



Annual Report for the National Science Foundation ADVANCE Project

Academic Careers in Engineering & Science (ACES)  
Case Western Reserve University

Year 3: September 1, 2005 – August 31, 2006

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## **Case Western Reserve University Context in AY 2005/2006**

This past academic year has been a period of major transitions and challenges for Case Western Reserve University. In February, faculty from the College of Arts & Sciences voted 131/44 in favor of no confidence in the leadership of University President Edward Hundert. Subsequently, he abruptly resigned and has been replaced as of June 1, 2006 by Interim President Gregory Eastwood. The no-confidence vote was precipitated in part because of chronic, pervasive and increasing budgetary difficulties experienced by the four major university schools and central administration which led to two separate budgetary rescissions resulting in significant staff layoffs. Although faculty salaries were not cut, raises were minimal if they occurred, and many program initiatives were curtailed. In effect, during much of the year, the attention of the board of trustees, administration, and faculty of the university was preoccupied with budgetary and fiscal management issues of immediate concern to the campus.

In June 2006, College of Arts & Sciences' Dean, Mark Turner, one of the Advance deans, resigned and was replaced by Interim Dean Cyrus Taylor, Chair of the Physics Department and member of the ACES Research and Evaluation Team (the Resource Equity Committee). Although the preceding period was marked by low faculty and staff morale, it is generally believed that the changes in leadership and the budgetary recalibrations undertaken will lead to long-term growth and stability for the university, as evidenced by recent Moody's ratings. In addition to the recent inclusion of Dr. Taylor, who has been integrally involved with the ACES program from its inception, into the university's senior leadership team, Dr. Hunter Peckham, a member of the ACES core group, has been included as a member of the search committee for the new president. Both of these appointments bode well for the advancement of women at Case Western Reserve University. The ACES team has also used this period of transition to focus on the development of new university policies that support equity and a positive climate, as well as to intensify our efforts to engage faculty in positive initiatives related to the ADVANCE contract.

### **Section I: Summary of Project Activities**

#### **A. Participants**

Dr. Lynn Singer, ACES principal investigator, is responsible for the oversight of the ACES program. Dr. Singer facilitates departmental initiatives and leads the Provost Leadership Retreat and other ACES events. She presents the ACES program to the Case Western Reserve University leadership and community. Dr. Singer will continue 20% effort for Year 4.

Dr. Mary Barkley, co-PI, facilitates the ACES project activities in the College of Arts & Sciences, the School of Medicine, and in the S&E departments. She is responsible for oversight of the ACES office, the ADVANCE Distinguished Lectureships, the ADVANCE Opportunity Grants, and the Departmental Initiative Grants. Dr. Barkley heads the ACES Team comprised of scientists from different disciplines who serve as an internal advisory board and review proposals and provide recommendations for ACES programs. In addition, Dr. Barkley is responsible for the Fisk Faculty Exchange Program, ACES Minority Summer Undergraduate Research Program, and the partner hiring network which all began in 2004. Dr. Barkley will continue 30% effort for Year 4.

Dr. Diana Bilimoria, co-PI, facilitates ACES project activities in the School of Management and in the S&E departments. She is responsible for oversight of the research and evaluation effort of the ACES program including the baseline data collection, climate survey, chairs survey, and the

space and salary analysis. In addition, Dr. Bilimoria provides oversight and evaluation for the following interventions: leadership coaching for deans and chairs, career-based coaching for women faculty, and mentoring committees for women faculty. Dr. Bilimoria provides resources, assessment tools, workshops, and consultations to faculty, chairs, and departments. Dr. Bilimoria supervises two graduate students: one who is undertaking her doctoral dissertation on an ADVANCE related topic and one who assists with the Mentoring Program. Dr. Bilimoria will continue 30% effort for Year 4.

Dr. Donald Feke, co-PI, is responsible for project activities in the School of Engineering and in the S&E departments. Dr. Feke will continue 5% effort for Year 4.

Dr. P. Hunter Peckham, professor in the Department of Biomedical Engineering, is committed to the ACES project and participates in ACES meetings, assists with project activities in the School of Engineering, and collaborates with ACES senior personnel. We have not requested co-PI status or salary support for Dr. Peckham due to his other commitments.

Dr. Susan Perry, Senior Research Associate, is responsible for the qualitative and quantitative data collection (administering the baseline climate survey, conducting focus groups and interviews). She is responsible for correcting and verifying data, writing of the climate survey reports, creating faculty databases, and collecting the evaluation indicators needed for the year-end report. She also assists in the design, collection, and administration for the data needed for intervention activities such as the coaching and mentoring evaluations. Dr. Perry codes survey responses and enters survey data into the database. She researches and consolidates multiple sources of data, records and prepares the data for analysis, supervises the transcription of focus group tapes, and creates codebooks. Dr. Perry allocates 100% effort to the ACES project.

Dr. Xiangfen Liang, Research Associate, is responsible for assisting the ACES Research and Evaluation Team and its Senior Research Associate in the conduct, preparation, collection, and analysis of quantitative and qualitative data, specific program evaluation activities, and the preparation of progress reports and presentations. She performs complex quantitative and qualitative analytic procedures, and assists Dr. Perry with data collection. Dr. Liang allocates 100% effort to the ACES project.

Beth McGee, Faculty Diversity Officer, is responsible for issues concerning Faculty Diversity and for oversight and implementation of entrance and exit interviews and search committee support. She meets with Lynn Singer, ACES PI, and John Anderson, Provost, to discuss implementing these initiatives. Beth allocates 10% effort as Faculty Diversity Officer to the ACES project without cost to NSF.

In the past year, resources established by ACES have enhanced diversity initiatives at Case, including:

- A faculty diversity website was created with resources for search committees and administrative assistants who generate Affirmative Action files for approval.
- The School of Medicine has established an ad hoc committee to review faculty complaints due to increased salary equity requests and climate concerns expressed to the Faculty Diversity Officer and the Office of the Provost.
- Dean Robert Savinell of the School of Engineering has agreed to make diversity initiatives an element of the yearly review of all engineering department chairs.

ACES has also promoted policy change in the area of family friendly policies:

- The newly established Case Partner Hiring Policy has been used to hire/retain three women faculty members, two of whom are in STEM departments.
- Plans are underway for the building of a new childcare center on the South side of the Case Campus.
- Evaluation of existing women's lounges is underway for the planning of more convenient lactation centers on campus.
- A Consensual Relationships policy has been developed and passed by the Case Faculty Senate to promote respectful and ethical professional relationships for all faculty, staff and students.

Amanda Shaffer, Faculty Diversity Specialist, provides training for search committees and faculty recruitment skills. She develops web-based and other tools to assist search committees in diversifying their applicant pools. She is responsible for faculty exit surveys and collects qualitative and quantitative data on recruitment and retention activities and outcomes. Amanda prepares presentations to deliver at faculty meetings, conferences, and workshops. The co-PIs, Faculty Diversity Officer, and department chairs work with Amanda to develop departmental and institutional programs. Amanda allocates 100% effort to the ACES project. This position has been institutionalized with funding by Case beginning in Year 3.

Dr. Dorothy Miller, Director of the Flora Stone Mather Center for Women, provides networking events at the Center for Women and develops training modules for undergraduate and graduate students to eliminate gender bias toward women faculty. She also supervises a graduate student, who assists with the student training. Dr. Miller will continue 10% effort for Year 4.

### **Graduate Students**

In Year 3, three graduate students assisted the ACES Program with research, data collection, evaluation, and mentoring. Continued funding for a graduate student assisting with student training will be provided by Case beginning in Year 3.

## **B. Project management system and infrastructure**

### **ACES Core Group**

Project Coordinator, Shelley White, coordinates all activities under the ACES program. In addition to providing administrative support of printing, copying, library searches, and web research, she also coordinates all meetings, works on presentations, promotional materials, project website, and publicizes programs and events as well as the newsletter. She drafts correspondence and reports on project activities. She is also responsible for managing the NSF ADVANCE budget and Opportunity Grant budgets and for providing event planning for the Distinguished Lectureships program, Minority Summer Undergraduate Research Program, and the Fisk Faculty Exchange program.

The ACES co-PIs meet weekly with Beth McGee, Amanda Shaffer, Dr. Miller, Dr. Perry, Dr. Liang, and Shelley White to discuss current initiatives, assess progress, and plan future activities. The monthly ACES Steering committee meetings were discontinued in Year 3 due to low participation of the Deans of the four participating schools (College of Arts & Sciences, Case School of Engineering, Weatherhead School of Management, and School of Medicine). Instead, individual Deans and Department Chairs occasionally attend the co-PI meetings to guide the direction of the ACES program, and make recommendations on implementing ACES initiatives.

### **Partners**

The ACES Team comprises the co-PIs and 10 faculty members from various disciplines. The Team serves as an internal advisory board and reviews proposals for Distinguished Lectureships, Opportunity Grants, and Departmental Initiative Grants.

The Resource Equity Committee (REC) meets monthly and assists with the design, implementation, and analyses of data and questionnaires for the ACES program. Attendees in Year 3 included Dr. Bilimoria, Dr. Nahida Gordon, Dr. Patricia Higgins, Dr. Liang, Dr. Perry, Dr. Eleanor Stoller, Dr. Cyrus Taylor and a graduate student. Dr. Bilimoria serves as liaison and provides oversight for the research and evaluation efforts. Dr. Perry, Dr. Liang, and one graduate student provided research support to the REC.

### **Internal Collaborators**

Kathryn M. Hall, Assistant Vice President, Institutional Diversity & Equity

Erica Merritt, Manager of Diversity, Office of Equal Opportunity & Diversity

Carolyn Gregory, Assistant Vice President of Human Resources

Sharry Floyd, Director of Corporate Development

Debra Fink Assistant Director of Student Services, Mandel School of Applied Social Sciences (MSASS)

Ann Boughner, Director of Human Resources & Leadership Development, School of Engineering

Daniel Anker, Associate Dean of Faculty & Institutional Affairs, School of Medicine

Patricia Gallagher, CPMSM, Director, Medical Staff Services, MetroHealth Hospital

Dr. Jerold Goldberg, Dean, School of Dental Medicine

Thomas Matthews, Director, Career Center

Latisha M. James, Director, Community Relations, Center for Community Partnerships

Sarah Taylor, (Chair), Newcomers Committee

Dr. Margaret Stager, Associate Professor, Pediatrics; President, Women Faculty of the School of Medicine

Megan Linos, Instructional Designer, Instructional Technology and Academic Computing (ITAC), Information Technology Services

Mano Singham & Sarah Walleck, University Center for Innovation in Teaching and Education (UCITE)

Kathryn Karipides, Associate Provost, Office of the President and the Provost

### **External Collaborators**

Deborah Plummer, Director, Office of Diversity, The Cleveland Clinic Health System, Cleveland, Ohio

Karen Romoser, Perceptis, LLC, Cleveland, Ohio

Carmen Everett DeHaan, United States Supervising Probation Officer/Founder Latina Cleveland, Cleveland, Ohio

Melodie Yates, Director, Diversity Training and Research, Office of the Vice President, Cleveland State University, Cleveland, Ohio

### **Search Procedure Internal Collaboration**

In an ongoing effort to create further alliances, Amanda Shaffer and Beth McGee work closely with Kathryn Hall, Assistant Vice President for Institutional Diversity and Equity, and Erica Merritt, the Manager of Diversity, to align staff and faculty training and climate change activities at Case. In addition, Amanda Shaffer is currently working with Carolyn Gregory in Human Resources and Daniel Anker in the School of Medicine to create a series of faculty workshops designed to increase communication skills among faculty researchers in order to improve lab productivity the management of human capital. With needs assessment and design activities underway, it is expected that the workshops will be offered in fall of 2007. The ACES co-PIs and staff worked with Sharry Floyd, Director of Corporate Relations, to sponsor a campus visit by Dr. Carol Kovac of IBM, and to promote the NSF-ACES Distinguished Lecture series within the greater Cleveland business community.

Efforts to promote best practices in faculty searches has led to quarterly meetings with key diversity personnel at the Cleveland Clinic and MetroHealth Hospital, as well as presentations to the Women Faculty of the School of Medicine.

The Chemistry Department in the College of Arts & Sciences utilized the faculty diversity specialist in their department over a period of six months to facilitate a more equitable and open search process.

The Macromolecular Science and Engineering Department in the School of Engineering utilized the search committee training and campus liaison activities and successfully recruited two women faculty of color for an STC, the NSF Center for Layered Polymeric Systems, which was funded in July 2006.

Even though he is not part of the NSF-ACES targeted schools or departments, Dr. Jerold Goldberg, Dean of the School of Dental Medicine, continues to require all search committees in the School of Dental Medicine to receive search training, review the search guidelines, and discuss relevant research about bias with Amanda Shaffer. The latest search presentation was to the Department of Oral & Maxillofacial Surgery

### **Partner Hiring/Retention Collaboration**

The ongoing collaboration with Thomas Matthews, Director of the Career Center, for services to assist faculty partners (both new and current) in finding non-academic work in the surrounding area, is temporarily suspended due to budget constraints and downsizing. An additional networking alliance has been created with Debra Fink in MSASS to help faculty partners network in the non-profit community in Greater Cleveland. External collaborators include

Michael E. Kovach and Academic Affairs at Baldwin Wallace College and other local colleges and universities that Amanda Shaffer is contacting regarding working cooperatively to set up a partner hiring system for academic faculty partners in Northeast Ohio.

### **Exit Interview External Collaboration**

The Faculty Exit Survey, using external partner PerceptIS Inc., was launched in September 2005. The second survey was administered in June/July 2006. The online survey can be viewed here <http://eodsurvey.case.edu/exit/exit.htm> The results can be found here <http://www.case.edu/admin/aces/report/Year 3 Annual Report Appendix Exit Survey Summary no open ended.pdf>

### **Faculty Training and Development**

In Fall 2005, Provost John Anderson made faculty attendance at a diversity workshop mandatory within the first fiscal year of a faculty hire with 100% compliance with the policy. The existing diversity training, primarily aimed at newly hired staff and research assistants, has been redesigned by Amanda Shaffer and Erica Merritt, to better focus on faculty-specific situations in the department, lab, and classroom. The new Cultural Competency Awareness Class will be a faculty-only session held in the weeks immediately following the start of the semester, and will hopefully be the start of an ongoing dialogue about the campus climate for women faculty and faculty of color.

The ongoing development of women faculty websites, created in response to the perception that faculty tend to neglect the maintenance of their websites, has resulted in a total of five new websites, with another five in development. The templates, created by Megan Linos in collaboration with Amanda Shaffer, allow the faculty member to comply with the Case preferred webpage design and learn simple html so that continual updating of information, publications, and CV is less time consuming, and therefore more likely to be completed.

Macromolecular Engineering graduate Cheryl Campo, Ph.D. (newly hired Assistant Professor at SUNY Fredonia in the Chemistry Department), attended the professional development workshops for future science and engineering faculty, July 20–22 at VA Tech, and is encouraging the graduate students in her former department to take advantage of the opportunity in the future.

## **C. Activities and findings**

### **Vision**

The ACES vision at Case Western Reserve University is for institutional transformation that leads to increased transparency and accountability as well as more equitable practices, policies, procedures, and structures. Our activities and findings for Year 3 are summarized below including the difficulties in implementing proposed activities and approaches to address them.

We had originally planned to work with four test departments in Years 1 and 2 of the ACES project, which we called Phase 1. Because of the exceptional response in the test departments and the large number of departments remaining to work with in Phase 2, we moved up the beginning of Phase 2 to January 2005. Ten more departments, suggested by the deans of the four college/schools received the successful coaching and mentoring interventions: Anthropology, Geological Sciences, Mathematics, and Political Science in the College of Arts & Sciences (CAS); Biomedical Engineering, Chemical Engineering, and Electrical Engineering & Computer Science in the Case School of Engineering (CSE); Biochemistry and Molecular Biology &

Microbiology in the School of Medicine (SOM); and Marketing & Policy Studies in the Weatherhead School of Management (WSOM).

In January 2006, these interventions were offered to another eight departments: Physics, and Psychology in CAS; Macromolecular Science & Engineering and Materials Science & Engineering in CSE; Genetics and Pharmacology in SOM; and Economics and Operations Research in WSOM.

### **Coaching**

Diana Bilimoria oversees the executive coaching program for women faculty and chairs of the departments and deans of the four participating schools. An executive coach is someone who has general academic/organizational experience and who provides performance-related and career-related advice. The coach helps the coachee to specifically determine career and leadership vision, goals, plans, and actions. They give advice, resources, and feedback on how to best accomplish the identified vision. The executive coaching intervention consists of a 6-7 session coaching program for women faculty and a 8-10 session coaching program for deans and chairs. Templates providing session guidelines for coaching of women faculty and chairs are available at <http://www.case.edu/admin/aces/coaching.htm>

Coaches Cohort meetings, which consists of the co-PIs and six coaches, were held regularly to debrief and improve our coaching activities. Meetings were held during Year 3 every 2–3 months.

Coaching activities for Round Two coaching (ten departments, January–December 2005) were completed for most participants in December 2005. In total, executive coaching was provided to 23 women faculty (1 Instructor, 11 Assistant Professors, 4 Associate Professors, and 7 Professors), 7 chairs and associate chairs, 2 associate deans, 1 deputy provost, 1 vice provost, and 1 minority male faculty member. Occasionally, one or two additional closure sessions were provided during the Spring 2006 semester for some of the 2005 women faculty participants. For some chairs, coaching was also continued in 2006. One dean of the four ACES college/schools continued occasional meetings with his ACES executive coach during 2005; the other 3 deans had earlier declined ACES coaching and no further progress was made on this front.

Mid-intervention and final coaching evaluations received from participants were very positive and are reported in **Appendix I (ACES Research and Evaluation Report – YR 3)**. Response rates for these evaluations were higher for the mid-intervention evaluation than for the final evaluation (the decline was attributed in part due to survey fatigue). Response rates for women faculty were better than response rates for chairs and deans. Since response rates for the final evaluations of 2005 coaching were lower than expected, and since we are now beyond the test phase of implementation, we decided to drop the mid-intervention coaching evaluation during 2006 (to reduce survey response fatigue and improve response rates) and retain only the final evaluation of coaching (which will occur in early 2007).

Executive coaching in eight new departments was initiated in early 2006. Coaching in these departments involved leadership development coaching of the chairs: 5 of the 8 chairs began their coaching at the start of 2006. Two chairs declined the executive coaching. One other chair, who had declared his intention to quit the chair position at the end of the 2005/2006 academic year, also declined coaching. The new chair of this department has yet to be engaged. Career and leadership development coaching was also initiated for 24 women faculty

(1 Instructor, 11 Assistant Professors, 5 Associate Professors, and 7 Professors) in the eight departments. In addition, executive coaching was started in early 2006 for an ACES Co-PI.

Overall, there is now a very positive buzz about executive coaching among women faculty on our campus. Earlier skepticism and hesitation about the coaching program has greatly diminished among women faculty. Recently, at our first University-wide meeting of women faculty (convened by ACES to share our research findings and intervention results to date with the campus-wide group of women faculty as well as to initiate discussion of institutionalization beyond ACES), women faculty from ACES and non-ACES departments asked the ACES co-PIs to create an ACES hotline for emergency-type coaching that would be available to all campus women faculty on an as-needed basis. This would allow women faculty facing unique opportunities and challenges to receive short-term and quick-turnaround coaching advice from a professional executive coach that would help them to optimally address and resolve whatever issue, opportunity or problem they were facing.

Accordingly, ACES Hotline Coaching was established in February 2006. The main goals of the ACES coaching hotline are to assist individual women faculty to comprehensively analyze and contextualize an emergent issue, opportunity or problem, prioritize preferences, and initiate a plan of action that will ultimately result in a decision about or resolution of the issue. During the period February–June 2006, six women faculty have availed of this opportunity, and received 1–3 Hotline Coaching sessions as needed. Issues for which Hotline Coaching was sought by women faculty included: (1) considering departmental chair position after the resignation of the current chair, (2) negotiations with the dean regarding the possibility of departmental chair, (3) assistance with preparation for a formal grievance with the Faculty Senate Grievance Committee regarding treatment by the department and the school, (4) job negotiations regarding role as Committee Chair, (5) research funding supervision and budget management issues, (6) career choice questioning, and career development and planning issues. The coaches used for Hotline Coaching are the same as those employed in the executive coaching of women faculty in the ACES departments; these are the same professionals who have been working as coaches with S&E women faculty at Case over the first 2 ½ years of the ACES award.

To date, the process for implementation of ACES Hotline Coaching has been quite informal. Women faculty members request this specific coaching after experiencing some urgent need, and learning about our resource from the ACES website or from others knowledgeable about ACES. Requests are forwarded to Diana Bilimoria, co-PI who organizes the ACES executive coaching program; she then evaluates the request for its merits and coordinates with a coach to work with the person as soon as possible (usually a first contact is made by the coach within 2–3 days of the original request). While this process has worked well during the first semester of its implementation, the ACES team is cognizant of the imperative to determine how to institutionalize this resource in the longer term, as also for the larger executive coaching program.

Evaluation of the ACES Hotline Coaching has been conducted by emails between Diana Bilimoria and the participants after their coaching ended. Of the six participants who received Hotline Coaching during February–June 2006, three persons chose to receive 1–2 sessions of about 1 ½ hours each. Each of these women faculty members indicated that they had received great benefit in addressing their unique issue from their interactions with their Hotline Coach.

### **Mentoring**

The first phase of the Mentoring program was introduced in January 2004, when women and minority faculty were encouraged to identify a mentoring committee consisting ideally of three

individuals: (1) one from inside the department, (2) external to the department, and (3) external to the university. In Summer 2005, we appointed Verena Murphy, a graduate student in Organizational Behavior, as a Mentoring Evaluator to interview faculty who were eligible for mentoring committees or who had already set these up. In 29 evaluation interviews conducted with faculty during the fall, it became clear that the existing climate supported an informal mentoring structure. In those departments where a formal structure existed, it was often not implemented, or not consistently.

Mentoring activities undertaken by Verena Murphy during fall 2005 were:

- Attended one day workshop on “Successful Mentoring” in Denver, CO. Submitted a report to ACES co-PI meeting.
- Updated mentor list on ACES faculty website.
- Coordinated Mentoring Workshop with Claire Miller for faculty in December 2005.
- Issued nine updates for Coaches on all of their coachees’ mentoring status.
- Completed a year-end report on faculty interviews in December 2005.

During the spring 2006 semester, the Mentoring Evaluator conducted 28 interviews with women faculty in the newly added ACES departments regarding their mentoring experiences and plans for professional development. Faculty stated that they feel they receive adequate, although informal, mentoring mostly from their peers, initiated through personal contacts, and not part of a formalized structure.

Mentoring activities undertaken by Verena in spring 2006 included:

- Collaborated with Diana Bilimoria and Nancy DiIulio on two Mentoring Workshops for the Departments of Electrical Engineering & Computer Science and Biomedical Engineering, including program evaluation.
- Coordinated with other department chairs to hold future Mentoring Workshops.
- Coordinated October 2006 visit of Harvard Professor Jean Emans (Office of Faculty Development, Children’s Hospital, Boston) with Dr. Margaret Stager (School of Medicine)
- Completed 31 interviews with women and minority faculty on their experience of mentoring and their professional development needs.
- Collected separate mentoring vignettes from women non-tenure track faculty.
- Completed a report including recommendations for ACES co-PI Retreat in May 2006.
- Completed a cost estimate for establishing an Office for Faculty Development at Case for Lynn Singer.

During June 2006, Verena Murphy interviewed 10 recipients of ADVANCE Opportunity Grants on their results from these grants. In July, she is planning to interview 7 other grant recipients. A report including vignettes is in preparation.

### **Provost’s Leadership Retreat**

The ACES-sponsored annual Provost’s Leadership Retreat was held on the Case campus on November 11, 2005. The President, Provost, deans of the schools of Engineering, Management, and Medicine and the College of Arts & Sciences, and chairs of the 31 S&E departments participating in the NSF-funded ACES program were invited to discuss issues pertinent to the recruitment, retention, advancement, and leadership of women faculty.

The theme for the 2005 retreat was “Things That Work!” (See attached agenda in Appendix I) The program started with an informal lunch. The keynote speech was delivered by Riane Eisler,

world-renowned author and speaker, on the topic of the creation of a partnership way of living and organizing (as opposed to the dominator model), and its application to research universities. Welcome presentations were made by Case's President, Edward M. Hundert, Provost John Anderson, and Deputy Provost Lynn Singer (ACES PI) following lunch. The CRLT players of the University of Michigan performed a skit about hiring a new faculty member, followed by a large-group discussion of hiring processes and climate. Professors Cyrus Taylor and Peter Pintauro, two S&E chairs who had attended the Chairs Leadership Workshop at the University of Washington in summer 2005, then shared the highlights of their experience with their peers at the retreat. Following this, Provost Anderson introduced the importance of leadership for chairs, and Diana Bilimoria presented the findings of a case study of Case's Neurosciences Department conducted with a doctoral student. Professor Diana Kunze of the Neurosciences Department also joined this presentation to give her real-life perspective on the findings. The presentation (available at <http://www.case.edu/admin/aces/annualreports/AGoodPlaceToDoScience.pdf>) provided chairs in the audience with a model of a productive and inclusive S&E departmental work climate; dimensions included inclusive science identity, constructive interactions, participative activities, integrative leadership, and learning and inclusion processes. Following the discussion of the findings and model, Professors Cyrus Taylor and Diana Bilimoria, on behalf of the ACES Research and Evaluation Team, led small-group and large-group interactive discussions of two case vignettes, drawn from actual focus group and interview data, which highlighted specific situations experienced by women faculty in S&E departments. The final component of the retreat, facilitated by Deputy Provost Lynn Singer, was a discussion of next steps for the university. Evaluations of the retreat were very favorable.

**ADVANCE Opportunity Grants**

\$125,389 was provided in Year 3 (cost share) to women faculty in the S&E departments for projects and activities where funding is difficult to obtain through other sources. We have received a total of 15 Proposals and were able to award 12 small grants to maximize chances for success of women faculty at Case.

<b>ADVANCE Opportunity Grant Awards</b>	
<b>Awardee</b>	<b>Department</b>
Ann-Marie Broome	Biomedical Engineering
Daniela Calvetti	Mathematics
Jennifer Liang	Biology
Ramani Pilla	Statistics
Deborah O'Neil	Organizational Behavior
Ruth Siegel	Pharmacology
M. Cather Simpson	Chemistry
Caroline Sussman	Physiology & Biophysics
Elizabeth Werner	Mathematics
Charlotte Ikels	Anthropology
Janet McGrath	Anthropology
Emilia McGucken	Sociology

During June 2006, Coordinator interviewed 10 recipients on their progress of projects resulting from ACES grants. In July is planning to interview 7 other grant recipients. A report, including vignettes, to the ACES committee is in preparation.

### **ADVANCE Distinguished Lectureships**

\$50,000 is available annually to provide 10 Distinguished Lectureships to senior women scientists a year for a minimum for a minimum stay of 2 days and a maximum stay of 2 weeks at Case. The lecturer is invited based on mutual research interests with faculty in the host department. She gives at least 2 lectures and a public lecture followed by a reception. In Year 3, ACES sponsored six ADVANCE Distinguished Lectureships. The goal of the Distinguished Lectureships is to provide networking opportunities and raise the visibility of S&E women faculty on campus.

<b>ADVANCE Distinguished Lectureship</b>	
<b>ADVANCE Lecturer</b>	<b>Host Department</b>
Kristina Ropella Marquette University	Biomedical Engineering
Banu Onaral Drexel University	Biomedical Engineering
Marcia Inhorn University of Michigan	Anthropology
Margaret Weir University of California, Berkeley	Political Science
Susan Taylor University of San Diego, California	Biochemistry
Lily Jan University of California, San Francisco	Physiology & Biophysics

### **Outreach to Departments**

A one-hour presentation about the ACES program was given to the eight Round Three departments by Diana Bilimoria, Lynn Singer, or Mary Barkley, accompanied by one or more ACES core group members (Donald Feke, P. Hunter Peckham, Amanda Shaffer, Beth McGee, Patricia Higgins, Cyrus Taylor, and Dorothy Miller). The presentation covers goals and expectations during the ACES year, research regarding the promotion and status of women in STEM nationally and at Case, resources available to the departments such as networking events, customized training (a presentation skills workshop was developed for one department), the role of the chair, the role of the women faculty, and the role of the male faculty. These presentations, which strive to ensure buy-in and signal the importance of the ACES activities, often lead to spirited discussions within the department about some of the underlying philosophies of the department.

All chairs, faculty and department assistants of the 31 ACES departments receive our Bi-Annual Newsletter, regular email updates about activities, and flyers reminding them of distinguished lectureships, networking events, and application deadlines. Lynn Singer, PI, has also given presentations and updates about ACES at Faculty Senate Meetings and Deans Council Meetings and provides handouts of the ACES newsletter at events and meetings which she attends.

Amanda Shaffer has also made presentations of the search guidelines and procedures to the business managers and department assistants in the Case School of Engineering, the School of Medicine, and MetroHealth Hospital. We anticipate extending this outreach effort at the College of Arts & Sciences, Weatherhead School of Management, and University Hospitals in 2006/2007.

### **Male Faculty Initiative for Increased Faculty Involvement**

In recognition that institutional change can be catalyzed by increased participation of the faculty in promoting ADVANCE objectives, a new initiative was launched in Year 3 on a trial basis. This initiative stems from the premise that top-down efforts (from the University administration) can be complemented by grass-roots efforts (from the faculty). A small group of male faculty, each of whom was known to be very aware of, and concerned by, the barriers faced by women faculty in the S&E fields, were invited to meet to discuss what faculty could do to promote ADVANCE objectives. The ultimate goal of this group is to increase the number of male faculty interested in the advancement of women faculty, not only in the S&E fields but across the University. This group (which has come to be known as the Good Guys Climate Change Committee or GGCCC) was convened by co-PI Donald Feke and P. Hunter Peckham and contains representatives from several of the S&E departments. One of the members (Dr. Neal Rote, School of Medicine) has taken over leadership of this group.

The rationale for forming this Committee is threefold: (1) By representing different segments of the University, the work of the members of this Committee could seed awareness of women faculty issues and the benefits of working within a highly diverse faculty simultaneously in multiple departments. (2) Those male faculty who are insensitive to or unaware of women faculty issues may hear the message about the need for climate change more clearly from male faculty colleagues. (3) Having faculty promote the ADVANCE objectives in conjunction with the administrative efforts sends a strong signal to the faculty of the need to be involved in addressing women faculty issues.

The GGCCC met during the spring 2006 semester to organize and discuss whether their efforts would be more efficiently spent on addressing recruiting issues or retention issues; they settled on the latter. The Committee is considering a number of different options for future actions and events, such as members making themselves available for mentoring, holding a campus-wide forum (open to all faculty members) on how male faculty members can help promote ADVANCE objectives, directly supporting ACES events and program, etc.

### **Search Committee Support**

Amanda Shaffer continues to conduct one-on-one meetings with department chairs prior to their initiating a faculty search to assess current faculty search procedures and areas for improvement in the department. This policy allows the training to be somewhat customized to the department and avoids the “one-size-fits-all” mentality that can increase resistance to implementing the proposed changes. Accountability for the diversity of the candidate pool on the part of the deans has been incorporated into the process with a form that requires the dean to sign off on the applicant pool before any candidates can be invited to interview.

In the past year the search committee training has been split into three 45-minute sessions: (1) Reviewing the Search Guidelines, (2) Best Practices for Evaluating Candidates, and (3) Interviewing & the Campus Visit. Web tools have been developed to assist with self-training and to increase dissemination of the information. The website is at <http://www.cwru.edu/president/aaction/aeeo.html>

Additionally, Faculty Welcome Packets have been created for women interviewees that explain the ACES program and resources available, such as lactation centers, partner hiring networks, and relocation services. We also provide maps of the area, brochures of museums and attractions, visitor guides, minority and special interest newspapers (Jewish News, Hispanic Times, Call & Post, Gay People’s Chronicle). In the spirit of transparency, the Diversity Specialist is available to offer candid information about child care/elder care options, domestic partner benefits for LGTB, and any other issues that a candidate may be hesitant to discuss with a search committee

or host. Much of this information is also available on the Faculty Diversity website. This service has been reported to be very useful by candidates.

A network of women faculty and faculty of color has been created to meet with candidates to discuss climate issues and their experience of being a woman (or faculty of color) scientist at Case. Most especially Lynn Singer, PI, rearranges her calendar in order to speak personally with candidates. We have received positive feedback from several candidates, who were subsequently hired into Case S&E department, that we were the only university that made efforts to openly address climate issues with them and schedule interviews with senior women scientists.

The results from the new voluntary online Affirmative Action Tracking Form will be reported to the President, Provost, and Faculty Senate in October 2006. This online form will allow us to better track the applicant pool beyond the final candidate list. This confidential database will be housed in the Office of Equal Opportunity and Diversity and only be accessed by the Faculty Diversity Officer and the Faculty Diversity Specialist for reporting purposes. We anticipate increased compliance over the remaining two years of the NSF grant, and have engaged in dissemination activities throughout the university to increase awareness and facilitate compliance.

### **Faculty Exit Survey**

Much can be learned from faculty members who have left the institution or announced their decision to leave. Based on responses received from the pilot survey, a new annual exit survey was developed and administered in September 2005 to seek feedback from faculty who leave. A second round was administered in June/July 2006.

As of June 2006, we received 31 valid responses (17 males, 12 females) from exiting faculty in this wave of data collection. Questions asked included their reasons for leaving Case, their working experience, and things that need to be changed at Case. The top reasons for leaving Case include problems associated with the tenure evaluation process and departmental tension with chair and peer colleagues. Valuable suggestions were provided by faculty who exited, including promoting an atmosphere of teamwork, valuing teaching, and clear guidelines for promotion and leadership development.

The exit survey has been institutionalized for annual administration during the summer and fall semester of each year through the university's Faculty Diversity Office. Additional information is included in the online Appendix: [http://www.case.edu/admin/aces/report/Year\\_3\\_Annual\\_Report\\_Appendix\\_Exit\\_Survey\\_Summary\\_no\\_open\\_ended.pdf](http://www.case.edu/admin/aces/report/Year_3_Annual_Report_Appendix_Exit_Survey_Summary_no_open_ended.pdf).

### **Minority Pipeline**

In Year 3, funding for the ACES Minority Summer Undergraduate Research Program was supported by the Office of the Provost and a HHMI grant to the Department of Biology, which supported 7 minority women students. Three students were from Fisk University, building on our university collaboration with Fisk. The other four students were from Edinboro University in Pennsylvania, College of Wooster in Ohio, and the University of Puerto Rico Ponce in Puerto Rico. All ACES fellows are placed with Case faculty mentors and spend 10 weeks conducting research in an area of interest. In addition, they participate in activities sponsored by other summer research programs. The goal of the summer program is to encourage minority women students to pursue academic careers in S&E. In light of a request from a student to be directed to a Spanish speaking church in the area Carmen Everett DeHaan, Founder of Latina Cleveland, was contacted to facilitate the request and help welcome the minority students.

<b>ACES Summer Undergraduate Research Program</b>	
<b>ACES Fellow</b>	<b>Faculty Mentor/Department</b>
Juliana Anquandah College of Wooster	Dr. Irene Lee, Chemistry.
Jourdan Bowe Fisk University	Dr. Heidi Martin, Chemical Engineering
Inelisse Vasquez Diaz University of Puerto Rico Ponce	Dr. Jennifer Liang, Biology
Dionne Griffin Edinboro University	Dr. Mary Barkley, Chemistry
Marangelly Delgado Lopez University of Puerto Rico Ponce	Dr. Joseph Nadeau, Genetics
Karen Pemberton, Fisk University	Dr. Monica Montano, Pharmacology
Dyianweh Queh Fisk University	Dr. Lynn Singer, Psychology

Due to ongoing financial problems at Fisk University, the faculty are not able to make extended visits to Case during the academic year. Moreover, Fisk S&E faculty also teach during the summer semester, so they are only available for short visits during the time between semesters. Efforts to organize visits of Case Faculty to Fisk have likewise not been fruitful. We are currently negotiating a faculty exchange with Dr. Sheila Peters, director of the Race Relations Institute at Fisk, possibly in Fall 2006.

### Networking Events

ACES hosts one or two networking luncheons per semester for women faculty in the 22 departments that we have worked with so far. These luncheons were initiated during Phase 1 upon request by women faculty in the four test departments. The luncheons have been well received and provide women faculty a chance to talk about their experiences at Case and to discuss success stories and challenges with the mentoring and coaching initiatives. At least one PI attends each luncheon in order to receive feedback about the ACES project from the women faculty.

ACES hosted a Theatre Party in November 2005 for the 14 departments that we had worked with to socialize across departments and college/schools. 17 women faculty and 19 male faculty and their spouses attended.

The Flora Stone Mather Center for Women held two networking and faculty development events in the past year. Both were rated either as “Extremely worthwhile” or “worthwhile” by all respondents. The feedback on these workshops has been almost entirely positive and laudatory, with the only “negatives” being requests for more of them.

1. Deborah M. Kolb, Deloitte Ellen Gabriel Professor for Women and Leadership, Simmons School of Management, conducted a fall workshop on *Negotiation in the Academy: A Workshop for Women Faculty*. Dr. Kolb’s work on women’s leadership is well known. She is co-author of *Her Place at the Table: A Woman’s Guide to Negotiating: Five Key Challenges to Leadership Success*. Twenty-six women faculty attended.
2. In the spring semester, Associate Professor Susan S. Case of the Weatherhead School of Management at Case spoke about *Gendered Communication in Academe: Understanding*

*the Gap – Valuing the Differences.* Dr. Case frequently consults with industries around the country on this topic. Twenty-nine faculty attended, including one man.

This year the Flora Stone Mather Center held its inaugural “Spotlight Series Prize Awards.” Each school was asked to choose an outstanding woman faculty scholar to receive the award: Kathleen Kash, Ph.D., Professor of Physics, College of Arts & Sciences; Kathleen Farkas, Ph.D., Associate Professor of Social Work, Mandel School of Applied Social Sciences; Marion Good, Ph.D., Professor of Nursing, Frances Payne Bolton School of Nursing; Yiping Han, Ph.D., Associate Professor of Dental Medicine, School of Dental Medicine; Anne Hiltner, Ph.D., Professor of Macromolecular Science & Engineering, Case School of Engineering; Sharona Hoffman, J.D., LL.M., Professor of Law, School of Law; Lisa M. Maillart, Ph.D., Associate Professor of Operations, Weatherhead School of Management; and Patricia Marshall, Ph.D., Associate Professor of Bioethics, School of Medicine. The award ceremony was well attended by faculty and included remarks by most deans and many senior professors. In addition, the Spotlight Series on Women’s Scholarship included a presentation of research on the lives of women physicians by Dr. Susan Hinze, Associate Professor of Sociology, to a luncheon gathering of more than 75 persons, mostly women faculty from the School of Medicine as well as several women physicians.

In conjunction with ACES, the Flora Stone Mather Center for Women held its second annual Women of Achievement Luncheon, honoring women faculty and administrators who had received tenure, promotion, and honors in the past year. This annual recognition luncheon has been institutionalized through the Office of the Provost and the Flora Stone Mather Center for Women.

### **Institutionalization**

A series of brainstorming meetings were conducted in June–July 2006 on the topic of Institutionalizing ACES initiatives. Chaired by Dr. Clare Rimnac, Professor of Mechanical & Aerospace Engineering, and Amanda Shaffer, Faculty Diversity Specialist, two groups of faculty from across the seven colleges (one group of all women, one group of all men) were asked to brainstorm the following:

"Now that ACES is entering Year 4 of 5 years, we are actively seeking ideas by which to institutionalize campus-wide the transformational initiatives that we have been working to embed in the 31 departments. Questions for brainstorming

1. What can be done to make Case a "destination institution" for women and minority faculty?
2. What can be done to improve the retention of tenured women and minority faculty?
3. What can be done to increase the number of women and minority faculty in leadership, upper-level academic administrative positions?
4. Is there anything else ACES should be focusing on in the final two years?

The results were compiled and presented to two groups of mixed gender faculty from across the university who were asked to distill the 20 major ideas into priorities for campus-wide activities to transform the climate at Case. Consideration was given to which ideas were most essential and/or feasible. A preliminary look at the results shows the recommendations closely aligning with those of the 2004 Faculty Climate Survey. A report of these activities will be presented to the co-PIs in August 2006.

### **Undergraduate and Graduate Student Training**

The Flora Stone Mather Center for Women continued its gender awareness workshops in undergraduate and graduate students S&E classrooms and seminars. A new approach, allocating a greater amount of time to the presentation of scientific findings on gender and science was introduced. This approach was better received than the dramatic presentations with which we had begun our pilot programs. Self-reporting student evaluations of our workshops provided some evidence that students found the workshops worthwhile and learned new material from the series and that the series had affected students' thinking about gender in academia. Many reported that they thought the series would influence their behavior in the future.

Comments from participants and continuing difficulty with use of classroom time for the workshops has stimulated some modifications to the program. We are attempting to work more closely with student leaders and groups to develop ways of combining our workshops with their activities and events outside of the classroom. We have also seen some indication that more time spent during the workshops in discussion of the material proves fruitful. Thus, we are modifying our presentations to allow for more discussion time.

### **Pilot of Diversity Training for New Faculty**

The initial diversity training was comprised of faculty attending a session along with staff to learn about Case policies regarding sexual harassment, discrimination and what it means to contribute and flourish in a respectful, diverse workplace. The new Cultural Competency Training Class will be strongly focused on faculty life in the lab, classroom, and department and raise awareness about the impact of various kinds of bias on the campus climate, as well as how it impacts the success and retention of women faculty and faculty of color.

### **Challenges and Progress on Outcomes**

Last year we identified the following three challenges. We have made progress on all of them:

1. Challenge: To bring the Deans more on board with the ACES effort.  
Progress: The dean of the Case School of Engineering instituted a diversity plan during 2005–2006 and significantly increased the number of women with endowed chairs in his school. The dean of the Weatherhead School of Management appointed two women as endowed chairs (one Professor and one Assistant Professor) during 2005–2006, and has successfully recruited two women faculty even in a budget-challenged year (both new appointments start in July 2006). The dean of the School of Medicine has discussed the possibility of creating an Office of Women Faculty, and has identified Dr. Margaret Stager to lead this initiative. Together with Dr. Stager, ACES has invited Dr. Jean Emans of the Harvard Children's Hospital, founder of their Faculty Development program, to visit the Case campus for meetings with the School of Medicine administrators and the ACES team in October 2006. Finally, the recent (June 2006) resignation of the dean of the College of Arts & Sciences (CAS) has resulted in the appointment of Dr. Cyrus Taylor, member of the ACES Research and Evaluation Committee, as the Interim Dean of CAS. He is currently receiving executive coaching in his dual capacity as Chair of the Physics Department.
2. Challenge: To create a community among the Department Chairs.  
Progress: During 2005–2006, we continued luncheon meetings with the Provost, and institutionalized the Provost's Annual Leadership Retreat for Deans and Chairs. This latter event is described in an earlier section of this report.
3. Challenge: To create a community among women faculty.

Progress: We have been making steady progress on this front through (also described elsewhere in this report):

- Specific campus-wide networking and faculty development events for women faculty
- The first-ever university-wide meeting of women faculty, convened by ACES in February 2006 to discuss the institutionalization of NSF Advance activities on campus
- Hotline Coaching
- ACES Institutionalization Faculty Committee meetings

A fourth challenge that was not explicitly identified in last year's annual report but which nevertheless has been important to address has been:

4. Challenge: To engage male faculty across campus in the advancement of ACES goals and to create male allies for women faculty in the departments.

Progress: In this regard, we have begun a grass-roots effort to involve male faculty through the creation of a Good Guys Climate Change Committee. In Fall 2005, Provost John Anderson made faculty attendance at a diversity workshop mandatory within the first fiscal year of a faculty hire with 100% compliance with the policy.

### **Presentations at Refereed Conferences**

- (1) Perry, Susan R., Liang, Xiangfen, Joy, Simy, Higgins, Patricia, Stoller, Eleanor P., Bilimoria, Diana, Gordon, Nahida, & Taylor, Cyrus C. (August 2006). How do Graduate Students Pick Advisors? Focus Group Stud from a Mid-Western University, American Psychological Association, New Orleans.
- (2) Bilimoria, Diana (Chair) (August 2005). *Applying Theory to University Transformation: Advancing Women Faculty in Science and Engineering*, Showcase Symposium at the Academy of Management Conference, Honolulu, Hawaii. Winner of the AOM Careers Division's *Best Symposium Award*, 2005.
- (3) Bilimoria, Diana & Perry, Susan (August 2005). *Transforming the Faculty Mindset*, symposium paper presented at the Academy of Management Conference, Honolulu, Hawaii.
- (4) Bilimoria, Diana (August 2005). *The Academic Glass Ceiling: Women Faculty in Science and Engineering*, symposium paper presented at the Academy of Management Conference, Honolulu, Hawaii.

### **Posters and Presentations at Non-refereed Conferences and Meetings**

- (1) Bilimoria, Diana, Perry, Susan R., Liang, Xiang fen, Gordon, Nahida, Higgins, Patricia, Stoller, Eleanor, Taylor, Cyrus & Joy, Simy. (May 2006). *Basing ADVANCE Interventions on Research Evidence*, poster presented at NSF Advance PI Meeting, Washington, D.C.
- (2) Perry, Susan R., Liang, Xiang fen, McGee, Shanna Beth, Higgins, Patricia, Stoller, Eleanor, and Bilimoria, Diana. (May 2006). *Why Faculty Leave Case: Findings from Two Waves of Exit Surveys*, poster presented at NSF Advance PI Meeting, Washington, D.C.
- (3) Bilimoria, Diana & Valian, Virginia. (May 2006). *Leadership Development at ADVANCE Institutions*, Presentation at NSF Advance PI Meeting, Washington, D.C.
- (4) Bilimoria, Diana & Perry, Susan. (May 2006). *How Do We Know That Our Executive Coaching Interventions Are Working?* Presentation at NSF Advance PI Meeting, Washington, D.C.

- (5) Savinell, Robert (March 2006). “*Gender & Ethnic Diversity: Applying Lesson Learned*”, March 31, 2006.
- (6) Singer, Lynn. (May 2006). *Engaging Male Faculty*. Round table discussion/ presentation at NSF Advance PI Meeting, Washington, D.C.
- (7) Shaffer, Amanda. (May 2006). *Campus Communications and Outreach*. Round table discussion/presentation at NSF Advance PI Meeting, Washington, D.C.
- (8) Shaffer, Amanda & McGee, Beth (March 2006). “*Institutional Transformation: Enhancing Gender and Racial Diversity in Your Faculty*”, 11<sup>th</sup> Annual State of the State Conference: Equity, Opportunity and Diversity in Ohio, Cleveland, Ohio.
- (9) Bilimoria, Diana, Perry, Susan R., Liang, Xiangfen, Higgins, Patricia, Stoller, Eleanor P. & Taylor, Cyrus C. (December 2005). *How do faculty members construct job satisfaction?* Poster presented at the National Academies Convocation on Biological, Social, and Organizational Contributions to Science and Engineering Success, Washington DC
- (10) Bilimoria, Diana, Jordan, C. Greer & Perry, Susan R. (December 2005). *A good place to do science: A case study of an academic science department*. Poster presented at the National Academies Convocation on Biological, Social, and Organizational Contributions to Science and Engineering Success, Washington DC
- (11) Bilimoria, Diana, Hopkins, Margaret M., O’Neil, Deborah A. & Perry, Susan R. (December 2005). *An integrated coaching and mentoring program for university transformation*. Poster presented at the National Academies Convocation on Biological, Social, and Organizational Contributions to Science and Engineering Success, Washington DC
- (12) Bilimoria, Diana (June 2005). *The Role of Research in Institutional Change*. Symposium presentation at the National Council for Research on Women (NCRW) Annual Conference, New York.

#### **D. Publications and products**

##### **Research Publications and Reports**

- (1) Bilimoria, Diana, Perry, Susan, Liang, Xiangfen, Higgins, Patricia, Stoller, Eleanor & Taylor, Cyrus (2006). How Do Female and Male Faculty Members Construct Job Satisfaction? The Roles of Perceived Institutional Leadership and Mentoring and their Mediating Processes, Journal of Technology Transfer, 32, 3: 355-365.
- (2) Bilimoria, Diana, Hopkins, Margaret M., O’Neil, Deborah A, & Perry, Susan (Forthcoming, expected publication in 2006). Executive Coaching: An Effective Strategy for Faculty Development. To appear in Stewart, Abigail J., Janet Malley, and Danielle LaVaque-Manty (Eds.), Advancing Women in Science and Engineering: Lessons for Institutional Transformation, Ann Arbor: University of Michigan Press.
- (3) Jordan, C. Greer & Bilimoria, Diana (Forthcoming, expected publication in 2006). Creating a Productive and Inclusive Academic Work Environment. To appear in Stewart, Abigail J., Janet Malley, and Danielle LaVaque-Manty (Eds.), Advancing Women in Science and Engineering: Lessons for Institutional Transformation, Ann Arbor: University of Michigan Press.

##### **Manuscripts in Progress**

- (1) Bilimoria, Diana, Liang, Xiangfen & Perry, Susan. The Role of Research in Institutional Change: Evidence from NSF ADVANCE Institutions (under revision at Human Resources Management).
- (2) Bilimoria, Diana, Perry Susan & Liang, Xiang fen. The representation and Status of Women Faculty in STEM Fields. For Burke, Ronald & Mattis, Mary (Eds.) Women and Minorities

in Science, Technology, Engineering and Mathematics: Opening the Pipeline, Edward Elgar (manuscript in preparation).

- (3) Stoller, Eleanor P., Higgins, Patricia A., Taylor, Cyrus, Robson, Linda, Bilimoria, Diana & Perry, Susan. Drawing on Supply-side and Demand-side Discourses: A Case Study of Faculty Perceptions of Gender and Academic Careers (draft manuscript available).
- (4) Jordan, C. Greer & Bilimoria, Diana. In Pursuit of Good Science: Moving Departments towards Inclusion and High Quality Science through Constructive Interactions (draft manuscript available).
- (5) Jordan, C. Greer & Bilimoria, Diana. Cooperation in a Competitive World: The Social Processes of an Effective, Professionally Inclusive Work Culture (draft manuscript available).
- (6) Bilimoria, Diana, Liang, Xiangfen & Perry, Susan. Predicting Academic Career Success from Academic Process and Individual, Relational, and Organizational Perspectives: Does Gender Matter? (draft manuscript available).
- (7) Liang, Xiang fen, Bilimoria, Diana & Perry, Susan. Faculty at Early-, Mid-, and Late- Career Phases: Does Gender Affect Work Effort, Productivity and Satisfaction? (Manuscript in preparation).

## Section II: Report on Research and Evaluation – Year 3

### Baseline Data Collection

The purpose of this year’s report is to summarize ongoing evaluation of the impact of intervention/transformational activities. Quantitative data are primarily utilized in the Phase 3 evaluation, with some qualitative survey responses included. The various components of this evaluation are described in more detail below.

### Data Sources

Data for assessing institutional transformation are established through multiple sources for all S&E departments. In an attempt to create a more reliable source of data from year to year, a more comprehensive faculty database for ACES departments was established by the group and updated through ongoing communication with the Provost’s office, Institutional Research, Deans’ offices and individual department administrators. Additional data were obtained from the AAUP faculty salary report, as well as from exit surveys, two junior faculty surveys (the national COACHE instrument and a Case-specific assessment of new faculty during their second year) and offer letters for incoming faculty. The details of this additional data collection appear in the “Other Data Collection and Analyses” section of this report.

#### Women Faculty

*(A. # and % of women in S&E departments)*

S&E Departments*	Full-Time	Part-Time/Adjunct	Total
Female	97 (22%)	12 (38.5%)	109 (23%)
Male	344 (78%)	20 (62.5%)	364 (77%)
<b>Total</b>	<b>441</b>	<b>32</b>	<b>473</b>

University (including S&E)	Full-Time	Part-Time/Adjunct	Total
Female	460 (34%)	88 (43%)	548 (35%)
Male	888 (66%)	115 (57%)	1,003 (65%)
<b>Total</b>	<b>1,348</b>	<b>203</b>	<b>1,551</b>

Source: Institutional Research, Individual Schools

\* Numbers include NTT faculty, no 50% appointments and no deans

S&E Refers to the 31 NSF-fundable Science and Engineering departments as defined in the grant. The data given are for university-paid faculty, since information about faculty paid by other institutions (primarily hospital affiliations) is less reliable and we are interested in equity and resource issues within the university.

The above tables show that the percentage of full-time women faculty is 22% in the S&E departments, less than for the whole university (34%), and the percentage of women part-time faculty is 38.5%, less than the percentage for the whole university (43%). In both S&E departments and the university as a whole, women are over-utilized in part-time/adjunct positions and under-utilized in full-time positions.

Below is the gender distribution of full and part time faculty broken down by department:

S&E Full-time Faculty*	Department	Full-Time		Part-Time/Adjunct	
		F	M	F	M
<b>School</b>					
<b>Arts &amp; Sciences</b>	<b>Anthropology</b>	5	5	2	2
	<b>Astronomy</b>	2	2	0	1
	<b>Biology</b>	6	13	0	0
	<b>Chemistry</b>	3	14	0	0
	<b>Geological Sciences</b>	1	7	0	2
	<b>Mathematics</b>	2	14	0	1
	<b>Physics</b>	2	18	0	1
	<b>Political Science</b>	2	5	1	0
	<b>Psychology</b>	5	7	4	4
	<b>Sociology</b>	3	4	0	0
	<b>Statistics</b>	3	3	0	1
<b>Total</b>		<b>34</b>	<b>92</b>	<b>7</b>	<b>12</b>
<b>Engineering</b>	<b>Biomedical Engineering</b>	4	17	1	1
	<b>Chemical Engineering</b>	1	12	0	1
	<b>Civil Engineering</b>	1	8	1	1
	<b>Electrical Engineering &amp; Computer Science</b>	2	33	1	1
	<b>Macromolecular Science</b>	3	8	0	0
	<b>Materials Science &amp; Engineering</b>	0	11	0	0
	<b>Mechanical and Aerospace Engineering</b>	2	13	0	1
<b>Total</b>		<b>13</b>	<b>102</b>	<b>3</b>	<b>5</b>
<b>Management</b>	<b>Economics</b>	3	10	0	0
	<b>Management Info.</b>	2	5	0	1
	<b>Operations Research</b>	2	7	0	0
	<b>Organizational Behavior</b>	3	5	0	0
	<b>MAPS</b>	2	10	0	0
<b>Total</b>		<b>12</b>	<b>37</b>	<b>0</b>	<b>1</b>
<b>Medicine</b>	<b>Anatomy</b>	5	12	1	2
	<b>Biochemistry</b>	2	23	0	0
	<b>Genetics</b>	10	14	0	0
	<b>Microbiology</b>	3	9	0	0
	<b>Neurosciences</b>	5	13	1	0
	<b>Pharmacology</b>	7	9	0	0
	<b>Physiology &amp; Biophysics</b>	4	26	0	0
	<b>RNA</b>	2	7	0	0
<b>Total</b>		<b>38</b>	<b>113</b>	<b>2</b>	<b>2</b>

Source: Institutional Research, Individual Schools

\* Numbers include NTT faculty, no 50% appointments and no deans

The remaining data presented below pertain to full-time Science and Engineering faculty members paid by the university.

## ADVANCE Objectives

### Equitable Faculty Recruitment Patterns

#### Faculty Hired by Rank and Gender for AY 2005-2006

Faculty Hires	S&E Departments		Other University Departments		Total	
	F	M	F	M	F	M
<b>Instructor &amp; Sr. Instructor</b>	3	1	7	5	10	6
<b>Assistant Professor</b>	3	9	6	7	9	16
<b>Associate Professor</b>	0	1.5*	4	1	4	2.5
<b>Professor</b>	0	4	0	5	0	9
<b>Total</b>	<b>6</b> <b>(28%)</b>	<b>15.5</b> <b>(72%)</b>	<b>17</b> <b>(49%)</b>	<b>18</b> <b>(51%)</b>	<b>23</b> <b>(41%)</b>	<b>33.5</b> <b>(59%)</b>

Source: Office of the Provost

\* Indicates a 50/50 joint appointment with no designated primary department

38% (21.5 out of 56.5) of all new university hires (excluding hospital departments) are Science and Engineering faculty. Of these hires, 28% are women, and 72% are men, which is a lower percentage of women than the current proportion in these departments (34%), lower than the hiring rates of women in other non-hospital departments (49%) and lower than the hiring rates of women university-wide (41%).

### Promotion and Retention of Women

#### Rank Information for AY 2005-2006

(D. Years in rank by gender)

S&E Years in Rank*			F	M
Arts & Sciences	<b>Instructor</b>	<b>Median</b>	<b>5</b>	<b>4</b>
		Mean	5	4
		Range	(3-7)	--
	<b>Assistant Professor</b>	<b>Median</b>	<b>4</b>	<b>3.4</b>
		Mean	3.33	3.51
			(.5-5.9)	(1-7)
	<b>Associate Professor</b>	<b>Median</b>	<b>2</b>	<b>6</b>
		Mean	4.7	9.32
		Range	(1-13)	(1.5-26)
	<b>Professor</b>	<b>Median</b>	<b>6</b>	<b>12</b>
		Mean	8.69	15.13

		Range	(1-22)	(1-40)
<b>Engineering</b>	<b>Instructor</b>	<b>Median</b>	--	--
		Mean	--	--
		Range	--	--
	<b>Assistant Professor</b>	<b>Median</b>	<b>4</b>	<b>2</b>
		Mean	3.51	2.93
		Range	(.85-6)	(.85-8)
	<b>Associate Professor</b>	<b>Median</b>	<b>1.5</b>	<b>5.75</b>
		Mean	1.5	8.02
		Range	(1-2)	(1-24)
	<b>Professor</b>	<b>Median</b>	<b>13.01</b>	<b>14.01</b>
		Mean	12.51	14.77
		Range	(1-23)	(.49-42.02)
<b>Management</b>	<b>Instructor</b>	<b>Median</b>	--	--
		Mean	--	--
		Range	--	--
	<b>Assistant Professor</b>	<b>Median</b>	<b>5</b>	<b>4.2</b>
		Mean	5.59	4.57
		Range	(4-7.3)	(3-6)
	<b>Associate Professor</b>	<b>Median</b>	<b>10.5</b>	<b>16.05</b>
		Mean	11.5	15.13
		Range	(7-18)	(2-28.5)
	<b>Professor</b>	<b>Median</b>	<b>4</b>	<b>11</b>
		Mean	4	15.68
		Range	--	(1.7-37.9)
<b>Medicine</b>	<b>Instructor</b>	<b>Median</b>	<b>3.74</b>	<b>1.94</b>
		Mean	4.9	7
		Range	(1.12-11)	(1-25)
	<b>Assistant Professor</b>	<b>Median</b>	<b>2.61</b>	<b>3.75</b>
		Mean	4.03	4.08
		Range	(.41-8.5)	(.25-12.01)
	<b>Associate Professor</b>	<b>Median</b>	<b>4.75</b>	<b>5.86</b>
		Mean	4.58	10.89
		Range	(3-7)	(3-41.19)
	<b>Professor</b>	<b>Median</b>	<b>6.29</b>	<b>12.59</b>
		Mean	9.85	15.91
		Range	(2-35.02)	(.83-38.85)

Source: Institutional Research

\* Excludes all NTT medical school faculty but the instructor rank

### Tenure Status AY 2005-2006

(B. # and % of women in tenure-track positions by rank and department)

S&E Tenure- track Faculty*	Department	Assistant		Associate		Professor	
		F	M	F	M	F	M
School							
Arts & Sciences	Anthropology	0	1	1	1	4	3

	<b>Astronomy</b>	1	0	1	1	0	1
	<b>Biology</b>	4	2	0	3	0	7
	<b>Chemistry</b>	0	3	2	0	1	11
	<b>Geological Sciences</b>	0	2	1	2	0	3
	<b>Mathematics</b>	0	2	0	1	2	10
	<b>Physics</b>	1	0	0	3	1	15
	<b>Political Science</b>	2	2	0	1	0	2
	<b>Psychology</b>	2	2	1	1	2	5**
	<b>Sociology</b>	0	1	1	0	1	3
	<b>Statistics</b>	1	1	0	0	2	2
<b>Total AY 05-06</b>		<b>11 (41%)</b>	<b>16 (59%)</b>	<b>7 (35%)</b>	<b>13 (65%)</b>	<b>13 (17%)</b>	<b>62 (83%)</b>
<b>Total AY 04-05</b>		12 (46%)	14 (54%)	5 (24%)	16 (76%)	13 (16%)	66 (84%)
<b>Total AY 03-04</b>		12 (43%)	16 (57%)	5 (23%)	17 (77%)	10 (14%)	61 (86%)
<b>Engineering</b>	<b>Biomedical Engineering</b>	2	7	2	4	0	6
	<b>Chemical Engineering</b>	1	2	0	0	0	11**
	<b>Civil Engineering</b>	1	1	0	1	0	7
	<b>Electrical Engineering &amp; Computer Science</b>	1	7	0	13	1	13
	<b>Macromolecular Science</b>	1	0	0	4	2	4
	<b>Materials Science &amp; Engineering</b>	0	0	0	3	0	8
	<b>Mechanical and Aerospace Engineering</b>	1	2	0	1	1	11***
<b>Total AY 05-06</b>		<b>7 (27%)</b>	<b>19 (73%)</b>	<b>2 (7%)</b>	<b>26 (93%)</b>	<b>4 (6%)</b>	<b>60 (94%)</b>
<b>Total AY 04-05</b>		6 (29%)	15 (71%)	3 (10%)	26 (90%)	3 (5%)	58 (95%)
<b>Total AY 03-04</b>		4 (27%)	11 (73%)	2 (6%)	27 (93%)	3 (5%)	60 (95%)
<b>Management</b>	<b>Economics</b>	1	3	1	3	1	4
	<b>Management Info.</b>	1	1	1	1	0	3
	<b>Operations Research</b>	2	0	0	5	0	3***
	<b>Organizational Behavior</b>	1	1	2	1	0	4***
	<b>MAPS</b>	2	1	0	4	0	6**
<b>Total AY 05-06</b>		<b>7 (54%)</b>	<b>6 (46%)</b>	<b>4 (22%)</b>	<b>14 (78%)</b>	<b>1 (5%)</b>	<b>20 (95%)</b>
<b>Total AY 04-05</b>		8 (50%)	8 (50%)	5 (24%)	16 (76%)	1 (4%)	22 (96%)

		)					
<b>Total AY 03-04</b>		9 (41%)	13 (59%)	5 (26%)	14 (74%)	1 (4%)	25 (96%)
<b>Medicine</b>	<b>Anatomy</b>	1	5	1	3	1	2
	<b>Biochemistry</b>	0	4	1	3	0	8
	<b>Genetics</b>	3	5	1	3	1	5
	<b>Microbiology</b>	1	4	1	1	1	2
	<b>Neurosciences</b>	1	2	1	3	2	7
	<b>Pharmacology</b>	3	2	0	2	2	4
	<b>Physiology &amp; Biophysics</b>	0	7	0	4	1	9
	<b>RNA</b>	1	2	1	2	0	2
<b>Total AY 05-06</b>		<b>10 (24%)</b>	<b>31 (76%)</b>	<b>6 (22%)</b>	<b>21 (78%)</b>	<b>8 (17%)</b>	<b>39 (83%)</b>
<b>Total AY 04-05</b>		10 (29%)	25 (71%)	7 (23%)	24 (77%)	9 (19%)	39 (81%)
		)					
<b>Total AY 03-04</b>		5 (19%)	21 (81%)	8 (24%)	26 (76%)	8 (19%)	35 (81%)
<b>Overall AY 05-06</b>		<b>35 (33%)</b>	<b>72 (67%)</b>	<b>19 (20%)</b>	<b>74 (80%)</b>	<b>26 (13%)</b>	<b>181 (87%)</b>
<b>Overall AY 04-05</b>		36 (37%)	62 (63%)	20 (20%)	82 (80%)	26 (12%)	185 (88%)
		)					
<b>Overall AY 03-04</b>		30 (33%)	61 (67%)	20 (19%)	84 (81%)	22 (11%)	181 (89%)

Source: Institutional Research, Human Resources, Office of the Provost

\* Includes faculty present on the last day of the Academic Year, June 30, 2006

\*\* Includes a dean

\*\*\* Includes one tenured professor who is currently half-time

Based on a faculty ratio of 20% women (80 out of 409) and 80% (329 out of 409) men full-time tenure-track faculty in Science and Engineering departments, women are overrepresented at the Assistant Professor rank (33%), at the appropriate proportion at Associate Professor level (20%), and underrepresented in the Professor rank (13%). The School of Management has the smallest percentage of full professors who are women (only 5%), and Arts & Sciences departments have the most (17% of their full professors). The number of female tenure-track faculty remains at 20% (80 this year and 82 last year), higher than the baseline year of 18% (72).

### Tenure-track Status

(F. # and % of women in non-tenure-track positions – teaching and research)

S&E Tenure-track Status	Tenured	In Tenure Track	Total (Tenured + In Tenure Track)	Non-Tenure Track
<b>Female</b>	41 (15%)	39 (32%)	80 (20%)	17 (42.5%)
<b>Male</b>	239 (85%)	82 (68%)	321 (80%)	23 (57.5%)
<b>Total</b>	<b>280</b>	<b>121</b>	<b>401</b>	<b>40</b>

Of the 97 full-time women faculty in S&E, 82.5% (80 out of 97) are in tenured or tenure-track positions and 17.5% (17 out of 97) are in non-tenure track, whereas 93% (321 out of 344) of full-

time men are in tenured or tenure-track positions, and 7% (23 out of 344) are in non-tenure track. Women are overrepresented in non-tenure track full-time S&E positions, making up 42.5% of them, compared to their 22% prevalence in the full time S&E faculty positions as a whole. 85% of tenured positions in S&E are held by men, and 68% of untenured, tenure-track positions are held by men.

### Promotion and Tenure Information for AY 2005-2006

#### (C. Tenure promotion outcome by gender)

Tenure Awards	S&E Departments	Other University Depts.	Total
Female	2 (18%)	8 (53%)	10 (38%)
Male	9 (82%)	7 (47%)	16 (62%)
<b>Total</b>	<b>11 (42%)</b>	<b>15 (58%)</b>	<b>26</b>

Source: Office of the Provost

Tenure Denials	S&E Departments	Other University Depts.	Total
Female	2	0	2 (67%)
Male	0	1	1 (33%)
<b>Total</b>	<b>2 (67%)</b>	<b>1 (33%)</b>	<b>3</b>

Source: Office of the Provost

Across the whole university, a total of 12 women (41%) and 17 men (59%) were considered for tenure. Of these 29 faculty members, there were 26 successful candidacies for tenure, 16 men (62% of all tenure awards), and 10 women (38% of all tenure awards). Of all candidacies, 94% of men who were up for tenure were awarded it (16 out of 17), whereas 83% of women up for tenure were awarded it (10 out of 12). For S&E departments, 4 women faculty (31%) and 9 male faculty (69%) were up for tenure. In S&E Departments, 18% of tenure awards were women, and 82% were men. Of S&E faculty, 50% of women who were up for tenure received it, and 100% of men.

Promoted to Tenured Full Professor	S&E Departments	Other University Depts.	Total
Female	1 (20%)	6 (50%)	7 (41%)
Male	4 (80%)	6 (50%)	10 (59%)
<b>Total</b>	<b>5</b>	<b>12</b>	<b>17</b>

Source: Office of the Provost

Denied Promotion to Tenured Full Professor	S&E Departments	Other University Depts.	Total
Female	0 (0%)	2 (67%)	2 (33%)
Male	3 (100%)	1 (33%)	4 (67%)

<b>Total</b>	<b>3</b>	<b>3</b>	<b>6</b>
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Source: Office of the Provost

Of all 23 tenure-track faculty reviewed for promotion to full professor in the university as a whole, 9 were women (39%) and 14 were men (61%). Two women (22% of all women reviewed) and four men (29% of all men reviewed) were denied promotion. For S&E faculty, 1 woman (12.5% of S&E reviewed) and 7 men (87.5% of S&E reviewed) were considered for promotion to full professor. 57% of men in S&E departments who were reviewed for promotion were promoted, and the one woman who went up for full professor was promoted (100%).

### Attrition Statistics

(E. Time at institution and attrition by gender)

Attrition*	University	Average Yrs at Institution	S&E Departments	Average Yrs at Institution
<b>Female</b>	8 (28%)	5.94	6 (30%)	6.5
<b>Male</b>	21 (72%)	13.71	14 (70%)	15.53
<b>Total</b>	29		20	

Source: Institutional Research

\*These data do not include the School of Medicine, who have not reported faculty departures for AY 2005-2006.

S&E Departures AY 05-06	N	Female	Male
<b>Retired</b>	3	0	3
<b>Resign</b>	17	6	11
<b>Total</b>	20		
<b>Instructor</b>	--	--	--
<b>Assistant Professor</b>	8	4	4
<b>Associate Professor</b>	4	0	4
<b>Professor</b>	8	2	6
<b>Total</b>	20	6	14
<b>Average Yrs at Current Rank</b>	9.04	4.5	10.99
<b>Average Yrs at Institution</b>	12.82	6.5	15.53

Source: Institutional Research

\*These data do not include the School of Medicine, who have not reported faculty departures for AY 2005-2006.

For the university as a whole, 8 female faculty and 21 male faculty left the university. Men constituted a larger percentage (72%) of faculty leaving the university than did women (28%). By examining the percentage of women faculty and the percentage of men faculty who leave

compared to their risk for inclusion, we can make a more meaningful comparison of rates of departure. Calculating percentages based on persons at risk for inclusion in the numerator results in an attrition rate for full-time women at the university of 2% (8/460) and a rate of 2% (21/888) for men. For Science & Engineering faculty, it reveals a higher rate of attrition for women in S&E (6/97 = 6%) than for men (14/344 = 4%). If we recalculate the S&E numbers excluding faculty from the School of Medicine, for whom we have no information about departures (subtracting 113 from the denominator for S&E men and 38 for S&E women) the attrition rate for women in S&E is 10% (6/59) and for men it is 6% (14/231). As seen in the table below, of the retirements that make up 15% of S&E attrition, 100% of these retirements were men, which leads to a higher average number of years at the university and in rank. Of the women who left, 100% of them resigned, after an average of 6.5 years at the university and 4.5 years in their present rank.

### Greater Representation of Women in Leadership Positions

The data for endowed chairs, promotion and tenure Committee participation, and administrative positions have been combined into a leadership table that appears below.

<b>S&amp;E Leadership</b>	<b>Named Chair AY 05-06</b>	<b>Named Chair AY 04-05</b>	<b>Named Chair AY 03-04</b>	<b>Dept. P&amp;T Committee*</b>	<b>Administrative Position*</b>
<b>Female</b>	<b>12 (19%)</b>	9 (14%)	8 (14%)	6 (32%)	5 (12%)
<b>Male</b>	<b>50 (81%)</b>	54 (86%)	49 (86%)	13 (68%)	38 (88%)
<b>Total</b>	<b>62</b>	63	57	<b>19</b>	<b>43</b>

*Source: Office of the Provost, Individual Schools*

\*P&T and administrative numbers do not include medical school departments, whose data were incomplete at the time of this report

#### **Endowed Chairs/Professorships**

*(H. # and % of women S&E faculty in named chairs)*

19% (12 out of 62) of all S&E named chairs are women, compared with 81% (50 out of 62) of chairs who are men. This is an increase in women named chairs over year two (14%) and year one (14%). Of the full time, university paid, tenure-track women faculty in S&E departments, 15% are named chairs (12 out of 80), compared with 16% (50 out of 321) of all tenure-track S&E men.

#### **Participation in Promotion and Tenure Committees**

*(I. # and % of women S&E faculty on promotion and tenure committees)*

32% of P&T committee members (6 out of 19) in Arts & Sciences, Engineering, and Management combined are women, and 68% are men.

#### **Administrative Positions**

*(G. # of women scientists and engineers in administrative positions)*

12% of S&E administrative positions (5 out of 43) such as chairs, deans, associate deans, and center directors are filled by women, whereas 88% of these positions (38 out of 43) in S&E are filled by men.

*Equitable Allocation of Resources*

**Compensation**

*(J. Salary of S&E faculty by gender, controlling for dept. rank, and years in rank)*

Since salary information is held confidential in our private university, and often the number of women in a department is small (i.e., 1 or 2), by reporting this indicator (with appropriate controls) we may inadvertently reveal the salary paid to a female faculty member. Thus we have chosen to report this information for now by school only.

Salary, standardized to a 9 month scale

<b>Salary 05-06*</b>		<b>F</b>	<b>M</b>
<b>Arts &amp; Sciences</b>	<b>Instructor</b>	--	\$56,492
	<b>Assistant Professor</b>	\$58,910	\$57,720
	<b>Associate Professor</b>	\$64,667	\$62,570
	<b>Professor</b>	\$89,249	\$95,175
<b>Engineering</b>	<b>Instructor</b>	--	--
	<b>Assistant Professor</b>	\$75,093	\$77,281
	<b>Associate Professor</b>	\$76,500	\$84,623
	<b>Professor</b>	\$116,851	\$117,931
<b>Management</b>	<b>Instructor</b>	--	--
	<b>Assistant Professor</b>	--	--
	<b>Associate Professor</b>	--	--
	<b>Professor</b>	--	--
<b>Medicine</b>	<b>Instructor</b>	--	--
	<b>Assistant Professor</b>	--	--
	<b>Associate Professor</b>	--	--
	<b>Professor</b>	--	--
<b>All Schools</b>	<b>Instructor</b>	--	--
	<b>Assistant Professor</b>	--	--
	<b>Associate Professor</b>	--	--

	<b>Professor</b>	--	--
<b>Combined Ranks</b>		--	--

\* Due to administrative changes at Case in the budget office, we were unable to get a salary dataset of high enough quality to report for the schools of Management and Medicine. Therefore, we are in the process of cleaning and correcting errors in the current database and will report these numbers in the future. As an alternate snapshot of the salary situation at Case, we have included an analysis of AAUP salary data for the entire university (see below).

## Other Data Collection and Analyses

### *Faculty Salary Comparisons between Case Western Reserve University and Its Peer Schools for 2004-06*

The ACES research and evaluation team performed a salary analysis of faculty at Case and its peer institutions, including Carnegie Mellon, Dartmouth, Duke, Georgia Tech, Johns Hopkins, Northwestern, NYU, Rochester, Vanderbilt, and Washington University in St. Louis.

The data were obtained from the “Annual Report on the Economic Status of the Profession” published by the American Academy of University Professors in academic years 2004-05 and 2005-06.

The analysis compared the average salary of male and female faculty by rank at each institution, and the changes in faculty salary from 2004-05 to 2005-06 at each rank by gender (see “Salary Comparisons by Gender and Rank among Case and Peer Institutions” provided in an appendix that can be found here:

[http://www.case.edu/admin/aces/report/Year3\\_AnnualReportAppendix\\_AAUPSalaryComparison-June06.pdf](http://www.case.edu/admin/aces/report/Year3_AnnualReportAppendix_AAUPSalaryComparison-June06.pdf)

Based on the data, three main conclusions emerge:

1. Like most (but not all) of our peer institutions, female faculty at all levels (assistant, associate, and professor) are paid less than male faculty.
2. Among our peer institutions, Case ranks the lowest (11 out of 11) for average 2005-06 salary of female professors, 10 out of 11 for average salary of female associate professors, and 11 out of 11 for female assistant professors.
3. At Case, between 2004-05 and 2005-06, average salaries rose for male professors but fell for female professors, rose for male associate professors but remained constant for female associate professors, and fell for both male and female assistant professors. This pattern did not occur at other peer institutions.

Implications of the analysis were:

- (1) Perceptions of a chilly campus climate for women faculty may be exacerbated by:
  - Inequities between average salaries of male and female faculty at all levels
  - Inequities in salary raises
  - Inequities in hiring salaries at senior faculty levels

(2) Low salaries may be particularly problematic for the recruitment and retention of talented women faculty, especially in S&E, at Case

### ***Offer Letter Analysis***

We have prepared report summarizes ongoing findings from 2005-2006 in our 5-year study of initial resources provided to new faculty. These data are obtained from 19 offer letters to incoming faculty of ACES departments, collected over 18 months. Some offer letters were not available at the time of this report but will be added to the analysis in the next few weeks. In addition to descriptive statistical analyses of these data and tracking of non-financial resources, an analysis of the language of the offer letters was conducted. Implications for analysis of data collected in years 4-5 are also provided. The report is at the end of this document as Appendix II.

In addition to the offer letter analysis, we are establishing a list of “best practices” that we have observed thus far in our set of offer letters (N = 68 letters, from 22 departments). The document is being written primarily to assist deans and department chairs in preparing their offer letters. We believe, however, that adoption of these guidelines by the Case community also has the potential to address two important issues: it will make the close of the search process more effective while at the same time providing clear expectations for both the new faculty member and her/his departmental administrator, thus promoting a welcoming culture while potentially reducing future problems. The report can be found here:

[http://www.case.edu/admin/aces/report/Year3\\_AnnualReportAppendix\\_Elementsofofferletters.pdf](http://www.case.edu/admin/aces/report/Year3_AnnualReportAppendix_Elementsofofferletters.pdf)

### ***COACHE***

During Spring 2006, the ACES group administered a climate survey of junior faculty (untenured) through the Harvard School of Education’s COACHE survey. This climate survey contributes to our larger goals of reducing the attrition rates and actively monitoring and improving the climate for women faculty and faculty of color.

Results of the COACHE climate survey of early-career faculty can be found here:

[http://www.case.edu/admin/aces/report/Year3\\_Annual\\_Report\\_Appendix\\_COACHE.pdf](http://www.case.edu/admin/aces/report/Year3_Annual_Report_Appendix_COACHE.pdf)

### ***Second-year Faculty Survey***

We also conducted a survey of second year faculty through the Office of Equal Opportunity and Diversity. The purpose of the climate survey of early career faculty members at Case was to identify the successes and challenges that new faculty (including women and minority faculty) face at our institution.

Results of the Second-year Case Faculty Survey can be found here:

[http://www.case.edu/admin/aces/report/Year\\_3\\_Annual\\_Report\\_Appendix\\_Case\\_New\\_Faculty\\_Survey.pdf](http://www.case.edu/admin/aces/report/Year_3_Annual_Report_Appendix_Case_New_Faculty_Survey.pdf)

### ***Exit Survey***

After piloting the instrument last year, this academic year (05-06) is the first year we have implemented the final institutionalized faculty exit survey through the Faculty Diversity Office. Some very preliminary results can be found here:

[http://www.case.edu/admin/aces/report/Year 3 Annual Report Appendix Exit Survey Summary\\_no\\_open\\_ended.pdf](http://www.case.edu/admin/aces/report/Year_3_Annual_Report_Appendix_Exit_Survey_Summary_no_open_ended.pdf)

### ***Coaching Update***

We have included an update on the coaching progress, including pre and post questionnaire results, new participant information, coach evaluations and comments from participants. This information can be found here:

[http://www.case.edu/admin/aces/report/Year 3 Annual Report Appendix coaching update.pdf](http://www.case.edu/admin/aces/report/Year_3_Annual_Report_Appendix_coaching_update.pdf)

### ***Mentoring Program***

We now have a coordinator for the mentoring program, who is responsible for organizing and facilitating mentoring activities as well and monitoring and evaluating the success of the program. A summary of the ongoing activities of the Mentoring Coordinator can be found here:

[http://www.case.edu/admin/aces/report/Year 3 Annual Report Appendix Mentoring Evaluation.pdf](http://www.case.edu/admin/aces/report/Year_3_Annual_Report_Appendix_Mentoring_Evaluation.pdf)

### **Research and Evaluation Plan for Year 4 (2006-2007)**

(1) 8 departments worked with during January – December 2006:

- Administration of post-intervention evaluations for all interventions as a group (comparisons with baseline data for women faculty and chairs) – January 2007
- Administration of end-intervention evaluation of coaching (women faculty and chairs) – January-February 2007

(2) Remaining (new) 9 departments to be worked with during January-December 2007

- Administration of baseline (pre-interventions) data collection instrument (women faculty and chairs) – December 2006
- Administration of post-intervention evaluations for all interventions as a group (comparisons with baseline data for women faculty and chairs) – January 2008
- Administration of end-intervention evaluation of coaching (women faculty, chairs, deans, provosts) – January-February 2008

(3) Event evaluations: As Occurring

- Evaluations of specific ACES events (e.g., Provost's retreat, networking seminars, mentoring workshops)

(4) Start-up Packages (Analysis of Offer Letters) – Summer 2007

- Like last year, we will review and analyze the start-up packages/offer letters of all 2006-07 incoming faculty by rank and gender.

(5) Salary Analysis – Summer and Fall 2006, Spring 2007

- We obtained data for the salary and survival study in April 2006 from the HR and Institutional Research staff. However the data is in extremely poor shape. Professor Nahida Gordon, of the ACES Research and Evaluation Team, will be leading the clean-up and analysis of the data. We will assess salary equity, which will involve a multivariate analysis of possible gender bias in current rank and in faculty salaries. The methodological approach outlined in *Paychecks: A Guide to Conducting Salary-Equity Studies for Higher Education Faculty* (2<sup>nd</sup> edition, 2002) developed by the American Association of University Professors will be employed for this purpose. The Paychecks protocol recommends two separate analyses: (1) a multiple regression analysis of salary data for the total population of faculty and (2) a categorical modeling or event history analysis of academic rank. Understanding potential gender bias in academic rank is necessary in interpreting the results of salary estimation equations that incorporate rank as a predictor variable. As the authors emphasize, if gender differences in both current rank and time to promotion are the result of discrimination, including rank in equations predicting salary can underestimate the extent of bias. Using the Paychecks methodology will enhance the comparability of results at Case with those of comparable institutions. During 2006-07, there will be a focus on replicating the analyses outlined in the Paychecks guide, including the list of recommended variables and addressing distributional and other complexities the Paychecks' authors raise. On the basis of these initial results, of the insights drawn from the qualitative data analysis, and of suggestions from published research and reports from other ADVANCE institutions, we will also begin developing a causal model of salary determination of faculty at Case. This hypothesized causal model will guide continued quantitative data collection and analysis in subsequent years. The ultimate goal of this study is to estimate the coefficients in our elaborated model using structural-equation modeling techniques.

(6) Survival Analysis – Fall 2006/Spring 2007

- Analysis of the survival rate of faculty members will also be undertaken. This longitudinal analysis (over a 10 year period) utilizes data about the presence/absence of each faculty member, their rank, and gender. It will allow us to draw conclusions about whether women are disproportionately leaving the system or being disproportionately held in rank compared with men.

(7) Exit Interviews – Spring 2007

- We will continue to administer the exit survey designed, piloted and implemented in 2005 and 2006. The information will be used by the Faculty Diversity Office to identify areas for improvement and trends in attrition.

(8) Evaluation of ADVANCE Opportunity Grants – Summer 2007.

- During Summer 2006, we conducted interviews with recipients of ACES Opportunity Grants from previous years (2004-2005) to determine the benefits offered by this resource. Next year we will undertake interviews of the 2006 grantees.

(9) Evaluation of Candidate Pools for Faculty Searches – Summer and Fall 2006

- We are undertaking an evaluation of whether faculty search candidate pools have diversified subsequent to the introduction of ACES. Through ACES we have institutionalized protocols for search committees to document their efforts at candidate pool expansion, increased the accountability of deans, chairs and search committees in candidate pool composition, undertaken search committee training, and implemented ACES leadership development coaching of chairs. We now want to determine if our ACES interventions have collectively resulted in improvements in the candidate pools regarding inclusion of women and

minorities. Currently our data consist of hand-written records in the Office of Faculty Diversity, which we intend to analyze to answer this question.

A listing of ACES past, current and upcoming research projects that summarizes our research plans (studies, publications, and presentations) for the next year can be found here:

[http://www.case.edu/admin/aces/report/Year3\\_AnnualReportAppendix\\_ACESresearchsummary.pdf](http://www.case.edu/admin/aces/report/Year3_AnnualReportAppendix_ACESresearchsummary.pdf)

## Appendix I: Things That Work

### NSF-ACES Provost's Leadership Retreat – Things That Work! Friday 18 November 2005

#### GOALS

1. Provide a forum for ongoing leadership development of key change agents in the institution.
2. Broaden awareness of the positive change efforts underway at Case.
3. Catalyze leadership at all levels of the institution: department, school/college, and university
4. Enhance the institutional networks of participants.

#### RETREAT SCHEDULE

12:00 – 1:15 p.m.	Lunch at Glidden House
1:30 – 5:30 p.m.	Meeting, Room 103, Peter B. Lewis Building
5:30 – 6:30 p.m.	Cocktails

#### AGENDA

12:00-1:15	Welcome and Introductions	Lynn Singer, <i>ACES Principal Investigator, Deputy Provost, and Vice President for Academic Programs</i> Edward M. Hundert, M.D., <i>President</i> John Anderson, <i>Provost and University Vice President</i>
	Things That Work for Cultural Transformation	Riane Eisler
1:30-2:45	Things That Work for Improving Climate	Beth McGee, <i>Faculty Affirmative Action Officer and Associate Professor, Theater and Dance</i> CRLT Players, <i>University of Michigan</i>
2:45-3:00	Break and Poster Session	
3:00-3:15	Break	Refreshments
3:15-3:45	Things That Work for Academic Leaders	Peter Pintauro, <i>Chair, Chemical Engineering</i> Cyrus Taylor, <i>Chair, Physics</i>
3:45-4:15	Things That Work for Departmental Success at Case	John Anderson Diana Bilimoria, <i>ACES co-Principal Investigator and Associate Professor, Organizational Behavior</i> Diana Kunze, <i>Professor, Neurosciences</i>
4:15-5:00	Case Study Discussion	Resource Equity Committee: Diana Bilimoria Cyrus Taylor, <i>Chair, Physics</i>
5:00-5:30	Next Steps	Lynn Singer



NSF ADVANCE  
ACES Program

**Appendix II: Start-Up Offer Report: 2005-2006**

Introduction

This report summarizes ongoing findings from 2005-2006 in our 5-year study of initial resources provided to new faculty. These data are obtained from 19 offer letters to incoming faculty of ACES departments, collected over 18 months. Some offer letters were not available at the time of this report but will be added to the analysis in the next few weeks. In addition to descriptive statistical analyses of these data and tracking of non-financial resources, an analysis of the language of the offer letters was conducted. Implications for analysis of data collected in years 4-5 are provided.

University Context in AY 2005-06

This past academic year has been a period of major transitions and challenges for Case Western Reserve University. In February, faculty from the College of Arts & Sciences voted 131/44 in favor of no confidence in the leadership of University President Edward Hundert. Subsequently, he abruptly resigned and has been replaced as of June 1, 2006 by Interim President Gregory Eastwood. The no-confidence vote was precipitated in part because of chronic, pervasive and increasing budgetary difficulties experienced by the four major university schools and central administration which led to two separate budgetary rescissions resulting in significant staff layoffs. Although faculty salaries were not cut, raises were minimal if they occurred, and many program initiatives were curtailed. In effect, during much of the year, the attention of the board of trustees, administration, and faculty of the university was preoccupied with budgetary and fiscal management issues of immediate concern to the campus. We believe that all of these factors are reflected in this year's analysis. Yet despite the political turmoil and financial struggles, individual departments pursued their hiring plans and in fact, \$200,000 was pledged in Provost Opportunity Funds to one faculty member in an ADVANCE department, indicating the central administration's support for critical faculty hires. The Provost Opportunity Funds are reflected in the Start Up package.

## Methods

This data set includes 19 offer letters from ACES departments that were hiring new faculty during January 2005 through June 2006. All four schools participating in the ACES program are represented by our sample (Arts & Sciences [A&S], Weatherhead School of Management [WSOM], the School of Medicine [SOM], and Case School of Engineering [CSE]). Letters were obtained from the Provost's Office in a span of 18 months (Jan 2005 – June 2006). The Provost released only those letters describing offers that were accepted.

As the sample size increases in the following years, complex analyses will become more meaningful. Consistent with our previous report, we have employed descriptive statistics, the same methodology as the University of Wisconsin, the University of Washington, and New Mexico State University. In addition to descriptive statistics, the content and language of the letters was considered. Findings from both the quantitative and qualitative analyses are presented in this summary report.

## Findings

The year 3 findings are presented in aggregate, grouping the sample by gender, school, and rank. In contrast to the year 1 report, no senior faculty hiring information was available as of June 30, 2006; therefore, results are presented for junior faculty (instructors and assistant professors) only. Even though we made several efforts to obtain all offer letters, this year presented special challenges in obtaining letters due to an unusual number of staff layoffs and changes in the Provost's Office. For that reason, we consider the analysis ongoing and will include any additional letters in future analyses. Results are presented in the following sections:

1. *Faculty hired:* reported by gender, rank, and school and provides percentages of faculty offered tenure-track positions (see Table 1).
  - Five of the 19 hires (26%) were women.
  - Three of the 19 hires were at the instructor level (1 woman, 2 men); 16 were at the assistant professor level.
  - Fewer women were offered tenure track positions (80% vs. 86% of men).
2. *Base institutional salary:* Academic year salary is reported; summer salary is not included (see Table 2).
  - The base annual salary varied remarkably according to school. The mean salary for women was 62-98% that of the mean salary for men.

3. *Base start-up amount*: this is the generic start-up amount specified in the start up letter. This amount does not include base institutional salary, summer salary, or any additional funds specified as travel, equipment, research personnel, signing bonus, or funds associated with named professorships.

Ranges of start-up amounts are presented in Table 3, yet not all faculty were offered such funds. The range of start-up amount varied remarkably according to school.

4. *Combined total package*: calculates all funding mentioned in letter, to include base institutional salary, summer salary (as calculated by months of contract and annual salary), the base start-up amount, and amount of additional funds (see Table 4).

- Across ranks, incoming female faculty (N=5) received a mean combined total offer that is 64% that offered to incoming male faculty (N=14).
5. *Language differences*: an analysis of the language of the offer letters was conducted. Among the 19 letters, two distinct types of letters emerged: standardized letters and personalized letters.
- Standardized letters are authored by school deans, are generally limited to one page, and include details pertaining to base institutional salary, start-up amount, and perfunctory communication of hiring policies, such moving expenses and required completion of citizenship forms.
  - Personalized letters, authored by department chairs (copying in school deans) are generally 2 or more pages in length. These letters contain the requisite financial and hiring policy information of base salary, start-up amounts, and necessary documents needed by HR. Where the personalized letters differ from standardized offer letters is through the inclusion of additional information and an overall encouraging tone. Typical to personalized offer letters are statements about the department culture, potential research collaborations for the new faculty member, description of mentoring relationships in the department, and expectations of the new faculty member.

**Table 1. Faculty Hired**  
ACES Departments (1/2005 – 6/2006)

<b>JUNIOR FACULTY: Instructors &amp; Assistant Profs.</b>							
School	<b>Hired</b>			<b>Tenure Track Positions Offered</b>			
	Women	Men	% Women	Women	Men	% Tenure Track Women	% Tenure Track Men
Arts & Sciences	2	7	22%	2	7	100%	100%
Engineering	0	3	0%	0	3	0%	100%
Management	2	2	50%	2	0	100%	0%
Medical	1	2	33%	0	2	0%	100%
<b>TOTAL (N=19)</b>	<b>5</b>	<b>14</b>	<b>26%</b>	<b>4</b>	<b>12</b>	<b>80%</b>	<b>86%</b>

**Table 2. Base Institutional Salary**  
ACES Departments (1/2005 – 6/2006)

<b>JUNIOR FACULTY: Instructors &amp; Assistant Profs.</b>										
School	<b>Women</b>				<b>Men</b>				Women's Mean as a % of Men's Mean	Women's Median as a % of Men's Median
	N	Mean	Median	Range	N	Mean	Median	Range		
Arts & Sciences	2	\$54,000	\$54,000	\$53,000-55,000	7	\$57,200	\$58,000	\$50,000-63,000	94%	93%
Engineering	0	N/A	N/A	N/A	3	\$72,833	\$74,000	\$70,000-74,500	N/A	N/A
Management	2	\$100,000	\$100,000	\$95,000-105,000	2	\$102,500	\$102,500	\$95,000-110,000	98%	98%
Medical	1	\$45,000	\$45,000	N/A	2	\$72,500	\$72,500	\$70,000-75,000	62%	62%
<b>TOTAL (N=19)</b>	<b>5</b>				<b>14</b>					

**Table 3. Base Start-Up Amount**  
ACES Departments (1/2005 – 6/2006)

<b>JUNIOR START-UP PACKAGES: Instructors &amp; Assistant Profs.</b>										
School	<b>Women</b>				<b>Men</b>				Women's Mean as a % Of Men's Mean	Women's Median as a % Of Men's Median
	N	Mean	Median	Range	N	Mean	Median	Range		
Arts & Sciences	2	\$76,500	\$76,500	\$3,000-\$150,000	7	\$49,977	\$22,840	\$8,000-\$225,000	153%	335%
Engineering	0	N/A	N/A	N/A	3	\$337,667	\$400,000	\$113,000-\$500,000	N/A	N/A
Management	2	\$32,500	\$32,500	\$30,000-\$35,000	2	\$20,000	\$20,000	\$10,000-\$30,000	163%	163%
Medical	1	\$0	\$0	\$0	2	\$350,000	\$350,000	\$300,000-\$400,000	N/A	N/A

**Table 4. Combined Total Package**  
ACES Departments (1/2005 – 6/2006)

<b>Junior Combined Total Packages: Instructors &amp; Assistant Profs.</b>								
School	<b>Women</b>			<b>Men</b>			Women's Mean as a % of Men's Mean	Women's Median as a % of Men's Median
	N	Mean	Median	N	Mean	Median		
Arts & Sciences	2	\$142,277	\$142,277	7	\$129,700	\$96,173	110%	148%
Engineering	0	N/A	N/A	3	\$442,925	\$515,888	N/A	N/A
Management	2	\$243,610	\$243,610	2	\$236,389	\$236,389	103%	103%
Medical	1	\$45,000	\$45,000	2	\$422,500	\$422,500	11%	11%
<b>Overall Junior Means</b>		<b>\$163,355</b>			<b>\$253,890</b>		<b>64%</b>	

## **DISCUSSION:**

A limited sample [N=19] size may serve to exaggerate results. Thus, these findings should be taken as points to track for future data collection and analysis.

Regarding allocation of initial resources, this year's data suggest that a fairly varied allocation of resources at the junior level (e.g., base salary, base start-up amounts, and combined total packages) across the four schools/colleges.

In terms of language or tone differences, the personalized letters come from departments that have elsewhere been characterized as successful. Of course correlation does not mean causation, but is a potentially helpful artifact of success that could be used in future research.

Academic start-up offers are idiosyncratic and thus challenging to analyze. Some data items that we know to be important indicators of resources, such as a teaching release or research assistants, and the impact of faculty member negotiation skills proved difficult to quantify.

The findings of this report will be tracked in Years 4-5, establishing whether these patterns of resource allocation exist more broadly, or if this snapshot is unique to the cases included for this year. It is vital, however, that school deans and department chairs are kept aware of the goals and initiatives of ACES and aware of their visibility as participants in this change effort.

Consequently, the recommendation from this year's analysis addresses the format and language of the offer letters in a draft document, *Suggested Elements of Effective Offer Letters* (found here [http://www.case.edu/admin/aces/report/Year3\\_AnnualReportAppendix\\_Elementsofofferletters.pdf](http://www.case.edu/admin/aces/report/Year3_AnnualReportAppendix_Elementsofofferletters.pdf)). The entire database, from 2003-2006 (N=68 letters), was used to develop the recommendations.