

**ADVANCE**  
**Partnerships for Adaptation, Implementation, and Dissemination**

**Annual Report**  
January-November, 2007

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Alejandro Aceves, Co-PI  
Christina B. Behr-Andres, Co-PI (through January, 2007)  
Michael Fehler, Acting Co-PI (January-May, 2007)  
James E. Bossert, Co-PI (as of May, 2007)  
Mary O'Connell, Co-PI (through May, 2007)  
Tara Gray, Co-PI (as of May, 2007)  
Tanja Pietraß, Co-PI

Pamela J. Hunt, Program Associate Director  
Cathilia M. Flores, Program Coordinator (as of September, 2007)  
Abby Javurek-Humig, Research Analyst (through August, 2007)

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**Table of Contents**

Participants..... 3  
    Individuals..... 3  
    Organizations..... 6  
    Collaborators..... 6  
Activities..... 7  
    Major research and education activities..... 7  
    Major findings..... 9  
    Opportunities for training and development..... 12  
    Outreach activities..... 12  
Publications..... 13  
    Non-periodical..... 13  
    Website..... 13  
Contributions..... 13  
    Principal disciplines..... 13  
    Development of human resources in STEM..... 14  
Budget..... 15

## **Participants**

### **Individuals who have worked on the project**

Tracy M. Sterling, Principal Investigator  
Program Director  
Professor, Entomology, Plant Pathology, and Weed Science, NMSU

Tanja Pietraß, CoPrincipal Investigator  
Professor, Chemistry, NMT

Alejandro B. Aceves, CoPrincipal Investigator  
Department Chair, Mathematics and Statistics, UNM

Christina B. Behr-Andres, CoPrincipal Investigator  
Through January, 2007  
Former Deputy Division Leader, Earth and Environmental Sciences, LANL

Michael Fehler, Acting CoPrincipal Investigator  
January-May, 2007  
Former Deputy Division Leader, Earth and Environmental Sciences, LANL

James E. Bossert, Incoming CoPrincipal Investigator  
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Acting Deputy Division Leader, Earth and Environmental Sciences, LANL

Mary O'Connell, CoPrincipal Investigator  
January-May, 2007  
Professor, Agronomy and Horticulture, NMSU

Tara Gray, CoPrincipal Investigator  
May, 2007-present  
Director, Teaching Academy  
Associate professor, Criminal Justice, NMSU

Pamela J. Hunt, Senior personnel  
Associate Director

Cathilia M. Flores, Senior personnel  
Program Coordinator as of September, 2007

Abby Javurek-Humig, Technician, programmer  
Research Analyst through August, 2007

Lisa Frehill, Outside program evaluator  
Director, Commission on Professionals in Science and Technology

Anne D'Mura, Undergraduate student  
Office assistant

Cheryl Schroeder, Undergraduate student  
Office assistant

Susan Dunston, Member, NMT AFD committee  
Director, Women's Resource Center  
Associate Professor, English

Jean Eilek, Member, NMT AFD committee  
Professor, Astrophysics

Dave Johnson, Member, NMT AFD committee  
Dean, Graduate Studies  
Professor, Geology

Ricardo Maestas, Member, NMT AFD committee  
Vice President, University and Student Relations

Fred Phillips, Member, NMT AFD committee  
Professor, Hydrology

Claudia Wilson, Member, NMT AFD committee  
Assistant Professor, Environmental Engineering

Scott Zeman, Member, NMT AFD committee  
Associate Vice President, Academic Affairs  
Director, Center for Innovative Teaching and Learning  
Associate Professor, History

Julia Coonrod, Member, UNM AFD committee  
Associate Professor, Civil Engineering

Julia Fulghum, Member, UNM AFD committee  
Department Chair, Chemical and Nuclear Engineering

Gary Harrison, Member, UNM AFD committee  
Professor, English Language and Literature

Mary Anne Nelson, Member, UNM AFD committee  
Professor, Molecular, Cellular, and Developmental Biology

Mousumi Roy, Member, UNM AFD committee  
Assistant Professor, Earth, and Planetary Sciences

Julianna Fessenden, Member, LANL-EES AFD committee  
Coordinator of PAID events and programs at LANL  
Technical Staff Member, Geology, Geochemistry, and Hydrology

Wendee Brunish, Member, LANL-EES AFD committee  
Group Leader, Geophysics

Beverly Crawford, Member, LANL-EES AFD committee  
Team leader

Sebastian Darteville, Member, LANL-EES AFD committee  
Technical Staff Member, Geophysics

Rodman Linn, Member, LANL-EES AFD committee  
Deputy Group Leader, Atmospheric, Climate, and Environmental Dynamics

Andrea Maestas, Member, LANL-EES AFD committee  
Support Staff, Climate Research Facility

Cynthia Mayan, Member, LANL-EES AFD committee  
Deputy Division Leader, Chemistry

Emily Schultz-Fellenz, Member, LANL-EES AFD committee  
Technician, Environmental and Geological Risk

Stephen Kanim, Chair, NMSU AFD committee  
Associate Professor, Physics  
Facilitator at promotion & tenure and mentoring workshops

Sue Forster-Cox, Member, NMSU AFD committee  
Assistant Professor, Health Sciences

Ereny Hadjigeorgalis, Member, NMSU AFD committee  
Assistant Professor, Agricultural Economics and Business

N. Khandan, Member, NMSU AFD committee  
Professor, Civil and Geological Engineering

Patrick Morandi, Member, NMSU AFD committee  
Academic Department Head, Mathematics Sciences

Inna Pivkina, Member, NMSU AFD committee  
Assistant Professor, Computer Science

William Quintana, Member, NMSU AFD committee  
Associate Professor, Chemistry and Biochemistry

April Ulery, Member, NMSU AFD committee  
Associate Professor, Agronomy and Horticulture  
Presenter at Orientation retreat

Rene Walterbos, Member, NMSU AFD committee  
Professor, Astronomy

### **Other organizations involved**

New Mexico Institute of Mining and Technology

University of New Mexico

Los Alamos National Laboratory

Women's resource Center – NMT

Center for Innovative Teaching and Learning - NMT

Title V – UNM

Teaching Academy – NMSU

### **Other collaborators and contacts**

Luis Vazquez, Associate Dean, Graduate School, NMSU  
Presenter at Orientation and Department Head retreats

Walter Zakahi, Associate Dean, College of Arts and Sciences, NMSU  
Presenter at Orientation and Department Head retreats

Dan Howard, Associate Dean, College of Arts and Sciences, NMSU  
Presenter at Department Head retreat

Tom Burton, Department Head, Mechanical and Aeronautical Engineering, NMSU  
Presenter at Department Head retreat

Sonya Cooper, Department Head, Engineering Technology and Survey Engineering,  
NMSU  
Presenter at Orientation and Department Head retreats

Patricia Witherspoon, Department Chair, Communications, and Director, Sam Donaldson  
Center for Communication Studies, University of Texas-El Paso  
Presenter at Department Head retreat

Edgar Conley, Associate Professor, Mechanical Engineering, NMSU  
Facilitated workshop at Orientation retreat

Robert Czerniak, Associate Dean of Research, College of Arts and Sciences, NMSU  
Facilitated workshop at Orientation retreat

Rudi Schoenmackers, Associate Dean and Research Director, Engineering Research  
Center, College of Engineering, NMSU  
Facilitated workshop at Orientation retreat

Gary Smith, Deputy Provost, Academic Affairs, UNM  
Collaborating with UNM Co-PI on program initiatives

Richard Holder, Deputy Provost, Academic Affairs, UNM  
Collaborating with UNM Co-PI on program initiatives

Rita Martinez-Purson, Vice President, Office of Institutional Diversity, UNM  
Collaborating with UNM Co-PI on program initiatives  
Will participate in pipeline strategy session in December

Mark Ondrias, Associate Dean, College of Arts and Sciences, UNM  
Will participate in pipeline strategy session in December

Jeniffer Gomez-Chavez, Director, Title V Program, UNM  
Will participate in pipeline strategy session in December

Mary Ann With, Leader, Postdoctoral Program, LANL  
Will participate in pipeline strategy session in December

Carol Potenza, Affiliated Faculty, Jornada Exper Range Headquarters, NMSU  
Will participate in pipeline strategy session in December

## **Activities and Findings**

### **Major research and education activities**

This year, foundations were laid at and among partner institutions to begin the process of institutional transformation toward a more diverse academe and research environment in New Mexico. Grassroots committees were formed at each institution; an orientation retreat for all partners was conducted to kick off efforts; partners have begun developing mentoring programs; promotion and tenure workshops continue to be conducted at NMSU for later adaptation by partner institutions; a department head (DH) leadership retreat was held to begin institutional systemic and cultural change at each institution; and an assessment of the pipeline in New Mexico was conducted.

## **Committees**

At the beginning of the year, Alliance for Faculty Diversity (AFD) committees were established with broad memberships at each partner institution. Each includes the co-PI at that institution and faculty or staff from participating STEM departments. They also include and/or are working with upper-level administration as well as collaborating organizations and programs to bolster both top-down and grassroots support for programs and efforts they are in the process of establishing.

## **Orientation**

An orientation retreat was held in Albuquerque, NM in March of this year and hosted by the University New Mexico (UNM) AFD to give co-PIs and AFDs an overview of the PAID grant as well as an introduction to best practices established at New Mexico State University (NMSU) during the ADVANCE-IT grant. Topics covered were mentoring, promotion and tenure, operations, and assessment. Twenty-five PAID participants from all partner institutions attended.

## **Mentoring**

Currently, mentoring programs are being established at each partner institution utilizing best practices developed at NMSU and tailored to each institution's culture, structure, and needs. In addition to the introductory workshop at the orientation retreat, institution-specific workshops are being planned for early next year in order to more thoroughly address the needs of each institution and their unique culture as described below.

### *NMT*

In August, the Vice President of Student & University Relations at New Mexico Institute of Mining and Technology (NMT) held a faculty luncheon, which 36 faculty members attended. Attendees were introduced to the mentoring approach at NMSU. As a result, they currently have 11 mentoring pairs (junior faculty paired with senior faculty) from all departments including Humanities since it is a small close-knit institution.

### *UNM*

To develop their mentoring program, the co-PI and AFD at UNM are utilizing a report by a Faculty Senate subcommittee on mentoring conducted prior to the grant. Because UNM is the largest of the institutions with somewhat independent colleges and departments, they are leaning towards a mixed model tailoring programs to individual departments based on their research styles. They would also like to incorporate cross-institutional mentoring eventually.

### *LANL-EES*

PAID participants from Los Alamos National Laboratory's Earth and Environmental Science Division (LANL-EES) and its six groups are developing a team-mentoring program focused on postdoctoral fellows. They plan to have 31 postdocs in teams of 3-5 each mentored by 2-3 senior staff selected by interest and expertise. Each team will emphasize one or a combination of four identified core issues: 1) conversion to research/technical staff at LANL; 2) grant writing; 3) promoting their own science; and 4) networking and surviving LANL. These issues were discovered in responses by



postdocs to a cursory email survey from the AFD chair. The group is also including the Chemistry and Life Sciences Divisions and receiving input from them. It is planned to later expand the program to early-career Technical Staff Members (TSMs).

### *NMSU*

Mentoring efforts at NMSU continue to grow. Currently, 96 faculty members (50% each male and female) from 19 STEM and 11 social sciences departments participate in the program, which pairs all new faculty with a mentor outside their department, but within their college. There are 56 mentoring pairs and 3 mentoring teams with some mentors also participating as mentees or members of teams. Pairs consist of junior and senior faculty or senior faculty and administrators. A mentoring orientation was held for continuing and new participants in September. This included a review of mentor/mentee roles as well as a mentor training component. Thirty faculty attended. An informal mixer for mentoring participants is scheduled for late November and an end-of-the-year event will occur next year in May.

### **Promotion and Tenure**

Two promotion and tenure faculty sessions per year, which are facilitated by members of NMSU's AFD, help to increase participation by, and promotion and retention of all faculty in 6 colleges as well as STEM at NMSU. On February 17, the NMSU AFD co-sponsored with the Office of the Provost the working session for faculty to prepare for spring review, which 35 faculty attended. On September 14, they co-sponsored with the Hispanic Caucus and Office of the Provost a faculty workshop entitled "Preparing for Promotion from Assistant to Associate Professor." Fifty-two faculty attended. Partner institutions in the next phase of the grant will adapt this program component.

### **DH retreat**

In May, a 2-day department head leadership retreat was held at Sevilleta Wildlife Refuge in central NM. Twenty-one department heads and administrators from all institutions attended. Workshops covered topics such as candidate searches, start-up packages, dual-career hires, mentoring, conflict management, department evaluation, collegiality, and departmental cohesion.

### **Pipeline**

In addition to institution-specific activities, interviews have been conducted by the outside evaluator with co-PIs, AFD members, postdocs, administrators, and leaders of organizations at each institution in order to assess the current state of the STEM pipeline in New Mexico. Key players have been identified and are being invited to a statewide strategy session slated for December 5 and hosted by NMT. A cross-institution plan of action will result from this meeting.

### **Major findings**

Formation of grassroots AFD committees at each institution has brought together top administrators and faculty/staff, establishing a basis for broad, top-down support for program objectives and development of mentoring programs. The orientation gave

partners the initial tools to begin organizing their internal networks and establishing programs. Subsequent evaluation surveys gave program staff indications of areas of needed assistance and further training. The department head retreat was evaluated favorably by participants and provided for intra- and cross-institutional networking. The pipeline assessment indicated postdocs in NM work within systems characteristically similar to those nationwide, which are in need of mentoring and professional development programs.

### **Committees and Mentoring**

#### *NMT*

At NMT, the Associate Vice President of Academic Affairs, the Dean of graduate Studies, and the Vice President of Student & University Relations are members of the 8-member AFD committee. Also on the committee are faculty members representing the departments of Chemistry, Astrophysics, Hydrology, and Environmental Engineering, as well as the Director of the Women's Resource Center. In August, the VP of Student & University Relations and the NMT co-PI orchestrated a large luncheon to introduce faculty to the mentoring program, which has resulted in approximately 22 faculty participants so far. The NMT AFD meets monthly and will be hosting a statewide strategy meeting in December to plan for pipeline efforts. Attendees will be faculty and administrative representatives of all PAID partner institutions, postdocs, and organizations and programs already focusing efforts on improving the pipeline.

#### *UNM*

The AFD committee at UNM includes two departments heads and faculty from 6 departments within the colleges of Engineering and Arts & Sciences. Prior to the grant, one of the members spearheaded a Faculty Senate investigation to identify and assess the effectiveness of mentoring policies for junior faculty throughout all academic units of the University. Based on those results as well as further discussions, the committee has identified an independent culture among departments and consequently determined to develop a mentoring program utilizing mixed methods specific to each department.

In addition, the UNM co-PI is currently working with the institution's vice president of the newly established Office for Institutional Diversity in order to bring a broader presence of the AFD to the University as well as synergy among the departments participating in mentoring. Other administrative representatives with which the AFD is partnering in order to garner greater and broader support for the mentoring program include the Deputy Provost for Academic Affairs, the Special Assistant to the provost for Faculty Development, and the Associate Dean of Arts & Sciences.

#### *LANL-EES*

LANL-EES division has organized a nine-member AFD committee including the EES acting division leader as well as division, group, and team leaders and research staff from the Division of Chemistry, and six EES groups. As a result of an email survey, the committee identified several core professional development issues postdocs would like to have addressed through mentoring. Thirty-one postdocs are set to participate and about eight outstanding senior research staff specializing in one or more of the core topics are

being identified to mentor the teams. Arrangements are being made to have a team-mentoring expert from Cornell conduct a workshop to launch their program this January.

### *NMSU*

The NMSU AFD has membership representing eight departments and the colleges of Agriculture, Engineering, Arts & Sciences, and Health Sciences. Its members have been facilitating mentoring and promotion and tenure workshops for faculty from 30 departments and 5 colleges. The mentoring program has maintained its high participation rate and promotion and tenure workshops have sparked informal mentoring and improved communication between junior faculty and administrators.

### **Orientation**

Twenty-five PAID participants attended the orientation retreat. Evaluations of the offerings at the orientation indicated that the majority of participants felt the information disseminated was sufficient to begin developing and establishing programs at their institutions. This served also as an initial opportunity for partners to network with others around the state.

### **Promotion and Tenure**

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### **DH retreat**

Twenty-one department heads and administrators from PAID institutions attended the retreat. While at least two-thirds of participants in the Department Head Leadership retreat thought any one of the workshops provided was new and helpful to them, the greater majority indicated in written comments that the best aspect of the retreat was the opportunity to network with faculty and department heads from other institutions. It is becoming evident that the PAID program will be key in providing more networking opportunities to provide greater cohesion among researchers throughout the state.

The department chairs from NMT who participated in the DH retreat are a prime example of the impact of networking. After the retreat, 6 of them organized an informal meeting to discuss challenges they face and develop solutions. This group is now an informal Chairs Committee and will meet regularly. We hope to expand his model to all institutions.

### **Pipeline**

The outside evaluator's interviews with postdoctoral fellows, administrators, and other groups involved in improving the pipeline indicate that postdocs in NM endure much the

same environment as others around the country. Classification clarity, professional development support, benefits, transition to professoriate/staff assistance are some of the needs identified. As a result, the program determined to establish a statewide support network for postdocs and to develop a plan in collaboration with representatives from partner institutions and organizations focused on the pipeline. A statewide strategy session will be held at NMT in Socorro on December 5 to create a plan.

### **Opportunities for training and development provided**

An orientation retreat was held in Albuquerque, NM in March of this year and hosted by the University New Mexico (UNM) AFD to give co-PIs and AFDs an overview of the PAID grant as well as an introduction to best practices established at New Mexico State University (NMSU) during the ADVANCE-IT grant. Topics covered were mentoring, promotion and tenure, operations, and assessment. Twenty-five PAID participants attended the orientation retreat. Evaluations of the offerings at the orientation indicated that the majority of participants felt the information disseminated was sufficient to begin developing and establishing programs at their institutions. This served also as an initial opportunity for partners to network with others around the state.

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At NMSU, mentoring orientation was held this fall for continuing and new participants. This included a review of mentor/mentee roles as well as a mentor training component. An informal mixer for mentoring participants is scheduled for late November and an end-of-the-year event will occur next year in May.

In May, a 2-day department head leadership retreat was held at Sevilleta Wildlife Refuge in central NM. Twenty-one department heads and administrators in STEM from each institution attended. Workshops covered topics such as candidate searches, start-up packages, dual-career hires, mentoring, conflict management, department evaluation, collegiality, and departmental cohesion.

### **Outreach activities**

In July, the co-PI and department head of Mathematics at UNM represented PAID as a participant in the workshop, “Diversity in Mathematics and Scientific Community” sponsored by the Banff International Research Station in Canada. The focus of the session was women faculty in Mathematics.

Early in November, the NMT, UNM, and NMSU AFDs co-sponsored a workshop on teaching to improve retention of diverse students in STEM. Craig Nelson, a Biology

professor at the University of Indiana-Bloomington, presented “Responding to Diversity: Three Pedagogical Changes That Improve Retention and Achievement” at each institution. Over one hundred faculty from all institutions participated in the workshop.

A poster titled “NSF ADVANCE-PAID: Partnering for Diversity. New Mexico Institutions of Higher Learning and Research,” was presented at the NMSU University Research Conference in October. It describes the mission and objectives of the PAID grant.

At a reception the University held for members of the Legislative Education Study Committee in October, the poster, “Transforming Faculty for Diversity (TFFD) in New Mexico: Hiring Diverse, High-Demand Faculty in STEM at NMSU, NMT, and UNM,” was presented. It details a joint legislative initiative between the three universities for funding for start-up packages that will be proposed at the spring 2008 legislature.

## **Publications and Products**

### **Non-periodical, one-time publications**

A poster titled “NSF ADVANCE-PAID: Partnering for Diversity. New Mexico Institutions of Higher Learning and Research,” was presented at the NMSU University Research Conference in October. It describes the mission and objectives of the PAID grant.

The poster, “Transforming Faculty for Diversity (TFFD) in New Mexico: Hiring Diverse, High-Demand Faculty in STEM at NMSU, NMT, and UNM,” details a joint legislative initiative between the three universities for funding for start-up packages that will be proposed at the spring legislature. It was presented at a reception the University held for members of the Legislative Education Study Committee in October as well.

### **Web site**

The official website of the ADVANCE-PAID program, [www.advance.nmsu.edu/paid/](http://www.advance.nmsu.edu/paid/), details its mission, activities, and soon, its outcomes. It will be expanded in the coming year to include linked sites specific to each partner institution and their efforts.

## **Contributions**

### **Principal disciplines of the project**

The principal disciplines of this grant include all the STEM disciplines represented within three NM institutions of higher learning and one national research lab in the state. Participation in programs, professional development sessions, and strategy development to improve the STEM pipeline by a broad range of faculty and staff is already resulting in

the development of collaborative and supportive networks within and between each institution. Additionally, because participants and collaborators represent all professional levels ranging from postdoctoral fellow through Vice Provost, the program is beginning to garner both administrative as well as grassroots buy-in throughout the state. This is the network composition necessary to establish sustainable change.

### **Development of human resources in STEM**

Mentoring programs at each institution in conjunction with promotion and tenure and department head leadership workshops conducted by the NMSU ADVANCE program serve to develop, promote, and retain a diverse STEM research workforce.

The joint legislative initiative, Transforming Faculty for Diversity (TFFD), requesting funds for start-up packages for high-demand and diverse STEM faculty at NMSU, NMT, and UNM will serve to increase a diverse STEM research workforce in New Mexico.

At UNM a number of new female faculty hires occurred this year – two tenure track and one lecturer. In addition, the co-PI there served on the search committee for the position of Dean of Arts and Sciences, which ultimately hired a female biologist and neuroscientist who started in August.