

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 paper on this work appeared in conference proceedings.

Publications

- 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 (2007).
- Frehill, Lisa M., Cecily Jeser-Cannavale, Lauren Ketcham. "The Impact of a Mentoring Program on Women and Men in Science and Engineering." Proceedings of the 2007 WEPAN Conference.



Publications under preparation:

- 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. "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).
- **Exit Interviews:** NMSU Institutional Review Board approved this year's interviews. Working through the Provost's Office, ADVANCE obtained a list of faculty who have left and their contact information from Human Resources. The impact of this effort on the institution is evident: When Employee Relations was working to develop a university-wide exit interview process, their staff requested a meeting with ADVANCE exit interview researcher to review the questionnaire designed by ADVANCE. Thirty-four interviews will be completed by 2008. A final report is due by the end of the fall semester of that year.
- **Diversity in engineering:** Several presentations and papers have been based upon this work. Diversity as it relates to recruitment has been a consistent theme in this research strand.

Institutionalization of ADVANCE

In 2007 the program made considerable progress towards institutionalization of our Best Practices. As evidence of the institution's strong commitment to this aim and its responsiveness to climate change on campus, the university Budget Committee approved fully funding the Associate Director's salary starting in July 2007. This position was placed administratively in the Teaching Academy within the College of Extended Learning. The Teaching Academy is devoted to training Faculty in Professional Development specific to teaching. It is a long-term collaborator of ADVANCE, helping to deliver many of the program's Best Practices (i.e. Mentoring, Department Head training, P&T Workshops, ADVANCING Leaders). In 2007 it served as a critical dissemination tool for the newly awarded NSF-PAID grant, with the Teaching Academy Director becoming a co-PI of PAID.

Additional evidence of our partnership with the Teaching Academy and institutionalization is that the Teaching Academy is continuing to co-sponsor Department Head training events. In 2007, the Teaching Academy brought the CRLT players, and held workshops on assessment, and hosted a series of freewheeling discussions for department heads. Additionally, the Teaching Academy and ADVANCE joined with Black Studies and Chicano Programs to present a series of diversity lectures, featuring Harold Bailey, Peggy McIntosh and Tim Wise.

In addition, with the support of President Michael Martin and EVP/Provost Flores, ADVANCE again succeeded in getting a house bill on the docket of the New Mexico State legislative session. PI/PD Sterling traveled to Santa Fe where she 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 “NMSU ADVANCE Partnership.” President Martin is bringing to the NM Legislature for the January to March 2008 session. The bill requests \$600,000 to recruit diverse faculty in STEM disciplines through start-up package augmentation and is a top priority for the College of Extended Learning.

A proposal for an ombudsperson, crafted by founding PI Lisa Frehill and former Research Analyst Jeser-Cannavale, was approved in June, and an Office of the Ombuds was created, under the direction of an assistant to the President. In a communication to the Faculty Senate, the Director of the Office of Ombuds publicly recognized the key role that ADVANCE and the President’s Commission on the Status of Women played in this initiative. Position announcements are expected in 2008 for staff and faculty ombuds.

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. In November 2006 the Task Force had released a draft document for public comment across campus (including branch campuses and Extension faculty from across the state); each committee member had met with Department Heads and P&T committees from each College to engage dialog and encourage input. In January, the Task Force reconvened, and incorporated changes that were presented as legislation to the Faculty Senate in Spring 2007. On May 3, 2007 the Faculty Senate passed Proposition 18-06/07, which revised Sections 5.88, 5.90, and 5.91 of the NMSU Policy Manual. President Mike Martin approved the legislation on May 11, 2007 and the Board of Regents ratified the new promotion and tenure policy on September 7, 2007 and October 22, 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. Sterling and Senate Chair, Larry Creider, presented to the Dean’s Summer Retreat the highlights of the new policy in order to guide the Deans as they re-write their College policies to come into compliance with the new University policy.

The PI/PD Sterling chaired the College of Agriculture’s P&T Action Team charged with, as per the new University policy, bringing the College Promotion and Tenure Document into compliance with the University’s new policy.

In the aftermath of EVP/Provost’s Flores appointment to the position of deputy secretary of higher education for the state of New Mexico, the university launched a search for a new EVP/Provost. In August 2007 the promotion to that position of Waded Cruzado-Salas, Dean of the College of Arts and Sciences and a Co-PI of the ADVANCE Program, was announced. Dr. Cruzado has long championed ADVANCE goals at NMSU, and serves as a powerful ally in realizing the aims of the program.

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. In August of 2007 ADVANCE Research Analyst Abby Javurek-Humig joined the staff of IRPOA, in a newly created position that is designed to help meet the data-analysis needs of programs such as ADVANCE.

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 had committed to another Employee Climate Survey in 2007 and consistently thereafter, and to 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. However, the turnover in the position of EVP/Provost contributed to the postponement of this goal to 2008.

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) in 2006 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 another 16 interviews of faculty who have left NMSU for reasons other than retirement.

With input from ADVANCE, the Library included the Journal of Minorities and Women in Science and Engineering in the new periodicals that it determined to obtain after a serials collection review and collection project.

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.

As a member of the President's Commission on the Status of Women (PCSW) representing ADVANCE, the PI/PD worked on developing a gender equity policy during the past two years, that was approved in 2007. Very few universities in our country have established a gender equity policy. No other university in New Mexico has such a policy. The policy sets foundation to ensure that gender equity is a value for NMSU. With this policy statement, the Administration will determine whether additional recommendations from the President's Commission on the Status of Women will be implemented in the future. Other accomplishments include finalizing a draft of the search committee handbook that is open, transparent, and describes a gender-neutral process.

The PI/PD participated in the Higher Learning Commission institutional accreditation effort by serving as a "reader" of the self-study document.

To help move forward institutionalization, the program relies on 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. This professional works to stage events intended as advocacy and outreach activities 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.



Placing the ADVANCE Program within the Teaching Academy provides access to a strong administrative infrastructure, as evidenced by the assistance given by the Teaching Academy webmaster, who re-designed the ADVANCE website to update it and conform to NMSU style guides. In addition, on-line registration is now available for ADVANCE events, again through the Teaching Academy. The majority of ADVANCE programs and events took place in the Teaching Academy meeting room.

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 2007 tables reporting the 12 required indicators.

In the context of its 2007 no-cost extension the program discontinued internal awards for research and travel. The program did continue to pursue the aim of enhancing start-up packages to increase the number of female STEM tenure-track faculty hired, and succeeded in helping to attract a new Biologist, scheduled to come on campus in 2008. In addition, the program carried on its ADVANCE Undergraduate Research Scholarships program.

ADVANCE Undergraduate Research Scholarships

ADVANCE Undergraduate Research Scholarships are designed to permit ADVANCE recipients of internal awards (start-up fund enhancements or research grants) and other female STEM faculty to work with female undergraduate students on research projects. This year there were four ADVANCE scholars: Tori Gomez, Kalli Greif, Virginia Lee and Jeni Petersen

Tori Gomez presented a poster at the October 2006 Geological Society of America national conference in Philadelphia. She worked with Dr. Nancy McMillan on the use of portable X-Ray Fluorescence Spectrometry to determine the provenance of gem beryls. Dr. McMillan's research had initially been funded by an ADVANCE research subaward. She subsequently received funding to continue this research from the U.S. Army.

Kalli Greif delivered a presentation on her research, "Does UV light facilitate fish predation?" at the 2007 NMSU Undergraduate Research and Creative Arts Symposium (URCAS). Her Faculty Advisor was Dr. Wiebke Boeing, Fish, Wildlife and Conservation Ecology – a recipient of an ADVANCE start-up fund enhancement.

Virginia Lee, a 2007 ADVANCE Undergraduate Research Scholar, presented at the 2008 URCAS on her work with faculty advisor Dr. Champa Sengupta-Gopalan, Plant and Environmental Sciences, "Analysis of Transcript Abundance and Amino Acid Levels in Nitrogen-Deficient and Nitrogen-Sufficient Alfalfa."

Jeni Petersen, an ADVANCE, who worked with Faculty Advisor Shanna Ivey, Animal and Range Sciences (a recipient of ADVANCE start-up funds), presented at URCAS: "Extract from *Larrea* Influences Rumen Fermentation."

Arely Torres's ADVANCE Undergraduate Research Scholarship allowed her to work over the summer as a member of an NMSU water-purification student team. Her team was one of 42 funded by the U.S. Environmental Protection Agency to participate in the People, Prosperity and the Planet National Student Design Competition. Their project, Drinking Water Purification for USA-Mexico Border Region, was awarded \$10,000. Her ADVANCE advisors were Dr. Martha Mitchell, Academic Department Head of Chemical Engineering, and Dr. Shuguang Deng, Chemical Engineering associate professor and head of the research team. In 2008, Ms. Torres was honored by the Center for International Programs as an outstanding International Student and



Engineering Honors Student. Ms. Torres, of Chihuahua, Mexico, was a chemical engineering major with a 4.0 GPA who was on the National Dean's List and received the Rotary Youth Leadership Award. She also received the AIChE Minority Affairs Committee Scholarship, the AIChE Donald F. and Mildred Topp Othmer National Scholarship and the Dr. Edward Groth Jr. Endowed Memorial Scholarship. An actively involved student, Torres is a member of the Society of Hispanic Professional Engineers as well as Omega Chi Epsilon, a chemical engineering honor society. She served as Engineering Council Vice-President of Affairs and Student President of AIChE. Torres will pursue graduate studies at the University of Kansas, where she has been accepted into the doctoral program and will specialize in catalysis.

Kali Lambeth, a past ADVANCE Undergraduate Research Scholarship recipient, now holds an NSF-REU research fellowship and is a Masters student in the laboratory of Dr. Kathy Hanley, her ADVANCE advisor who is a recipient of ADVANCE start-up funds.

Opportunities for Training and Development

ADVANCE Program Staff

The PI/PD was selected to participate in the LEAD²¹ program, Leadership Development for the 21st Century: Linking Research, Academics and Extension. LEAD²¹ is a nine-month development process with three multi-day sessions requiring pre-reading and preparation activities, designed to meet the future needs for leadership development of faculty, specialists, department heads, etc. in land grant universities' colleges of agricultural, environmental, and human sciences and USDA/CSREES.

The PI/PD was selected as a recipient of the 2007 YWCA Reach Award for Education, Post-Secondary.

The Associate Director attended a meeting with Len Malry, the executive director of workforce education of the Higher Education Department of the state of New Mexico, to discuss involving industry in the pipeline to the professoriate.

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.

Dr. Ricardo Jacquez, Professor of Civil Engineering, is a member of the ADVANCE Committee on the Status of Women and mentor in the ADVANCE mentoring program. As director of the Alliance for Minority Participation at NMSU, he has proven to be a staunch ally of ADVANCE. In 2007 he received the Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring.

ADVANCE start-up fund recipient and mentee in the mentoring program, Dr. Paola Bandini, Assistant Professor of Civil Engineering, received the NMSU Patricia Christmore Teaching Award for setting the standard in the areas of teaching, mentoring and advising for her college.

Two other participants in the ADVANCE mentoring program were honored, who were also recipients of ADVANCE research awards: Dr. Martha Desmond of the Department of Fishery and Wildlife Sciences, was recognized as an E. de la Garza Fellow in the USDA's Hispanic-Serving Institutions National Program. Dr. Elba Serrano, of the Department of Biology, was selected to the Center for Integrated nanotechnologies User JumpStart Program of the Department of Energy Nanoscale Science Research Center.



ADVANCE Co-PI Waded Cruzado-Salas, formerly dean of the College of Arts and Sciences, was appointed Executive Vice President/Provost of NMSU.

Engineering Dean Steven Castillo, another institutional transformation ally of ADVANCE, was appointed by the NSF and National Academy of Engineering to serve on the Committee on Engineering Education.

Diana Quintana, formerly Director of Human Resources, was appointed Assistant to the President and Director of the Office of Ombuds.

Academic Department Head Dave Thompson of Entomology, Plant Pathology and Weed Science attended the 2007 LEAD: Leadership Excellence for Academic Diversity workshop.

ADVANCING Leaders participant Susan Brown, director of the Southern New Mexico SEMAA at NMSU, received the John M. Hairston Jr. Award from NASA's SEMAA office.

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 November, the ADVANCE Program co-sponsored a diversity lecture series presented by Black Programs, featuring Harold Bailey, Executive Director of the New Mexico Office of African-American Affairs, Peggy McIntosh, Director of the Wellesley Centers for Women of Wellesley College, and anti-racist writer and activist Tim Wise.

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 was recruited this year and the program expanded to include all new tenure-track faculty to NMSU, with plans to include college-track STEM faculty in the future.

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>
1/19/07	20	ADVANCING Leaders Luncheon: EVP/Provost Project Action Plan
2/1/07	35	Recruitment Workshop: The Fence (CRLT Players)
2/2/07	39	Department Head Training: The Faculty Meeting (CRLT Players)
2/9/07	20	ADVANCING Leaders Luncheon: Creating the Culture Panel: The Challenge of Leading a Department or Unit



2/10/07	14	Informational Session: New Mexico Network of Women in Science and Engineering
2/15/07	24	Department Head Training (Teaching Academy): Assessing General Ed Programs
2/16/07	25	Department Head Training (Teaching Academy): Developing Meaningful, Manageable, Sustainable Assessment
2/17/07	35	Promotion and Tenure Spring Session: Getting a Head Start for Tenure Review
3/1/07	29	Women's History Month Poster Session: Celebrating NMSU Women in Science and Engineering
3/7/07	37	Mentoring Program/Women's History Month Panel: Constructing the Future – Women Who Build (and Rebuild)
3/9/07	20	ADVANCING Leaders Luncheon: Civility, with Director, Employee Assistance Program Dario Silva
3/13/07	35	Women's History Month Lecture: Women, Healing and Medicinal Plants
3/30-31	10	Alliance for Diversity Training Session: NM Partnerships for Adaptation, Implementation and Dissemination (PAID) – NMSU attendees
4/19/07	n/a	Visiting Professor Program: Mary Jane West-Eberhardt public seminar: "Development and Evolution: A Darwinian Renaissance in Biology"
4/20/07	20	ADVANCING Leaders Luncheon: Budgeting, Bureaucracy and Leadership Panel
4/20/07	33	Visiting Professor Program: Mary Jane West-Eberhardt lunch talk: "Women in Science: A Cross-cultural Perspective"
5/3/07	13	Mentoring Program: Informal talk with visiting scientists Drs. Darleane and Maureane Hoffman, co-hosted with the Department of Chemistry/Biochemistry
5/10/07	20	ADVANCING Leaders Luncheon: Recognition Luncheon with President Martin
5/17-18	8	Department Head Training: PAID Department Head Retreat (NMSU attendees)
8/17/07	20	ADVANCING Leaders Retreat – The Organizational Day (Patricia Hynes) and Covey's Seven Habits of Effective Leadership
8/16/07	20	ADVANCING Leaders Retreat – Covey's Seven Habits of Effective Leadership (continued)



8/24/07	49	ADVANCE Open House
9/7/07	20	ADVANCING Leaders Inaugural Luncheon: Cynda Clary, Provost's Office, and MBI review session
9/14/07	52	Promotion and Tenure Fall Workshop: Provost Q&A period, P&T Timeline, Collegiality, Navigation and Strategies
9/18/07	3	Department Head Training (Teaching Academy): Freewheeling Discussion Series
9/27/08	30	Mentoring Orientation
10/5/07	20	ADVANCING Leaders Luncheon: McKinley Boston, Director of Athletics on Leadership
10/16/07	10	Department Head Training Teleconference: Mentoring Diverse Faculty
10/25/07	6	Department Head Training (Teaching Academy): Freewheeling Discussion Series
11/8/07	5	Department Head Training (Teaching Academy): Freewheeling Discussion Series
11/2/07	20	ADVANCING Leaders Luncheon: Greg Blanch on Leadership Styles
11/8/07	32	Mentoring Luncheon Talk: Peggy McIntosh on White Privilege, Male Privilege
11/30/07	11	Mentoring Program Winter Networking Session
12/7/07	20	ADVANCING Leaders Luncheon: James McKinney on University Advancement

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

Outreach Activities

Miscellaneous Visits and Meetings

Regular meetings with Tara Gray (Director, Teaching Academy), Diana Quintana, Assistant to the President and Director of the Office of Ombuds, Christina Chavez-Kelley (Assistant to the President; Chair of Diversity Committee), Michael Hites (VP ICT), and Vimal Chaitanya (VP Research and Graduate School).

The PI/PPD attended the Los Alamos National Laboratory/NMSU partnership workshop in February to give a progress report on ADVANCE and PAID grants at NMSU.



The PI/PD met with the Bridge to the Doctorate Students to lead a discussion of gender issues typically encountered in the ADVANCE program.

The PI/PD served as a reviewer CREES Land Grant University Review for the Department of Entomology and the Department of Plant Pathology, Physiology and Weed Science at Virginia Tech.

The Associate Director arranged an informational session for the New Mexico Network for Women in Science and Engineering in February to help revitalize the southern chapter of that organization, which will hold an Expanding Your Horizons Conference for young women (grades 6-12) to encourage them, and their parents, teachers and school counselors, to explore careers in STEM.

The Associate Director organized the 2007 Women's History Month, co-sponsored with Women's Studies, "Inventing the Future – Women in Science and Technology." Events included an opening reception and poster session featuring 25 posters presented by ADVANCE award recipients of ADVANCE research and start-up enhancement and their students. Workshops and talks on science and engineering also tapped women scientists and engineers in the ADVANCE community as speakers and facilitators.

Academic Department Head Desh Ranjan of Computer Science, a mentor in the ADVANCE mentoring program who has set up a departmental mentoring program based on ADVANCE Best Practice, met with Lucinda Sanders, CEO of the National Center for Women and Information Technology, to share information.

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
- College of Agriculture's Promotion and Tenure Revision Action Team - 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:

- A meeting of the Alliance for Faculty Diversity committee members formed by the NMSU PAID grant in March in Albuquerque on the campus of UNM. ADVANCE staff and NMSU faculty and administrators presented workshops on mentoring and promotion and tenure.
- Participation of ADVANCE staff and NMSU faculty and administrators as presenters and workshop facilitators in the PAID Department Head Retreat in May.

Sessions Organized/Moderated/Presented at Conferences

Conferences

- D. Tiziana Giorgi, a recipient of ADVANCE start-up enhancement funds, presented at a session on women in mathematics of the annual meeting of the American Mathematical Society: “ADVANCE Program at NMSU: A Formalized Mentoring Program for STEM Faculty.”

Poster Presentations:

- Sterling, T. M., L. M. Frehill, and C. Jeser-Cannavale. 2007. NSF-ADVANCE: Institutional transformation for faculty diversity. ADVANCE PI Meeting.
- Sterling, T.M., P. Hunt, L.M. Frehill, and C. Jeser-Cannavale. 2007. NSF-ADVANCE: Institutional transformation for faculty diversity. NMSU University Research Council Fair – Placed as one of top three posters at the fair.

Distinguished Visiting Professor: In April, the ADVANCE Distinguished Visiting Professors Program supported a visit by Dr. Mary Jane West-Eberhard hosted by Dr. Timothy Wright, Assistant Professor, of Biology. Dr. West-Eberhard is a senior scientist at the Smithsonian Tropical Research Institute. Her work in evolutionary biology led to her election to the National Academy of Sciences and the American Academy of Arts and Sciences. Her ideas on the role of development in evolution are discussed in her 2003 book, *Developmental Plasticity and Evolution*, which was awarded the Hawkins Award from the American Association of Publishers for the best scholarly book of 2003. West-Eberhard’s schedule follows:

Date/Time	Event	Location	Target Group
Wednesday 4/18/07			
10:30 AM -2:00 PM	Meet with Biology 550 seminar class for discussion of Developmental Plasticity and Evolution and lunch	Biology 550 Seminar	Graduate students
2:30-5:00PM	Meetings with Biology faculty, students and staff	Biology Department	Biology faculty, students and staff
Thursday 4/19/07			
12:30-2:00 PM	Slideshow and questions and answer session, “Natural History of Tropical	Elementary	1 st and 3 rd grade students



	Wasps”		
4:00 – 5:00 PM	Public Seminar: “Development and Evolution: a Darwinian Renaissance in Biology”	Hardman 208	General public, NMSU faculty, students and staff
Friday 4/20/07			
12:00-1:30PM	Luncheon talk: “Women in Science: A Cross-cultural Perspective”	Dona Ana Room, Corbett Center	Faculty and students

In addition to Dr. West-Eberhard, the ADVANCE Program arranged an informal meeting/discussion with one of the nation's leading nuclear chemists, Dr. Darleane Hoffman, who was speaking at the Chemistry/Biochemistry Colloquium. Dr. Hoffman and her daughter, the pathologist Dr. Maureane Hoffman, met with female faculty to discuss their careers in science.



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.advance.nmsu.edu/> . ADVANCE program website.

Journal Publication

Amster, P., De Napoli, P. and M.C. Mariani. An H-system for a revolution surface without boundary. *Abstract and Applied Analysis*. 2006.

Amster, P. and M.C. Mariani. A system of coupled pendulii. *Nonlinear Analysis*. Accepted in 2006, v. 64, n. 8, 1647-1653.

Amster, P., Mariani, M.C. and O. Mendez. Solutions of nonlinear elliptic equations in unbounded Lipschitz domains. *Forum Mathematicum*. Volume 19, Issue 1, 1435-5337, 0933-7741, 2007

P. Amster, M.C. Mariani. Oscillating solutions of a nonlinear fourth order ordinary differential Equation. To appear in *Journal of Mathematical Analysis and Applications*. Volume 325, Issue 2, 15 January 2007, Pages 1133-1141.

Amster, P., De Napoli P. and M. C. Mariani. Periodic Solutions for p-Laplacian Like Systems with Delay. *Dynamics of Continuous, Discrete and Impulsive Systems (series A)*. 2006, v. 13, n. 3-4, 311-319.

DeMouche, L., Bathke, D.J. and Doesken, N., "Master Gardeners' Role in Encouraging Water Conservation Using a Rain Gauge Network," *Journal of Extension*. Volume 45, Number 4. 2007

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*. 2006;20:2540.

DeMouche, L., D. Bathke, and N. Doesken, "Master Gardeners Role in Encouraging Water Conservation Using a Rain Gauge Network", *Journal of Extension*, 2007. v. 25, n. 4

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

Eyral, C. and Gasparim, E. Multiplicity of complex hypersurface singularities, Rouché satellites and Zariski's multiplicity conjecture. *C. R. Math. Acad. Sci. Paris* 344, no. 10, 631–634 (2007).

Gasparim, E. and Pedro Ontaneda. *Three applications of instanton numbers*, with P. Ontaneda. *Comm. Math. Phys.* 270 (1), 1–12. 2007

Gehrke, M., H.A. Priestley Canonical extensions of certain algebras with binary operations: an algebraic perspective on duality, with, submitted to *Journal of Pure and Applied Algebra*. V. 209, no. 1, 2007. 269-290.

Gehrke, M., G. Bezhanishvili, R. Mines, and P. Morandi, Profinite and canonical completions of Heyting algebras. *Order: A Journal on the Theory of Order Sets and Its Applications*, v. 23, n. 2-3. 2006



Giorgi, T. and H. Jadallah. "The onset of superconductivity at a superconducting/normal interface." *European Journal of Applied Mathematics*. 2006, VOL 17; PART 6, pages 633-650

Guerrero-Ferreira, R.C. and M.K. Nishiguchi. "Identification of light organ symbionts from the genera *Uroteuthis*, *Loliolus*, and *Euprymna*." *Cladistics*. 2007. v. 23 n. 5, 497-506

Hanley, K.A., J.T. Nelson, E.E. Schirtzinger, S.S. Whitehead, C.T. Hanson. "Superior Infectivity for mosquito vectors contributes to competitive displacement among strains of dengue virus." *BMC Ecology*. 2008, 8:1.

Jones, B.W., A. Maruyama, C.C. Ouverney, and M.K. Nishiguchi. "Spatial and temporal distribution of the Vibrionaceae in coastal waters of Hawaii, Australia, and France." *Microbiol. Ecol.* 2007. v. 54, n. 2, 314-323(10)

Kothandam Krishnamoorthy and Cynthia G. Zoski, "Fabrication of 3D Gold Nano Electrode Ensembles by Chemical Etching", *Analytical Chemistry*, 77 (2005) 5068-5071.

McMillan, N., McManus, Harmon, DeLucia, and Wiziolek, Laser-Induced Breakdown Spectroscopy Analysis of Complex Silicate Minerals – Beryl. *Journal of Analytical Biochemistry and Chemistry*, v. 385, N. 2. 2006

Mariani, M.C., 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*, v. 359, n. 1. 2006. 576-588

Nianjun Yang and Cynthia G. Zoski*, "Polymer Films on Electrodes: Investigation of Ion Transport at Poly(3,4-ethylenedioxythiophene) films by Scanning Electrochemical Microscopy", *Langmuir*, Electrochemistry Edition. 22 (25), 10338 -10347, 2006

Cynthia G. Zoski*, Nianjun Yang, Peixin He, Luca Berdondini, and Milena Koudelka-Hep, "Addressable Nanoelectrode Membrane Arrays: Fabrication and Steady State Behavior", *Analytical Chemistry*. 2007. 79 (4), 1474 -1484.

Conference Proceedings

Frehill, Lisa M., Cecily Jeser-Cannavale, Lauren Ketcham. "The Impact of a Mentoring Program on Women and Men in Science and Engineering." *Proceedings of the 2007 WEPAN Conference*.

Book

Cynthia G. Zoski, Editor, *Handbook of Electrochemistry*, Elsevier, Amsterdam. 2007



Book Chapter

- Frehill, Lisa, Cecily Jeser-Cannavale, and Janet Malley. "Measuring the Status of Women Towards Cross-Institutional Analysis to Understand Institutional Transformation" in *Transforming Science and Engineering: Advancing Academic Women*, edited by Abigail Stewart, Danielle Lavaque-Manty and Janet Malley, Ann Arbor, University of Michigan Press (2007).

Articles in Preparation

Hanley, K.A., Blaney, J.E., Jr., Murphy, B.R., Whitehead, S.S. "Chimeric flaviviruses provide insight into the genetic determinants of virus specificity and infectivity for their arthropod vectors." Submitted to *Journal of Vector-Borne and Zoonotic Diseases*.

Blaney, J.E., Jr., N. Sathe, C.Y. Hanson, L. Goddard, T. A. Romero, K.A. Hanley, B.R. Murphy, S.S. Whitehead. "Dengue virus type 3 (DEN3) vaccine candidates generated by introduction of deletions in the 3' untranslated region (UTR) or exchange of the DEN3 3' UTR with that of DEN4." For submission to *Journal of Virology*.



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.

Contributions to Other Disciplines

Over the course of the grant, ADVANCE funds have assisted 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 have been essential to scholar's professional development over the life of the grant.

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.

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 Salamanca-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 seven 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 ADVANCE institutions have been essential in making information about institutional change easily accessible to a wide audience. The PI, Research Analyst, and Research Analyst 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

