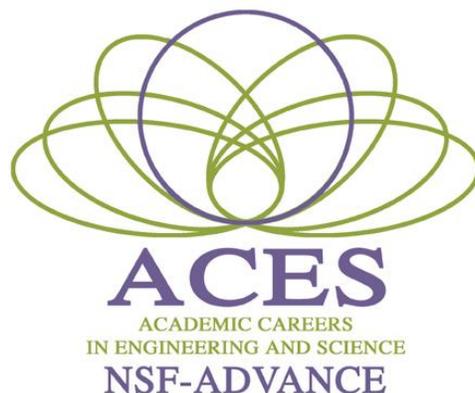


ACADEMIC CAREERS IN ENGINEERING AND SCIENCE  
(ACES PROGRAM)

NSF ADVANCE  
FINAL REPORT  
2003-2008

Case Western Reserve University  
Cleveland, OH



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## SECTION I: STATUS AND OUTCOMES OF PROPOSED ACTIVITIES

### *NEW INITIATIVE PROPOSED*

#### **A. Establish ACES**

The vision for Academic Careers in Engineering and Science (ACES) at Case Western Reserve University was for institutional transformation that would lead to increased transparency and accountability as well as more equitable practices, policies, procedures, and structures and increased participation of women science and engineering (S&E) faculty at all levels and in leadership. Our activities and findings are summarized below and include both successful efforts as well as difficulties experienced in implementing the proposed activities and the approaches created to address them.

During the startup (Phase I), various project staff members were hired including a project coordinator, diversity specialist, senior research associate, office assistant, graduate students, and a webmistress. In January 2004, ACES began operating in the four test departments: Chemistry, College of Arts & Sciences (CAS); Mechanical and Aerospace Engineering, Case School of Engineering (CSE); Organizational Behavior, Weatherhead School of Management (WSOM); and Physiology & Biophysics, School of Medicine (SOM) through implementation of mentoring and professional coaching interventions. An internal advisory committee consisting of female and male faculty members was initiated to review and advise on project elements, and distinguished lectureships and opportunity grants were made available to all original 31 departments. The ACES website was initiated, and training, networking and faculty development activities also began during this phase. A weekly meeting of the ACES Team consisting of PI Dr. Lynn Singer, Co-PI's Drs. Mary Barkley, Diana Bilimoria and John Angus, and project staff was initiated in this phase and continued throughout the duration of the award. Initial baseline data collection in the test departments were started in this phase.

Phase II of implementation began in January of 2005 due to the exceptional response in both the test departments and the other 27 remaining departments. The ten departments chosen to participate in Phase II were suggested by the deans of the four schools. These departments, who then received the mentoring and coaching interventions, were: 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). During Phase II, key institutional personnel (e.g., Director of the Flora Stone Mather Center for Women, the Faculty Diversity Officer, and members of the Resource Equity Committee) joined the weekly ACES Team meeting, which continued throughout the duration of the award.

In January 2006, (Phase III) ACES interventions were offered to an additional eight departments, chosen by the ACES steering committee based on balancing the number of women faculty who would participate in the ongoing initiatives. Those departments were: Physics, and Psychology (CAS); Macromolecular Science & Engineering and Material Science & Engineering (CSE); Genetics and Pharmacology (SOM); and Economics and Operations Research (WSOM).

Phase IV began in January 2007 when the ACES interventions were offered to the remaining ACES Departments: Astronomy, Biology, Sociology and Statistics (CAS); Civil Engineering (CSE); Anatomy, Neuroscience and Center for RNA (SOM); and Information Systems (WSOM). This final phase also included a newly created department, Cognitive Sciences (CAS), and any women faculty or department chairs newly hired into departments which had previously participated in ACES interventions.

## **B. Departmental and College/School Presentations**

An ACES overview presentation, which explained ADVANCE, the national research on women in S&E, the situation at CWRU and the ACES initiatives was given by Interim Provost Lynn Singer to deans and chairs of the four participating schools in Spring 2004 accompanied by one or more of the Co-PI's (Drs. Diana Bilimoria, Mary Barkley, and John Angus), and several other ACES Team members: Drs. P. Hunter Peckham, Beth McGee, Dorothy Miller, Patricia Higgins, Cyrus Taylor, Eleanor Stoller and Ms. Amanda Shaffer, Diversity Specialist. The overview was then presented to the four test departments and included additional information about what to expect during their ACES year, the 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 strived to ensure buy-in and signal the importance of the ACES activities, often led to spirited discussions within the department about some of the underlying philosophies of the department.

One of the concerns early on was that male faculty and chairs of the test departments were cautious, in part because of many transitions/uncertainty in the larger university, in part because they were very busy, and in part because many activities focused specifically on women's advancement and retention. These concerns were addressed through open communication and the development of a packet of information specifically for male faculty members outlining which of the ACES initiatives could be accessed by them and how the success of the program impacted the culture of the entire university.

The PI and Co-PIs continued the outreach into the new departments in each phase by presenting the ACES overview at faculty meetings prior to beginning the interventions. The presentation was expanded, in part, by Amanda Shaffer who collaborated with internal and external colleagues involved in gender bias training such as Leonora R. Roth, PhD, training and development manager for Energizer Battery Company. Dr. Roth provided a valuable dual perspective as a female graduate of the CWRU program and a female trainer of engineers in industry. Dr. Roth offered insights on her successful training and intervention techniques in an often-hostile environment.

Ongoing communication was maintained with all department chairs, faculty, and department assistants in the ACES departments through the bi-annual ACES Newsletter, regular email updates about distinguished lectureships, networking events, and application deadlines. ACES PI Dr. Lynn Singer presented information and updates about the ACES initiatives at meetings of the Case Board of Trustees, meetings of the Faculty Senate, and at the Deans' Council. Dr. Singer made ACES materials such as newsletters, announcements and brochures available at all of these meetings. ACES Co-PI Dr. Bilimoria gave presentations about ACES initiatives to the WSOM department chairs and associate deans, as well as to the school's faculty.

As part of the outreach, the 31 S&E department chairs were interviewed, beginning with the four test departments, to explain ACES, establish how ACES might assist their department to access and implement the ACES initiatives, and discover what efforts they were already engaged in regarding recruitment and retention of women faculty. During those interviews the Mathematics Department Chair showed interest in efforts that would in his words, "overcome his pocket of resistance", improve the search process and improve the climate in his department. Ms. Shaffer interviewed three department chairs of Math Departments in the 19 ADVANCE institutions to determine uniform procedures as well as the ADVANCE aspects which had proved especially useful in their departments. Interviewees were Trevor Wooley, University of Michigan, Jerry Bona, University of Illinois at Chicago, and James Hirstein, University of Montana. These findings were presented to the CWRU Math Department.

Additional outreach efforts were made in the School of Medicine through collaboration with the Women Faculty of the School of Medicine. Initially Dr. Hue-Lee Kuang, former President of WFSOM arranged a panel discussion for women faculty of the School of Medicine with Dr. Lynn Singer, Dean Ralph Horwitz, Associate Dean Daniel Anker and approximately 30 women faculty. The group discussed the progress of the ACES initiatives and the future of the women faculty in the School of Medicine. The collaboration with the WFSOM continued with distinguished lectureships and ACES updates presented by Dr. Singer at their annual meetings.

### **C. Faculty Search Training**

As members of the ACES Team, Beth McGee, Faculty Diversity Officer, and Amanda Shaffer developed new guidelines for faculty search committees that incorporated best practices from faculty recruitment materials at research universities nation-wide. Based on data provided in one-on-one interviews of ACES department chairs, recommendations were developed regarding procedures for diversifying the candidate pools in faculty searches. These recommendations included accountability on the part of deans and department chairs for efforts to diversify the candidate pool, and more proactive involvement and oversight by the Faculty Diversity Officer. This was partially addressed by the creation of a new step in the Affirmative Action process that requires deans to acknowledge that they approve of the candidate pool. The new guidelines were presented by Dr. Lynn Singer and Beth McGee to the Deans' Council for comment and recommendations, and then presented to Provost John Anderson, who approved them in May 2004.

During the implementation process, presentations were given to various S&E search committees regarding how to diversify an applicant pool. Self-help web tools, Faculty Search Resources, which contained information and links for minority and women's associations for potential advertising and outreach during faculty recruitment, were developed. At this time the first online Affirmative Action Survey for Faculty Candidates was launched as a mechanism to track trends in faculty recruitment, while recognizing that the completion of the survey was and is completely voluntary.

During Fall 2005 the position of Faculty Diversity Specialist was made permanent in the Office of the Provost. At this time the ACES team proposed mandatory attendance at a faculty diversity workshop within the first fiscal year of a faculty hire, and Provost John Anderson mandated this activity. The New Faculty Cultural Competency Training, as it is now called, debuted with 100% compliance in 2005 and has subsequently become an important means of faculty orientation and information dissemination. The mandatory diversity training on campus prior to this mandate was primarily aimed at newly hired staff and research assistants. Amanda Shaffer redesigned the 90-minute interactive presentation to exclusively focus on faculty-specific situations in the department, lab, and classroom. The classes continue as faculty-only sessions, and as of 2006/07, are held twice a year within the first two weeks immediately following the start of the fall and spring semesters.

The new Faculty Search Guidelines were initially presented to department assistants and business managers in the CSE in a training session. The Faculty Search Guidelines were subsequently introduced to the Case School of Medicine in collaboration with Associate Dean of Faculty Affairs, Daniel Anker. During Spring 2005, Amanda Shaffer and Daniel Anker held eight, one-hour meetings with department chairs (Anatomy, Biochemistry, Epidemiology, Genetics, Molecular Biology & Microbiology, Neurosciences, Nutrition, and Pharmacology) to review the new search guidelines, present an overview of ACES, and discuss research on bias and strategies for diversifying the candidate pool. This process continued throughout 2006. In 2006 Patricia Gallagher, Director of Medical Staff Services at MetroHealth Hospital, arranged for the hospital business managers and department assistants to receive the search training provided by Beth McGee and Amanda Shaffer. This review of the search guidelines and the

procedures for diversifying the candidate pool continues annually at MetroHealth. Additional efforts to promote best practices in faculty searches led to quarterly meetings with key diversity personnel at the Cleveland Clinic and MetroHealth Hospital, and the Women Faculty of the School of Medicine through 2006.

Even though the school was not part of the NSF-ACES targeted areas, Dean Jerold Goldberg, of the School of Dental Medicine, scheduled a mandatory meeting of his department chairs at which the search training, guidelines, and relevant research about bias were presented.

The application of the services of the Faculty Diversity Specialist ranged from single, one hour meetings covering the topic, to intensive involvement over time as took place in the Department of Chemistry (an original test department) which engaged Ms. Shaffer over a period of six months to facilitate a more equitable and open search process. Every search initiated in the Department of Chemistry from that point on continues to be launched with a discussion led by Ms. Shaffer regarding diversifying the candidate pool and reducing evaluation bias.

The faculty search committee training continues and has increased in scope each year of the ACES grant. In July 2007, the position of Faculty Diversity Specialist was upgraded to Manager of Faculty Diversity and Development and began to include more specialized departmental interventions such as meeting facilitation, mediations and retreats. The Manager continues to meet with faculty candidates to disseminate information about family friendly policies and answer confidential questions that candidates may have.

#### **D. Professional Coaching**

In 2003 CWRU initiated a five year program of executive coaching, led by Dr. Bilimoria. The CWRU coaching program relied on specially trained professional executive coaches drawn from an extensive network assembled by CWRU's Executive Education Center to develop skills among STEM deans, departmental chairs and women faculty to achieve professional and organizational goals, and to undertake positive change in their respective departments and schools. The CWRU program included 1) executive coaching for individual S&E chairs and deans; 2) performance, career and leadership development coaching for women faculty; and 3) related developmental inputs for all groups such as opportunities for mentoring, networking, development, training, and group facilitation.

An executive coach is someone who has general academic/organizational experience and who provides performance-related and career-related advice. The coach helps the coaching participant 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 6-8 session coaching program for women faculty and an 8-10 session coaching program for deans and chairs. Bi-monthly coaches cohort meetings, which consist of the co-PIs and eight coaches, are conducted to plan and design the coaching template and debrief the coaching activities. Templates for the coaching of department chairs and women faculty were created at the end of the first round of executive coaching (in December 2004), for extension to all S&E departments in Phase II (starting in January 2005). These templates provided the overview, objectives, activities, homework assignments, and follow-up activities of each coaching session (see <http://www.case.edu/admin/aces/coaching.htm>)

#### **Participants**

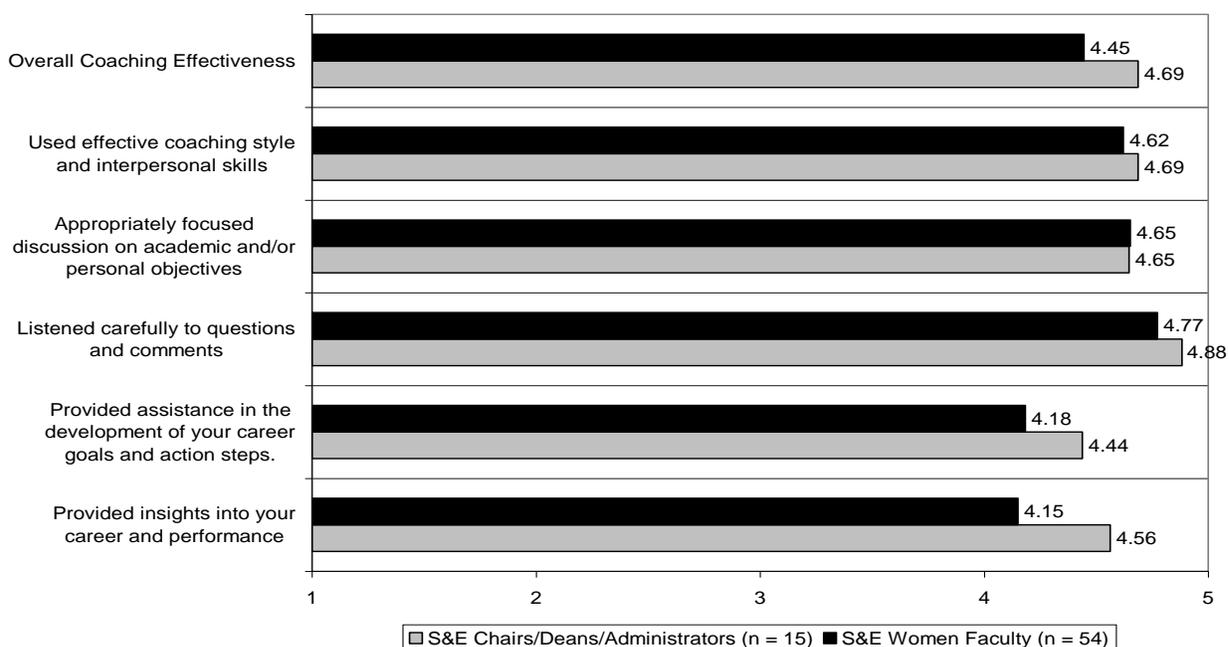
In the five year period, over 20 S&E chairs, 3 S&E deans, 2 associate deans, and 3 deputy/associate provosts and center directors have participated in executive coaching, as have 88 female and 2 minority

male S&E faculty members. By June 2008, 15 chairs/ deans/ administrators and 54 women faculty completed the coaching evaluation forms.

Executive Coaching Evaluation Results

With ratings based on a Likert scale of 1 (poor) to 5 (excellent), the participant evaluations of the different measures were at a median of 4.5 for women faculty, and 4.7 for chairs and administrators (see Figure 1 below). Revealingly, individuals who were skeptical about the coaching program at the outset of their participation highly praised its usefulness at the conclusion. A detailed evaluation report is available at: [www.case.edu/admin/aces/documents/Coaching\\_Eval\\_Summary.pdf](http://www.case.edu/admin/aces/documents/Coaching_Eval_Summary.pdf)

**Figure 1: 2004-2008 Executive Coaching Evaluations of S&E Women Faculty and Chairs/Deans/Admin**



Hotline Coaching

Hotline coaching for women faculty throughout the Case campus was initiated in spring 2006. This service provided a hotline for emergency-type coaching that is available to all campus women faculty on an as-needed basis. Hotline coaching allows women faculty facing unique opportunities and challenges to receive short-term and quick-turnaround coaching advice from a professional executive coach to help them optimally address and resolve the emergent issue, opportunity or problem being faced. During 2006-08, a total of 24 women faculty availed of this opportunity, receiving 1–3 hotline coaching sessions as needed. Issues for which hotline coaching was sought by women faculty included: (1) negotiations with the dean regarding the possibility of departmental chair, (2) salary negotiations (3) assistance with finding a position after a terminal contract, (4) career development assistance with seeking a tenure-track position at CWRU from a non-tenure track position, (5) research funding supervision and budget management issues, (6) work-life integration discussions, and (7) developing better collaboration and interpersonal skills.

The coaches used for Hotline Coaching were the same as those employed in the executive coaching of women faculty in the ACES departments. Typically a coach was assigned and began working with the

hotline coaching requestor within a few days. Participants' evaluations of the ACES Hotline Coaching program were extremely positive.

### **E. Mentoring**

The first phase of the Mentoring program was introduced in January 2004, when 14 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 this initial phase the chairs of the four test departments discussed the selection of the mentors with the women faculty, and then invited the mentees to join the committee for each of the woman faculty members in their department. The mentors chosen had either field-specific or institution-specific experience and expertise that a mentee could draw on for guidance and counsel. It was very rare for a mentor to decline to serve on committee when asked. After the initial committee was set up, the mentees were responsible for driving the process and setting up mentoring committee meetings for facilitation of their career development. The mentoring initiative was designed to be complemented by the executive coaching component and the coaches consistently encouraged women faculty to utilize their mentoring committees as part of their career development plan.

In 2004 and 2005, in an effort to promote best practices, ACES presented two "Successful Mentoring" workshops for both the mentors and the mentees. Informal feedback from the bimonthly networking luncheons with the women faculty in the participating departments indicated that women had positive experiences when they utilized their committees. For example, mentees were invited through their mentor to speak at conferences, and one mentee received advice on her NSF proposal from an external committee member, which resulted in the grant being funded. Even though the committees, when used, were demonstrably successful, there was consistent resistance by the women faculty to the creation and use of the committees.

In addition to the resistance, the mentoring program was difficult to administer. Despite encouragement from the coaches for the women faculty to set up and use their mentoring committees, engaging the participants was labor intensive. A decision was made to try a self-help, online system by creating a mentoring web site with a password protected database. It became apparent very quickly that the database was proving to be underutilized, so the structure of the mentoring program was refocused at the annual ACES team retreat. This resulted in Verena Murphy, a graduate student in Organizational Behavior, being appointed as the Mentoring Evaluator in Summer 2005. Her charge was to interview faculty who were eligible for mentoring committees or who had already set these up. Dr. Murphy conducted 29 evaluation interviews during fall 2005 regarding their mentoring experiences and plans for career development. Dr. Murphy reported that the women faculty felt that they receive adequate, although informal, mentoring mostly from their peers, initiated through personal contacts, and not part of a formalized structure. The existing climate in the departments supported an informal mentoring structure, rather than the committee structure ACES was attempting to put in place for women faculty. In those departments where a formal structure existed, it was often not implemented, or not consistently.

The challenges of the mentoring program in the initial phases included persuading women faculty to recognize the usefulness of a formal mentoring structure, reluctance to optimally utilize their networks and mentors, and to take responsibility to proactively drive the process of receiving the mentoring needed. Some women faculty also could not find suitable male department colleagues to serve as mentors.

In response to the evidence that informal mentoring was preferred, ACES piloted a variety of more informal mentoring initiatives which began in Year 4. These included discussions among tenured faculty, department chairs and emerging leaders within the four ACES college/schools, facilitated by Dr.

Christopher Loving, regarding mentoring and retention of junior faculty especially in tough budget times and communication skills.

The bimonthly lunches with the ACES Co-PI's that served as a mechanism for informally evaluating the mentoring initiative were a successful aspect of the program and so the mentoring initiative shifted to Junior Faculty Peer Mentoring Lunches.

Launched in 2007, the ACES Junior Faculty Peer Mentoring initiative was designed as an opportunity for junior faculty to meet, interact, and share career concerns and insights. Emerging leaders were identified in the School of Medicine, the College of Arts and Sciences and the Case School of Engineering. Most participants were in their first 1- 4 years of employment, with more senior members near applying for tenure attending irregularly. The lunches were directed at discussions of career development, networking skills, third-year review, mentoring, and tenure package preparation. The lunches alternated between open peer discussions, panels of senior faculty or brief presentations by administrators on policy or procedure

The Case School of Engineering group, facilitated by Xiong (Bill) Yu, an Assistant Professor in the Department of Civil Engineering, met at roughly monthly intervals and had an average attendance of 10, which represents around 50% of their junior faculty. The College of Arts and Sciences group, facilitated by Radhika Atit, Assistant Professor in the Department of Biology, met every month and had an average attendance of 6, which represents 14% of their junior faculty. The School of Medicine group, facilitated by Kristian Baker, Assistant Professor in the Center for RNA Molecular Biology, met a total of four times during academic year 2007/2008 and had an average attendance of 20 which represents 50% of their junior faculty.

The Case School of Engineering faculty facilitator stated that outcomes for his group included appreciation of having a forum for concerns to be raised, questions to be answered and people sharing their experiences in dealing with common situations that arise for junior faculty. The final peer mentoring lunch in the school of Engineering was attended by the newly appointed Associate Dean for Faculty Development who stated that she will continue the peer mentoring lunches for junior faculty out of her new office. The College of Arts and Sciences facilitator had difficulty finding a meeting time that was conducive to increasing attendance, but stated that the participants all agreed that the meetings were worthwhile. The topics of discussion in Arts and Sciences mirrored that of Engineering.

Peer-mentoring activities at WSOM continued occasionally in Spring 2006 and during AY 2007-08, but in Fall 2008 they were re-instated more regularly with the Dean's support. All 17 junior faculty members, including tenure track and non-tenure track assistant and associate professors have begun to participate in the group's professional development activities. This self-organizing group has laid out a monthly meeting schedule for 2008-09, inclusive of discussion meetings with senior faculty and senior school and university administrators around research development, teaching improvement, and other academic career development topics. Dr. Bilimoria is scheduled as the first speaker for the 2008-09 year for this group. In addition, the pre-tenure faculty members now meet regularly as a group with the Interdepartmental Seminar speaker (6-7 internal and external distinguished scholars who are invited to present their research in a school-wide forum)

In the School of Medicine facilitator Kristian Baker conducted a survey of junior faculty soliciting suggestions for topic-driven lunches. The topics with the greatest interest were: Time management; Salesmanship and self promotion; Meeting with senior administration/ university policy; Dissociation from mentor/collaborative research; Negotiation skills (with Department/School); Tenure (mock tenure review); Mock study section/Study section issues; Grantsmanship (aims page review) and salesmanship for grants/papers; Meetings with successful faculty (what did they do to get where they are); Meetings with recently tenured individuals.

One of the concerns raised by the School of Medicine junior faculty was the need for separate peer mentoring for clinical and basic science faculty, while recognizing that these groups should periodically join together for open communication and networking. This separation would allow for more focused discussion of relevant information, in both career development type, and peer mentoring lunches.

For continued peer mentoring lunches, which we anticipate will be put in place by the Assistant Dean of Faculty Development and Diversity who is yet to be appointed as of this report, the faculty expressed an interest in having a facilitator to ensure that topics stay on track and that everyone has an opportunity for involvement.

### Speed Mentoring

Another style of mentoring was put in place with the speed mentoring initiative which took place at the Research ShowCASE on April 12, 2007 and April 17, 2008. Speed mentoring, modeled after speed dating, let participants interact personally with several mentors within a 90-minute period about very specific concerns and problems. Participants gained quick and varied insights on career development from volunteer senior faculty mentors in a structured, time-sensitive, environment. Each participant showed his/her C.V. to a mentor, discussed academic career building efforts to date, and received feedback on progress and development needs, and then moved to a different mentor. Each mentee had the chance to personally interact with up to six mentors from a variety of academic disciplines. The event was open to all faculty members, postdoctoral fellows, and graduate students, with women and minorities especially encouraged to attend; 35 mentees attended in 2007, mostly graduate students from S&E fields. The speed mentoring session was enthusiastically received, and will be institutionalized as part of the Annual Research ShowCASE event. The 2007 Speed Mentoring Evaluation report can be found at: [www.case.edu/admin/aces/documents/Speed\\_Mentoring\\_Eval\\_2007.pdf](http://www.case.edu/admin/aces/documents/Speed_Mentoring_Eval_2007.pdf)

In 2008 a new system for selecting mentors was developed as a “crowd control” mechanism to ensure that mentees were able to access their chosen mentors, while preventing any one mentee from dominating the process through early sign-up. A new handout, “How-To for Mentors” and “How-To for Mentees” was distributed as well.

A total of 20 mentees attended the event in 2008 with an average of 3 mentoring sessions per person, but unfortunately, only six evaluations were completed by the mentees attending. Of those evaluations collected the event was rated uniformly “Excellent” in the four categories (1) Quality of feedback from Speed Mentors, (2) Usefulness of the program, (3) Administration of the Program, and (4) Overall reaction to the program. The 2008 evaluations summary is found here: [www.case.edu/admin/aces/documents/Summary\\_2008\\_Speed\\_Mentoring.pdf](http://www.case.edu/admin/aces/documents/Summary_2008_Speed_Mentoring.pdf)

### **F. Professional Networking Opportunities**

In Phase 1, women faculty participating in the coaching and mentoring component requested regular contact with the ACES PI's, so monthly networking luncheons were established and were attended by one or more of the women PI's. The luncheons were well attended and provided the women faculty a chance to talk about their experiences at Case and also to discuss success stories and challenges with the mentoring and coaching initiatives. This was an invaluable source of input for the development of the mentoring and coaching initiatives and the luncheons continued through Phase 2 with the similar success.

Each fall during the five years of the grant, ACES hosted a Theatre Party for the 31 departments, deans and administrators. This event allowed informal networking and socializing across departments and college/schools and was consistently popular and well attended with between 30 and 50 faculty and their partners/spouses attending each year. In addition to the socializing, we supported the efforts of the MFA

students in the Department of Theatre and Dance with this event by choosing productions in which they were featured.

Professional networking and development for department chairs was enhanced by participation in the University of Washington's ADVANCE Leadership Workshop. A total of ten department chairs, two per year from July 2004 – July 2008, have been chosen by the Co-PI's to attend and have consistently found the training to be timely and useful. The enthusiastic reaction to the Seattle workshops prompted ACES to invite Dr. Christopher Loving to the CWRU campus for extended development workshops three times in 2006 and 2007. He worked with deans, department chairs, and faculty to facilitate leadership development, strategic planning and climate change. Dr. Loving led discussions among tenured faculty, department chairs and emerging leaders within the four ACES college/schools regarding mentoring and retention of junior faculty especially in tough budget times and communication skills.

The Flora Stone Mather Center for Women began offering Faculty Development Workshop luncheons in the fall of 2004, and have offered one each semester since that time, featuring leading scholars in leadership development for women faculty. Topics included mentoring, gendered communications, negotiating, using emotional intelligence, avoiding pitfalls and dealing with difficult situations, and planning a successful academic career. These workshops were all rated positively and afforded women from all over the campus an opportunity to form internal and external networks. Workshops often included women from Lubrizol Corporation, who were invited to attend. These workshops have become a permanent offering of the Flora Stone Mather Center for Women. (Details about the workshops can be found at: [www.case.edu/admin/aces/networkingevents.htm](http://www.case.edu/admin/aces/networkingevents.htm))

- Sandra Donovan, Success Strategies for Academic Careers: Lessons from Industry, Sept. 23, 2004 – 60 Attendees
- Claire Scott Miller, Successful Mentoring , Feb, 2005 – 15 Attendees
- Deborah M. Kolb, Negotiating in the Academy: a Workshop for Women Faculty, Nov. 11, 2005 – 26 Attendees
- Susan S. Case, Gendered Communication in Academe: Understanding the Gap – Valuing the Differences, Feb. 17, 2006 – 29 Attendees
- Bernice Sandler, Success and Survival Strategies, Nov. 3, 2006 – 37 Attendees
- Diana Bilimoria, Emotional Intelligence in the Academic Workplace: A Primer for Women Faculty, April 13, 2007 – 26 Attendees
- Joann Moody, Tricks of the Trade for New and Pre-Tenure Faculty: Saving Time and Sanity, Oct. 29, 2007 – 15 Attendees
- Linda Garverick, Having Difficult Conversations: Skill-Building for Women, March 7, 2008 – 24 Attendees

In conjunction with ACES, the Flora Stone Mather Center for Women, with co-sponsorship from the Office of the Provost, has annually hosted a Women of Achievement Luncheon, honoring women faculty who have attained tenure, promotion, named professorships and administrative posts. The new tradition was begun 5 years ago.

Beginning in 2005, the Flora Stone Mather Center held annual "Spotlight Series Prize Awards" to recognize the contributions of women faculty. Each college/school was asked to choose an outstanding woman faculty scholar to receive the award. Interim President Eastwood opened the event and most of the deans presented the awards for their nominee. Information can be found here: [www.case.edu/provost/centerforwomen/academics/spotlight.html](http://www.case.edu/provost/centerforwomen/academics/spotlight.html). The following faculty received awards:

*Fall 2005 Awardees*

- Kathleen Farkas, Associate Professor of Social Work in the Mandel School of Applied Social Sciences
- Dr. Marion Good, Professor of Nursing at the Frances Payne Bolton School of Nursing
- Yiping Weng Han, Associate Professor of Biological Sciences in the School of Dental Medicine
- Anne Hiltner, Herbert Henry Dow Professor of Macromolecular Science and Engineering in the School of Engineering.
- Sharona Hoffman, Professor of Law, Professor of Bioethics and Associate Director of the Law-Medicine Center at the School of Law
- Kathleen Kash, Professor of Physics in the College of Arts and Sciences
- Lisa M. Maillart, Assistant Professor of Operations in the Weatherhead School of Management
- Patricia Marshall, Associate Professor of Bioethics in the School of Medicine.

*March 2007 Awardees*

- Diana Bilimoria, Associate Professor of Organizational Behavior in the Weatherhead School of Management
- Eva Kahana, Robson Professor of Humanities, Sociology, Medicine and Nursing College of Arts and Sciences
- Lenore A. Kola, Associate Professor in the Mandel School of Applied Social Sciences
- Jacqueline Lipton, Professor in the School of Law
- Diana Lynn Morris, Associate Professor of Nursing in the Frances Payne Bolton School of Nursing.
- Meral Özsoyoğlu, Professor of Computer Science in the Case School of Engineering
- Marsha A. Pyle, Associate Dean for Education and Associate Professor of Oral Diagnosis and Radiology
- Susan Redline, Professor of Pediatrics, Medicine, and Epidemiology and Biostatistics in the Case Western Reserve University School of Medicine.

In Fall 2008, the Spotlight Prize event was combined with the Women of Achievement luncheon, featuring a keynote address by President Barbara Snyder. This Center for Women event will continue to be offered as an annual event. More information is available at: [www.case.edu/provost/centerforwomen/academics/achievement.html](http://www.case.edu/provost/centerforwomen/academics/achievement.html)

*Fall 2008 Awardees*

- Christa H.S. Bouwman, Assistant Professor of Banking and Finance and Lewis-Progressive Professor of Management in the Weatherhead School of Management
- Barbara J. Daly, Professor in the Frances Payne Bolton School of Nursing, with a secondary appointment in the Department of Biomedical Ethics in the Medical School
- Ruth Keri, Associate Professor of Pharmacology in the School of Medicine
- Juliet P. Kostritsky, John Homer Kapp Professor of Law in the School of Law
- Clare M. Rinnac, Wilbert J. Austin Professor of Engineering and Chair of the Department of Mechanical and Aerospace Engineering in the Case School of Engineering
- Kristin Victoroff, Assistant Professor of Community Dentistry in the School of Dental Medicine

- Kathleen Wells, Professor of Social Work at the Mandel School of Applied Social Sciences
- Martha Woodmansee, Professor of English in the College of Arts and Sciences and holds a secondary appointment as Professor of law in the School of Law

### **G. Retreats (Provost and college/school)**

The ACES-sponsored annual Provost's Leadership Retreat has been held each fall since 2004. The Leadership Retreat, now entering its fifth year, is an activity completely institutionalized through the Office of the Provost. With a core goal of building a sense of collegiality and common purpose among department chairs and administrators, this event has become a pivotal source of information regarding institutional and national research, progress in improving the CWRU campus climate for women, best practices for recruitment and retention, and professional networking for department chairs. Evaluations of the retreats have been consistently favorable.

Each retreat has had a unique focus developed by the Co-PI's, and uniform reporting elements for consistency. October 26, 2004 was the first time ever, the President, Provost, the deans of the schools of Engineering, Management, and Medicine and the College of Arts and Sciences, and the chairs of the 31 S&E departments participating in the NSF-funded ACES program were brought together to discuss issues pertinent to the recruitment, retention, advancement, and leadership of women faculty. (see the agenda, presentations and posters at [www.case.edu/admin/aces/retreat/agenda.htm](http://www.case.edu/admin/aces/retreat/agenda.htm)) This initial retreat included NSF ADVANCE program directors, Drs. Alice Hogan and Lloyd Douglas who spoke about the overall ADVANCE program, and Drs. Abby Stewart and Sam Mukasa from the University of Michigan, who presented information on key programs and findings from their first round ADVANCE project. Deputy Provost Lynn Singer described ACES program initiatives and activities during the first year including executive coaching of deans, chairs, and women faculty, mentoring committees of women faculty, training and development, networking, search committee support, and student awareness training. Dr. Singer's update of activities and outcomes became a standard part of all subsequent retreats.

The chairs of the first year departments shared the experiences, successes, and challenges as their departments piloted the ACES initiatives, and each of the four participating deans addressed the advancement of women faculty, including partner hiring, child care, and service load issues in their schools. The Research and Equity Committee (REC) reported on findings from faculty focus groups and interviews, and the 2004 University Community and Climate Survey. The retreat concluded with a SWOT analysis for moving forward with initiatives, and a dinner keynote by Dr. Sue Rosser from the ADVANCE program at Georgia Institute of Technology.

The 2<sup>nd</sup> annual Provost's Leadership Retreat was held on November 11, 2005. The theme for the retreat was "Things That Work!" (the agenda, presentations and posters are available at [www.case.edu/admin/aces/retreat/agenda2005.htm](http://www.case.edu/admin/aces/retreat/agenda2005.htm)) The theme was centered around the completion of a case study of the CWRU Neurosciences Department "Things That Work for Departmental Success at Case." The lunchtime keynote speech by Dr. Riane Eisler was on the topic of a partnership model (as opposed to the dominator model), as a method that works for cultural transformation. Desiring to make the event more interactive, the CRLT players from University of Michigan performed to great effect at the retreat and several other scheduled meetings. Two department chairs, who had attended the Chairs Leadership Workshop at the University of Washington in summer 2005, shared the highlights of their experience with their peers at the retreat and recommended that we bring Dr. Christopher Loving to CWRU in the future. The REC discussed new findings from actual focus group and interview data, which highlighted specific situations experienced by women faculty in S&E departments, followed by a group discussion of next steps for the university.

The 3<sup>rd</sup> annual Leadership Retreat was November 2, 2006. In this third year, as we worked toward institutionalization, the invitation list was expanded to include the department chairs of the entire College of Arts & Sciences, the deans of the School of Dental Medicine, The Mandel School of Applied Social Work, the Frances Payne Bolton School of Nursing and the School of Law in addition to the usual attendees of the President, Provost, deans of CAS, CSE, SOM, WSOM and chairs of the 31 S&E departments in the ACES program.

The theme for the 2006 retreat was “Leading Change: Creating Tomorrow’s University” (see the agenda, presentations and posters at [www.case.edu/admin/aces/retreat/agenda2006.htm](http://www.case.edu/admin/aces/retreat/agenda2006.htm)) The lunchtime keynote "Strategies for Climate Change: How Deans and Department Chairs Make a Difference", was delivered by Bernice Sandler, Senior Scholar at the Women’s Research and Education Institute in Washington, D.C. Dr. Lynn Singer gave the progress report on the status of ACES activities for the first three years, followed by a department chairs small group discussion about the impact of ACES initiatives in their departments. The Resource Equity Committee presented the NSF Indicators and the recently completed Salary Equity Study, and Dr. Christopher Loving gave a brief presentation on communication skills. Break-out groups, led by the deans of the four ACES schools, created action plans for the schools, then the entire group discussed a number of common issues affecting faculty recruitment. Interim President Eastwood ended the session by proposing a university-wide, family friendly policy of all mandatory meetings being scheduled between 9:00 am – 4:00 pm.

The theme of the 4<sup>th</sup> Annual Leadership Retreat was "Competing for the Academic Workforce in a Global Environment." (agenda, presentations and posters at: [www.case.edu/admin/aces/retreat/agenda2007.htm](http://www.case.edu/admin/aces/retreat/agenda2007.htm)). The lunchtime keynote address was delivered by our then new and first woman president Barbara Snyder. The retreat again included standard presentations from the four participating ACES deans, and a progress report from ACES Principal Investigator Lynn Singer on initiatives and the institutionalization of activities. Expanding the reach of the ACES activities for the 2007 the retreat included an interactive discussion about recruitment, retention and mentorship of underrepresented faculty as well as women faculty by Dr. JoAnn Moody. A large group discussion on Short and Long-Term Priorities for the upcoming year ended the day.

The 5<sup>th</sup> annual Provost Leadership Retreat took place on November 5, 2008 with the theme of “Consolidating Our Gains, Shaping Our Future”. The lunchtime keynote was “Achieving Work-Life Excellence” presented by Robert Drago, Ph.D., Professor of Labor Studies, Industrial Relations and Women's Studies at Penn State University. Dr. Lynn Singer presented a summation of the five years of progress and success of the ACES grant, the Resource Equity Committee shared the recently completed Salary Equity Study, and the Executive Summary of the comparison of the Campus Climate Surveys from 2004 and 2007. The deans of the four schools briefly discussed the ways they have implemented faculty development and improved faculty morale over the last year. The most notable of which was the Case School of Engineering launching the Office for Faculty Development with Professor Ica Manas Zlocower, Ph.D., as the Associate Dean for Faculty Development.

Additional retreats were held at the school and department level in 2007 and 2008. In August 2007 Dr. Christopher Loving presided over the first ever all faculty retreat for the Case School of Engineering (CSE). With nearly 100% attendance, Dr. Loving led the CSE faculty through a day long visioning exercise utilizing appreciative inquiry techniques, which was followed by a large group discussion to distill priorities and begin to establish next steps for the school.

Also in August 2007 Dr. Loving and Amanda Shaffer led the Department of Mechanical and Aerospace Engineering in an all-day strategic planning retreat. This retreat was the initial meeting in a year long series of meetings designed by Department Chair Clare Rimnac, Ph.D. to create a strategic plan with

maximum participation and impact for the growth and health of the department. Then in April 2008 Amanda Shaffer, Interim Faculty Diversity Officer, led the Department of Electrical Engineering and Computer Science (EECS) in a departmental retreat, followed by a half-day strategic planning session in May of 2008. During these meetings the department was able to finalize a new mission and vision statement, and agree on the action steps needed to achieve their strategic planning goals. The process has continued with an EECS faculty and staff retreat held in August of 2008.

The newly established CSE Office of Faculty Development held a “Transformational Leadership” workshop for Deans and Chairs in August of 2008 with the goal of fostering collegial interactions between faculty and leaders to benefit both individual and collective performance. All Deans and 6 out of 7 chairs attended the presentation focusing on a model of transformational leadership and participated in group discussions.

As a follow up to the leadership workshop, the CSE Office of Faculty Development held a “Leadership/Ownership Meeting – The CSE Strategic Plan and You” for faculty and staff in September 2008, attended by approximately 50 staff and faculty members. The goals were to introduce a conceptual framework for positive leadership and to encourage faculty and staff take greater leadership in the implementation of the CSE strategic plan. The session related leadership theory to the concrete, practical needs of the school and supported the development of a more positive and proactive approach to distributed leadership, responsibility, and accountability. At the request of the Department Chairs, a second faculty & staff workshop is being planned to focus on the Best Practice of “Running Productive Meetings.”

## **H. Accountability of Deans**

The Case Western Reserve University (CWRU) ACES program called for accountability of Deans by the Provost on a series of criteria tracking progress in the recruitment, advancement and retention of women faculty in the S&E disciplines as is shown in Table 1 below.

### *Overall*

There has been significant realization of the overall goal of deans’ accountability, but variability across schools and deans. Assessment of the progress made needs to be understood in the context of turmoil in leadership that has occurred since the application for the Advance award. During the course of the award, the President and Provost were given a vote of no confidence and stringent financial constraints and cutbacks were instituted in the face of a large recurring operating budget deficit and a 40% downturn in development attainment. During the five years of the program, there were 2 Presidents and 2 Interim Presidents, 2 Provosts and 3 Interim Provosts, 3 Deans and 2 Interim Deans of the School of Medicine, 3 Deans and 2 Interim deans of the College of Arts and Sciences (CAS), 4 Deans and 1 Interim Dean of the School of Management and 2 Deans of the School of Engineering. It is significant that the greatest progress has been made in the school with the most stability in leadership and also significant that the stability in leadership of the CWRU Advance Leadership and Steering Committee has been maintained.

The Provost’s Leadership Retreat initiated through ACES has remained a prominent and substantive avenue to promote university transformation. In fact, at the NSF site visit, ACES was cited as having provided a source of positive leadership during a critical time for the university. The agenda, posters and presentations from the four retreats can be viewed at this link [www.case.edu/admin/aces/retreat/agenda2008.htm](http://www.case.edu/admin/aces/retreat/agenda2008.htm).

**Table 1: Criteria for Accountability of Deans – Indicators of ACES Success**

<p><b><u>Overall</u></b> Increase the percentage of S&amp;E women faculty at CWRU over baseline by 20% over the 5-year period.</p> <p><b><u>Recruitment</u></b> Increase the percentage of women faculty at the assistant professor level Recruit one new senior woman as a full professor with endowed chair in each test department Increase women as a percentage of all candidates in search pools Increase women as a percentage of candidates invited to visit CWRU Increase women as a percentage of candidates offered jobs</p> <p><b><u>Advancement and Retention</u></b> Increase the percentage of women faculty at the associate professor level through promotion from within Increase the percentage of women faculty at the full professor level through promotion from within Increase the percentage of women department chairs Increase the percentage of women in academic administration at the school level</p> <p><b><u>Institutional Climate</u></b> Significantly improve qualitative perceptions and ratings of climate, as ascertained through focus groups, interviews, and surveys Increase resource equity for women faculty, including salary equity, teaching loads, lab space, retention perks, etc. Increase the percentage of women invited to campus as distinguished lectureships, visiting professors/scholars, etc.</p> <p><b><u>Faculty Development</u></b> Create and institutionalize coaching and mentoring mechanisms, and increase faculty participation rates Conduct relevant training workshops and events for all faculty, and increase faculty participation rates Create and utilize school level opportunity grants for the development of women and minorities</p>
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Overall, CWRU increased the percentage of women faculty in the S&E departments by 17.3% since 2004-05. The complete NSF indicator data tables can be downloaded at this link [www.case.edu/admin/aces/documents/5\\_Year\\_NSF\\_Indicators.pdf](http://www.case.edu/admin/aces/documents/5_Year_NSF_Indicators.pdf). In the CAS, FTE women faculty increased by 42% from 33 to 47, while male faculty decreased from 99 to 98, (-1%). In Engineering, female faculty increased from 10 to 14 (40%), while the number of male faculty remained constant. For Management, the number of women decreased from 17 to 12 (-29%), while male faculty decreased from 55 to 44, (-20%). In Medicine, female faculty increased from 39 to 42, (8%) while male faculty decreased from 108 to 105, (-3%), making a net 11% increase for women faculty. Thus, with the exception of the School of Management, gains were made in the representation of women faculty in the S&E departments.

*Recruitment*

During summer 2006 and spring 2007 a candidate pool study was undertaken to tracking the gender and racial diversity in faculty searches from AY 2001/02 through AY 2006/07. The study, which can be downloaded at [www.case.edu/admin/aces/documents/Candidate\\_Pool\\_Study.pdf](http://www.case.edu/admin/aces/documents/Candidate_Pool_Study.pdf) examined a total of 193 faculty searches in STEM departments that resulted in hires, and looked at, among other questions, “Does having more female candidates on the short list improve the chances of hiring a female or an under-represented minority?” In the initial pool of 9,055 applicants, 15.9% were women, 55.6% male, and 28.5% were unknown. Out of the 985 candidates that reached the short list, 30.7% were female, 68.8% were male and .5% unknown. In the final decision of hiring, female candidates were offered 38.9% of the S&E faculty positions (75 of the 193), and males were offered 61.1% or 118 positions. The study shows

that there were increases in the percentages of women in the candidate pools, on the short list, and ultimately hired, between 2001/02 and 2006/07.

Another accountability mechanism put in place in 2005/06 was adding a step to the search process to have the dean approve the diversity of the candidate pool before candidates could be invited to interview. Recruitment of women or minorities is now often noted the annual report that deans provide to the Provost. The section on diversity was added to the report as a result of ACES lobbying for more stringent accountability.

#### *Advancement and Retention*

In the CAS, the number of women faculty at the Associate level increased from 5, (representing 24%) to 10 (representing 40%) of the faculty, while the number of women at the full professor level remained the same at 13, but represented 16% of the faculty in 2004 and 19% in 2007-08. While there were no women S&E department chairs in 2004, there are now 3 (Chemistry, Astronomy and Mathematics). Information can be downloaded from the 5 Year NSF Indicators at this link: [www.case.edu/admin/aces/documents/5 Year NSF Indicators.pdf](http://www.case.edu/admin/aces/documents/5_Year_NSF_Indicators.pdf).

In Engineering, there was no change in the number of women faculty at the Associate level, but an increase of 1 woman faculty member at the Professor level where there were no women chairing departments or in administration. In Engineering previously, there are now 2 chairs (Mechanical & Aerospace and Electrical Engineering & Computer Sciences) and 1 associate dean. In addition, 1 senior woman faculty member directed an NSF Science Technology Center.

In Management, there was no change in the number of women associate professors or professors but, as of July 1, 2008, 2 additional women were promoted to Professor. In addition, the number of women promoted to the Associate Dean level increased from 1 to 2.

In Medicine, there was a decline (from 8 to 6) in the number of women at the Associate level and no change at the Professor level. Leadership advances include the appointment of a female dean, the first in SOM history.

Encouraging promotion from within was made a permanent part of the search committee training provided by the Office of Faculty Diversity as a means of increasing the number of women represented and also as a cost saving strategy. Search committees who conduct national searches for lecturers reduce the promotion paperwork, and save the department money that would have been spent on advertising.

The number of women chairs in S&E has increased from a total of 2 out 24, or 16%, to a total of 6 out of 24, or 25%.

#### *Institutional Climate*

ACES sought to improve qualitative perceptions and ratings of climate, to increase resource equity for women faculty and to increase the percentage of women invited to campus as distinguished lecturers and visiting scholars.

During the grant period, 2 Faculty climate surveys (2004 and 2007) were completed. Findings were that CWRU improved certain key aspects of the climate for women faculty, reducing the perceptions of lower community and job satisfaction, resources and supports reported by women faculty in 2004. Supports for faculty work-life integration were felt to be significantly improved. Salary equity studies done in 2007 and 2008 indicated substantial progress in achieving salary parity in all schools. Significant discrepancies in the 4 ACES schools found in 2007 were eliminated in 2008 in all but management.

A number of climate areas did not improve, however, between 2004-2007. Female faculty members continued to report experiencing themselves as less valued and included, but a great sense of pressure and restrictions and felt that gender and race influenced their treatment in their primary units to a greater degree than male faculty.

The Office of the Provost, the Faculty Senate and Institutional Research will continue to oversee annual faculty salary equity studies and a faculty climate survey every three years to continue to raise awareness among the deans to ensure accountability. The COACHE survey focusing on junior faculty has also been institutionalized and will be administered every 3 years.

The Advance Distinguished Lectureships significantly increased the number of women scientists and engineers brought to CWRU; with 3 in year 1, 11 in year 2, 6 in year 3, 8 in year 4 and 12 in year 5. Two lectureships a year have been permanently established in the School of Engineering through the NSF CLiPS Science and Technology Center in collaboration with the Office of the Provost. More information can be found here: [www.case.edu/admin/aces/lectureship.htm](http://www.case.edu/admin/aces/lectureship.htm)

#### *Faculty Development*

Coaching, networking and faculty development events were exceptionally well-received and a major component of the ACES program. The Flore Stone Mather Center for Women has institutionalized the networking programs and 2 schools (Medicine and Engineering) have created Associate Dean positions for Faculty Development. The new university strategic plan calls for the creation of a faculty development position in each school, thus maintaining a university wide focus on the advancement of women and URM faculty. The University is in the process of hiring a Vice President of Inclusion, Equal Opportunity and Diversity who will oversee coordination of these efforts.

Eight faculty development workshops were held and three additional networking events were sponsored that engaged over 300 women faculty members. In addition, an annual event begun to honor women faculty of achievement will be continued through the university Flora Stone Mater Center for Women, with increasing participation culminating in over 200 participants this year. A formal mentoring program was initiated in the Department of Biomedical Engineering.

Junior faculty Peer Mentoring lunches were conducted in the Schools of Medicine and Engineering, and are anticipated to be continued in those schools overseen by deans of Faculty Development.

Opportunity grants were highly utilized and will continue to be available through the Office of the Provost as they have not yet been institutionalized in the schools. More information can be found here: [www.case.edu/admin/aces/opportunity.htm](http://www.case.edu/admin/aces/opportunity.htm)

### **I. Tools for Administrators and Faculty**

#### *Department Information Packets*

In 2005 as a means of proactively engaging all of the faculty in the ACES departments, information packets were developed. These packages, which explained the various ACES initiatives were distributed to faculty when their department was scheduled to receive the ACES interventions. These packets contained general information about NSF-ADVANCE and the ACES initiatives as well as readings and resources customized for female faculty, male faculty and department chairs. These packets were updated every summer to reflect the expansion of services and current offerings. The outline of the information that was distributed is found at this link: [www.case.edu/admin/aces/documents/Dept\\_Info\\_Packs.pdf](http://www.case.edu/admin/aces/documents/Dept_Info_Packs.pdf)

### *Diversity Plans for Deans*

In 2006, to help deans think more comprehensively about culture change in their schools/college, individualized diversity plans for four participating schools were created. These plans outlined suggestions for potential actions deans could commit to in order to create a diversity plan for their school or college beginning with an assessment of current activities that include or increase diversity. One step outlined the ways that ACES initiatives and resources could be used to increase diversity and improve the climate for women faculty. Other steps focused on faculty development, mentoring, awards and acknowledgement and potential conferences and workshops. A sample of the general diversity for deans, not customized for the individual schools, can be found at this link:

[www.case.edu/admin/aces/documents/DiversityForDeansSample.pdf](http://www.case.edu/admin/aces/documents/DiversityForDeansSample.pdf)

### *Diversifying Faculty Search Candidate Pools*

Amanda Shaffer and Beth McGee, Faculty Diversity Officer, initially made presentations of the search guidelines and procedures for diversifying the candidate pools to the business managers and department assistants in the Case School of Engineering, the School of Medicine, and MetroHealth Hospital in 2005. The outreach effort continued in the College of Arts and Sciences, the Weatherhead School of Management, and University Hospitals in subsequent years.

As part of the institutionalization, Amanda Shaffer annually made presentations of the search guidelines and procedures for diversifying the candidate pools to the deans, department chairs, business managers and department assistants university-wide.

In her initial capacity as the Faculty Diversity Specialist, Amanda Shaffer conducted one-on-one meetings with department chairs to assess current faculty search procedures and areas for improvement in the department prior to conducting the faculty search committee training. That meeting served a dual purpose in that it allowed for a customized presentation which can help decrease resistance to implementing proposed changes, and it clarified the department chairs perception of departmental relationships and climate. The search committee trainings provided information about how departmental climate can be a recruiting tool for women faculty and minority faculty, in addition to processes for reducing subtle bias in evaluation. In 2006 the search committee training was split into three 45-minute sessions - Reviewing the Search Guidelines, Best Practices for Evaluating Candidates, and Interviewing & the Campus Visit which allows for greater interaction with the diversity specialist at key moments in the process. Web tools were developed, and are continually updated, to assist with self-training and to increase dissemination of the information. The Office of Faculty Diversity website is located at [www.cwru.edu/president/aaction/search.html](http://www.cwru.edu/president/aaction/search.html)

A major change implemented in 2005 was building into the search process a means for deans to be aware of and held accountable for the diversity of the candidate pools their searches were generating. This was incorporated into the search process with a form that requires the signature of the dean prior to candidates being invited to interview.

Additionally, Faculty Welcome Packets have been created for women interviewees that explain the ACES program, 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, and Gay People's Chronicle). In the spirit of transparency, the Manager of Faculty Diversity and Development 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 found here: [www.case.edu/president/aaction/aaeeo.html](http://www.case.edu/president/aaction/aaeeo.html)

Also established is a network of women faculty and minority faculty that are available to meet with candidates to discuss climate issues and their experience of being a woman scientist at Case. Most especially PI Lynn Singer

makes every effort to speak personally with female candidates during their campus visit. ACES has received positive feedback from several candidates who were subsequently hired into Case STEM departments that were the only university that made efforts to openly address climate issues with them and schedule interviews with senior women scientists.

A voluntary online Affirmative Action Tracking Form for faculty candidates was implemented in 2005/2006 and continues as part of the institutionalization of ACES initiatives. The survey is maintained in a confidential database housed in the Office of Faculty Diversity and can only be accessed by the Faculty Diversity Officer for reporting purposes.

#### *Website Tools*

The website online tools were greatly expanded in 2007 to contain information beyond faculty searches added for the benefit of the entire faculty community. The ACES research and publications, the national research and resources on gender equity in academia, and much of the work produced by ADVANCE institutions is now permanently housed on the Office of Faculty Diversity website: [www.case.edu/president/aaction/unireports.html](http://www.case.edu/president/aaction/unireports.html)

### **J. Student Training**

The Gender Awareness component of the ACES project was designed to introduce students to research that indicates that there are gender discrepancies in the treatment of men and women in academia. The training used an “action learning” method and underwent several iterations based on student feedback and faculty reactions. The curriculum took into account the culture at CWRU and the limited time that we were given to introduce the material to any one group of students.

The training, initially introduced in 2004-2005 in classrooms, during class time, as a PowerPoint presentation followed by a large group discussion, was negatively received. In 2005-2006 the curriculum was streamlined, but the evaluation ratings remained mediocre (please see the entire report at [www.case.edu/admin/aces/documents/StudentTrainingForGenderAwarenessFinalReport.pdf](http://www.case.edu/admin/aces/documents/StudentTrainingForGenderAwarenessFinalReport.pdf)) which was not a satisfactory outcome. The experience of the first two phases changed the training in three significant ways. First, the training was now embedded in a variety of “series” designed to benefit student careers, secondly, the training was shifted to outside of the classroom, and third, student associations were actively recruited as allies/co-sponsors of the training.

Overall, these changes led to clear and solid progress in terms of the reputation of our work among student groups in STEM fields. The third phase of the program was accompanied by positive quantitative and qualitative evaluations from the groups that received training.

The gender awareness training was most successful in this third phase when it was specifically combined with career planning topics and when department level graduate student groups and/or groups with a solid constituency, such as the graduate student senate, were integrally involved with the planning. Any gender awareness training at CWRU would be encouraged to follow this model.

### **K. ADVANCE Distinguished Lectureships**

The goal of the ADVANCE Distinguished Lectureships was three-fold: (1) increase the visibility of senior women scientists and engineers on campus, (2) provide networking opportunities for faculty and students, and (3) preview potential hires of women and minority senior faculty. Distinguished Lecturers were invited based on mutual research interests with faculty in the host department for a minimum stay of

2 days and a maximum stay of 2 weeks at Case. The visit included 3-6 lectures as well as a public lecture followed by a reception. In addition, many departments scheduled informal discussions with the visitors. The proposals for Distinguished Lectureships were reviewed by the ACES Internal Advisory Board.

The Distinguished Lectureships were one of ACES' most popular programs; both men and women faculty enthusiastically took advantage of this opportunity to bring senior women in S&E to Case. In Years 1-3, Distinguished Lectureships were offered to the 32 ACES departments; in Years 4-5, they were made available to all departments. 21 ACES departments as well as one clinical department and the association of women faculty in the School of Medicine hosted Distinguished Lecturers (see below). We had originally planned to fund 50 lectureships during the 5-year award, but actually ended up funding only 40 due largely to scheduling constraints associated with the time frame of the ADVANCE Award. The Center for Layered Polymeric Systems, an NSF Science and Technology Center in the Department of Macromolecular Science & Engineering, began institutionalizing the Distinguished Lectureships by funding two per year for the duration of their 10-year award.

The ACES co-PIs and staff also worked with Sharry Floyd, Director of Corporate Relations, to sponsor a campus visit by Dr. Carol Kovac of IBM, promoting the ADVANCE Distinguished Lectureship within the greater Cleveland business community.

*Year 1 Lecturers*

Nancy Adler, McGill University  
Dawn Bonnell, University of Pennsylvania  
Debra Rolison, Naval Research Laboratory

*Host Department*

Organizational Behavior  
Materials Science & Engineering  
Chemistry

*Year 2 Lecturers*

Ana Achucarro, University of Leiden, Netherlands  
Cristina Amon, Carnegie Mellon University  
Mary Beckerle, University of Utah  
Viola Birss, University of Calgary  
Kristin Fichthorn, Pennsylvania State University  
Martha Gray, Harvard-MIT Health Science  
& Technology  
Naomi Lamoreaux, UCLA  
Jennifer Lewis, University of Illinois at Urbana  
Maria Minniti, Babson College  
Julie Morris, Washington University  
Nancy Reid, Toronto University

*Host Department*

Physics  
Mechanical & Aerospace Engineering  
Physiology & Biophysics  
Chemistry  
Chemical Engineering  
Biomedical Engineering  
Economics  
Materials Science & Engineering  
Marketing & Policy Studies  
Geological Sciences  
Statistics

*Year 3 Lecturers*

Marcia Inhorn, University of Michigan  
Lily Jan, University of California – SF  
Kristina Ropella, Marquette University  
Banu Onaral, Drexel University  
Margaret Weir, University of California–Berkley  
Susan Taylor, University of San Diego

*Host Department*

Anthropology  
Physiology & Biophysics  
Biomedical Engineering  
Biomedical Engineering  
Political Science  
Biochemistry

*Year 4 Lecturers*

Sandy Black, University of California – LA  
Diane O'Dowd, University of California- Irvine  
Laura Haas  
Anita Hopper, Ohio State University

*Host Department*

Economics  
Biology  
Electrical Engineering & Computer Science  
Center for RNA Molecular Biology

Joanne Ingwall, Harvard Medical School  
Kakaya Kafafi, Naval Research Laboratory  
Mary Katzenstein, Cornell University  
Vivian Pinn, National Institutes of Health

Biomedical Engineering  
Physics  
Political Science  
Women Faculty in the School of Medicine

*Year 5 Lecturers*

Linda Marie Burton, Duke University  
Lucy Candib, University of Massachusetts  
Lorna Gibson, MIT  
Kathryn Johnson, Columbia University  
Rebecca Lange, University of Michigan  
Bettie Sue Masters, University of Texas  
Anna Marie Pyle, Yale University  
Theda Skocpol, Harvard University  
Eve Sweetser, University of California - Berkeley  
Marjolein van der Meulen, Cornell University  
Linda Waite, University of Chicago  
Zena Werb, University of California – SF

*Host Department*

Sociology  
Family Medicine  
Mechanical & Aerospace Engineering  
Anatomy  
Geological Sciences  
Biochemistry  
Center for RNA Molecular Biology  
Political Science  
Cognitive Science  
Mechanical & Aerospace Engineering  
Sociology  
Physiology & Biophysics

**L. Endowed Professorships**

The program goals included two components:

- (1) An increase in the number/percentage of women faculty in the S&E departments holding endowed chairs and.
- (2) A commitment by the (then) university president to raise funds for five additional chairs allocated to women S&E faculty.

Goal one has been fully realized with the number of women faculty in the S&E departments holding endowed professorships nearly doubling (n=8 in 2003-04 and n=15 in 2007-08) and the percentage of chairs held by women faculty increasing from 14% to 20% during the five-year period of the program while the percentage of endowed chairs held by male faculty in the same departments decreased from 86% to 80% over the same period.

Goal two has been only partially achieved. Of the five new Endowed Professorships committed, only two are in place (one in Political Science, and one in Engineering) and a third is underway (with partial fundraising already obtained through the School of Management). There are several reasons for the lack of complete attainment. First, after the commitment was made, national challenges to diversity efforts raised questions about the legality of creating gender restricted endowed professorships. However, the Flora Stone Mather Professorship (currently in Political Science) has been constructed to include language that restricts it to a person in a Science discipline who has shown leadership in gender issues/initiatives on campus.

## **M. Opportunity Grants**

The purpose of the Opportunity Grants was to provide support for S&E women faculty to maximize their chances for success at Case. Grants were available for projects and activities for which it is difficult to obtain funding through other sources, such as childcare to attend scientific meetings, seed money to start new projects, travel to workshops to acquire new skills, book writing, etc. Proposals for Opportunity Grants were solicited twice a year and reviewed by the ACES Internal Advisory Board. In Years 1–4, Opportunity Grants were offered to the 32 ACES departments; in Years 5, they were made available to all departments. We were able to award 65 grants to 53 women and one Hispanic male faculty (see below). The recipients represented 25 ACES departments as well as one clinical department in the School of Medicine and the School of Nursing. The grants ranged from a few hundred dollars to at most \$25,000. In Year 3, Verena Murphy assessed the impact of Opportunity Grants by interviewing recipients from Years 1 and 2. The anecdotal reports clearly showed that these small grants made big impacts on faculty careers. Interviews of most of the recipients are available at the following links  
[www.case.edu/admin/aces/documents/Opp\\_Grant\\_Year1\\_Int.pdf](http://www.case.edu/admin/aces/documents/Opp_Grant_Year1_Int.pdf)  
[www.case.edu/admin/aces/documents/Opp\\_Grant\\_Year2\\_Int.pdf](http://www.case.edu/admin/aces/documents/Opp_Grant_Year2_Int.pdf)  
[www.case.edu/admin/aces/documents/Opp\\_Grant\\_Year3\\_Int.pdf](http://www.case.edu/admin/aces/documents/Opp_Grant_Year3_Int.pdf)  
[www.case.edu/admin/aces/documents/Opp\\_Grant\\_Year4\\_Int.pdf](http://www.case.edu/admin/aces/documents/Opp_Grant_Year4_Int.pdf)  
[www.case.edu/admin/aces/documents/Opp\\_Grant\\_Year5\\_Int.pdf](http://www.case.edu/admin/aces/documents/Opp_Grant_Year5_Int.pdf)

The Opportunity Grant program was one of the most well received ACES interventions. The demand was huge for the limited funds available. As part of an endowment for faculty development, we will be able to continue awarding Opportunity Grants albeit at a reduced level. We are exploring the possibility of supplementing the endowment funds in the next few years with funds from the Office of Research Administration. In addition, we are actively working to increase the endowment.

### *Year 1 Grantees*

Anne-Marie Broome  
Kathleen Kash  
Hue-Lee Kaung  
Heather Morrison  
Clare Rimnac  
Elizabeth Short  
Ruth Siegel  
Cather Simpson  
Karen Skubal  
Caroline Sussman  
Lee Ann Thompson  
Elisabeth Werner

### *Department*

Physiology & Biophysics  
Physics  
Anatomy  
Astronomy  
Mechanical & Aerospace Engineering  
Psychology  
Pharmacology  
Chemistry  
Civil Engineering  
Physiology & Biophysics  
Psychology  
Mathematics

### *Year 2 Grantees*

Alexis Abramson  
Cheri Deng  
Moren Levesque  
Lisa Maillart  
Heidi Martin  
Monica Montano  
Anna-Liisa Nieminen  
Julie Rennecker  
Helen Salz

### *Department*

Mechanical & Aerospace Engineering  
Biomedical Engineering  
Marketing & Policy Studies  
Operations  
Chemical Engineering  
Pharmacology  
Anatomy  
Information Systems  
Genetics

Beverly Saylor  
Amy Wilson-Delfosse

*Year 3 Grantees*  
Daniella Calvetti  
Charlotte Ikels  
Janet McGrath  
Emilia McGucken  
Deborah O'Neil  
Ramani Pilla  
Ruth Siegel  
Cather Simpson  
Caroline Sussman  
Elisabeth Werner

*Year 4 Grantees*  
Cynthia Beall  
Diana Bergeron  
Melissa Knothe-Tate  
Jennifer Liang  
Anna-Liisa Nieminen  
Heather Royer  
Anastasia White  
Ica Manas Zloczower

*Year 5 Grantees*  
Kristian Baker  
Sandra Barnes  
Patrizia Bonaventura  
Susan Brady-Kalnay  
Susan Case  
Carlos Crespo  
Nahida Gordon  
Jonatha Gott  
Susan Hinze  
LaShanda Korley  
Bonnie Lawrence  
Christine Nojar  
Noa Noy  
Meral Oszoyoglu  
Catherine Patterson  
Silvia Prina  
Clare Rimmac  
Heather Royer  
Ruth Siegel  
Sophia Sundararajan  
Xinmiao Zhang

Geological Sciences  
Pharmacology

*Department*  
Mathematics  
Anthropology  
Anthropology  
Sociology  
Organizational Behavior  
Statistics  
Pharmacology  
Chemistry  
Physiology & Biophysics  
Mathematics

*Department*  
Anthropology  
Organizational Behavior  
Biomedical Engineering  
Biology  
Anatomy  
Economics  
Psychology  
Macromolecular Science & Engineering

*Department*  
Center for RNA Molecular Biology  
Sociology  
Communication Sciences & Cognitive Science  
Molecular Biology & Microbiology  
Organizational Behavior  
Chemistry  
Nursing  
Center for RNA Molecular Biology  
Sociology  
Macromolecular Science & Engineering  
Psychology  
Psychiatry  
Pharmacology  
Electrical Engineering & Computer Science  
Molecular Biology & Microbiology  
Economics  
Mechanical & Aerospace Engineering  
Economics  
Pharmacology  
Neurology  
Electrical Engineering & Computer Science

## **N. Partner Hiring Network**

In order to address the “two-body problem” in faculty hiring, the Office of Faculty Diversity began outreach in 2005/2006 to establish a partner-hiring network on the CWRU campus. Working with internal and external collaborators, the goal was to develop a consortium of the same kind of local industry and alumni contacts that are utilized by Career Services/Co-Op Offices that serve students, to assist faculty partners (both new and current) in finding non-academic work in the surrounding area. An informal network exists through the efforts of Sarah Taylor, chair of the Newcomers Committee. This committee engages new faculty, their partners and families in the Case community through one-on-one contact, networking events, and casual coffees and picnics. Ultimately because of economic circumstances, the partner hiring network is currently limited to the online resources maintained by the Office of Faculty Diversity (found here [www.case.edu/president/aaction/pnetwork.html](http://www.case.edu/president/aaction/pnetwork.html)) and the personal efforts of the ACES team to make professional connections for faculty partners/spouses looking for employment.

Moving from an informal to a formal policy, academic partner hiring has been used successfully to recruit and retain a total of 13 faculty members since its adoption in summer 2005. The policy can be read here [www.case.edu/president/aaction/ppolicy.html](http://www.case.edu/president/aaction/ppolicy.html)

## **O. Minority Pipeline Faculty Exchange**

The goal of the faculty exchange was to build a strong bridge with minority universities for minority students and to provide role models for minority women students at Case. The original plan built on the partnership of Case and Fisk University, and included semester-long visits of Fisk faculty to Case and week-long visits of Case faculty to Fisk. Due to financial problems at Fisk University, the faculty were unable to make extended visits to Case during the academic year. Fisk S&E faculty also teach during the summer semester, so they are only available for short visits, generally during the time between semesters. Furthermore, Fisk S&E faculty expressed no interest in Case faculty visits to Fisk.

In Year 1, Dr. Sanjukta Hota, Professor in the Department of Mathematics at Fisk University, visited Case for two weeks in June. She was hosted by Dr. Gerald Saidel, Professor in the Department of Biomedical Engineering. Dr. Saidel invited her to participate in a three-day workshop on Molecular Modeling for Integrated Systems (MIMS). Dr. Hota also met with various faculty members in her field of research, mathematical modeling of respiration. Dr. Hota had the opportunity to meet with various Case administrators and the ACES co-PIs. In Year 2, we broadened the faculty exchange program to other minority universities. Dr. Edu Beatrice Suarez-Martinez, Assistant Professor in the Department of Biology at the University of Puerto Rico Ponce, visited Case for two weeks in July. She was hosted by Dr. Joseph Nadeau, Professor and Chair of the Department of Genetics.

During Years 3–5, the ACES Project Coordinator, along with a delegation of faculty and staff, visited Fisk to recruit students for various summer research programs at Case including the ACES Program. At least half the students accepted into the ACES Program each year learned about the research opportunity from those visits. In Years 4 and 5, the ACES Coordinator plus faculty and staff from Case participated in the Charles S. Johnson Think Tank sponsored by the Race Relations Institute at Fisk University.

In Year 5, Dr. Sheila Peters, Professor of Psychology at Fisk, visited Case for one week in both February and May 2008. Dr. Peters' visits to Case were supported by ACES and the Office of the Provost and were hosted by faculty in the Department of Sociology and the Mandel School of Applied Social Sciences. During her two weeks on campus, Dr. Peters covered a lot of ground. Her activities ranged from meetings with associate deans in CAS regarding a potential Case/Fisk service learning initiative, classroom and lunch discussions with undergraduate and graduate students in the Departments of Psychology and

Sociology, meetings with the dean and associate dean of Graduate Studies about mentoring models for faculty and students of color and an endowment fund for minority summer internships and graduate fellowships, to conducting an off-campus leadership development workshop for both personnel and female residents of the Cuyahoga County Juvenile Justice Center.

**P. Minority Pipeline Summer Undergraduate Research Program**

The goal of the ACES minority summer undergraduate research program is to encourage women students from underrepresented groups to pursue academic careers in S&E. Our original plan was to admit five students per summer, but in some years we were able to support a few more students with additional funds from the Center for AIDS Research and individual faculty research grants: seven in Year 1, eight in Year 2, seven in Year 3, and five each in Years 4 and 5. Funding for five students per summer was institutionalized in Year 3 through an HHMI grant to the Department of Biology, with supplemental funding through the Office of the Provost. The ACES fellows receive a stipend as well as support for travel, housing, and food. They are housed together in a suite in one of the new student dormitories. In addition, research funds are provided to faculty mentors to purchase books and supplies for the students.

Initially, women students were recruited from Fisk University building on the Case/Fisk partnership. However, word soon spread through reputation and the ACES web site. In subsequent years, we received increasing numbers of both men and women minority applicants from many different schools, with about 150 applications of highly qualified students in Year 5. Students were encouraged to return for additional summers of research. In Year 5, the program was offered to men students as well. The ACES fellows are placed with Case faculty mentors and conduct research in their area of interest for 10 weeks. The students participate in activities sponsored by other summer research programs, and attend an annual cookout sponsored by the local chapter of the Cleveland Fisk Club. ACES fellows also join other summer research participants in a culminating poster session, which is attended by faculty and students. Below is a summary of the 32 students from eight home institutions, who did research in 14 departments. More information can be found here: [www.case.edu/admin/aces/summer.htm](http://www.case.edu/admin/aces/summer.htm)

<i>Year 1</i>	<i>Institution</i>	<i>Department</i>
Ami Barry	Fisk University	Chemical Engineering
Dionne Hope Griffin	Edinboro University	Chemistry
Kiedra J. Kincade	Fisk University	Psychology
Shayla Merry	Fisk University	Biochemistry
Vivien Rico	University of Maryland	Biomedical Engineering
Elizabeth C. Stewart	Fisk University	Biology
April M. Walls	Fisk University	Chemistry
<i>Year 2</i>		
Juliana Anquandah	College of Wooster	Biochemistry
Jourdan Saree Bowe	Fisk University	Anatomy
Irelys Cruz	University of Puerto Rico, Ponce	Molecular Biology
Dionne Hope Griffin	Edinboro University	Chemistry
Kiedra J. Kincade	Fisk University	Biology
Susana Lopez	Barry University	Chemistry
Dyianweh Queh	Fisk University	Genetics
Willania Studmire	Case Western Reserve University	Psychology

*Year 3*

Juliana Anquandah	College of Wooster	Chemistry
Jourdan Saree Bowe	Fisk University	Chemical Engineering
Inelisse Diaz	University of Puerto Rico, Ponce	Biology
Dionne Hope Griffin	Edinboro University	Chemistry
Marangelly Lopez	University of Puerto Rico, Ponce	Genetics
Karen Pemberton	Fisk University	Pharmacology
Dyianweh Queh	Fisk University	Psychology

*Year 4*

Edwina Clarke	Fisk University	Biology
Andrea Gray	Edinboro University	Chemical Engineering
Joann Marks	Fisk University	Biochemistry
Maylin Rodriguez	University of Puerto Rico, Ponce	Electrical Engineering & Computer Science
Betsy Ruiz	University of Puerto Rico, Ponce	Biology

*Year 5*

Oriana Cruz	University of Puerto Rico, Ponce	Biochemistry
Erica Cedeno Feliciano	University of Puerto Rico, Ponce	Center for RNA
Peter Frank	Westminster College	Civil Engineering
Charles Joseph	Fisk University	Mathematics
Tiffany Thompson	Fisk University	Chemical Engineering

Although we were unable to maintain contact with most ACES fellows, we know of is headed to graduate school in S&E fields. Jourdan Bowe is a graduate student in nutrition here at Case Western Reserve University, Dionne Griffin in pursuing a Ph.D. in chemistry at Miami University and April Walls received her M.B.A. at Case. Three of the five ACES fellows from Year 5 intend to enter graduate programs in their host departments here. Thus, the ACES minority summer undergraduate research program has developed a small pipeline for minority graduate students in S&E.

**Q. Family Friendly Policies**

A number of family friendly policies have been instituted since 2003 that help improve the climate for faculty and assist with recruitment and retention efforts. (All of the polices can be viewed at [www.case.edu/president/aaction/policies.htm](http://www.case.edu/president/aaction/policies.htm)) The Partner Hiring Policy and the Pre-tenure Extension Policy took inconsistently applied informal policies and created formal mechanisms that ensure equitable access. Partner Hiring Policy has helped to recruit and retain 14 faculty members since its adoption in 2004. The Workload Release Policy allows faculty members who are the primary care-giving parents to be granted a work-load release from teaching and service duties for one academic semester following each live birth or each adoption of a child under the age of six. The Domestic Partner Policy, adopted after a state ban on same sex marriages, ensures Case's LGBT faculty that domestic partner benefits are extended to all members of our community and according every individual the same freedoms and rights, including domestic partner benefits.

Information dissemination of new updated policies has been institutionalized through the Faculty Work-Life Brochure which is distributed by the Office of Faculty Diversity. The brochure can be viewed [www.case.edu/admin/aces/documents/work\\_life\\_2008.pdf](http://www.case.edu/admin/aces/documents/work_life_2008.pdf)

## ***PROPOSED RESEARCH***

### **A. Climate Survey**

Two climate surveys were conducted in 2004 and 2007. Their executive summaries are presented below.

#### ***Executive Summary from 2007***

In December 2007 an online, confidential survey on University climate and community was administered to faculty members of Case Western Reserve University (CWRU). The survey's purpose was to examine the quality of the University's academic climate and community and their impact on the experience of being a faculty member at CWRU. A secondary purpose was to assess factors that may affect the recruitment and retention of faculty members, especially women and under-represented minorities. Questionnaire items pertained to overall levels of satisfaction, faculty collegueship and support, the effectiveness of academic leadership, access to opportunities and resources, mentoring, support for work/life integration, sources of personal stress, and the quality of relationships within the campus community. The data obtained were primarily quantitative ratings, with three open-ended qualitative questions at the end of the survey. The survey was sent to 2,592 full-time faculty members at the rank of Instructor and above. There were 602 responses from all schools within the University, including 170 responses from faculty in clinical disciplines in the School of Medicine. The response rate for all schools excluding School of Medicine faculty in clinical departments was 39%. The response rate for all schools, inclusive of faculty in the School of Medicine's clinical departments, was 23%. The main conclusions of the survey are:

1. CWRU faculty members report a positive climate as reflected by:

- Moderate satisfaction with community and academic dimensions of campus life
- Positive relationships with peers and administration
- Moderate support for work-life integration
- Positive quality of collegueship and support in their primary units
- Moderately effective leadership in their primary units
- Feelings of high value and inclusion in their primary units
- Low sense of pressure and restrictions
- Moderate informal mentoring within and outside the University.

CWRU faculty also:

- Perceive that recent transitions in University administration are hopeful and encouraging
- Perceive problems with leadership at all University levels involving the lack of transparency, fairness, trust and vision
- Perceive that resources, infrastructure and supports have declined in the past three years
- Perceive that academic standards and culture have declined
- Perceive that rewards are not commensurate with their overall contributions

- Feel undervalued and disconnected from university-wide initiatives
- Perceive a difficult or adversarial relationship stemming from the financial and work agreements between CWRU and University Hospitals of Cleveland.

2. *Faculty climate has declined on certain key aspects and improved on others since 2004.* Average ratings are significantly lower on the preponderance of comparable items in 2007 as compared with 2004 (including items on satisfaction with community and academic dimensions, quality of relationships within the campus community, quality of collegueship and support in the primary unit, and effectiveness of the primary unit head) except for items reflecting supports for faculty work-life integration which are significantly higher in 2007 as compared with 2004.

3. *Faculty climate is consistently influenced by the School/College.* Significant differences among Schools/College exist on most factors and items analyzed.

4. *Primary unit heads (deans and chairs) are critical agents in the development and maintenance of productive and collegial workplaces, and an engaged faculty community.*

5. *Faculty members experience the highest stress from securing funding for research and scholarship, and from scholarly productivity.* Female faculty members report higher stress from scholarly productivity and advising responsibilities than do male faculty members.

6. *Attention to the career development of longtime faculty members, particularly Associate Professors, is needed.* Assistant Professors are the most satisfied with their compensation and professional development, and receive the most mentoring from within the University. Associate Professors report feeling the least sense of value and inclusion in their primary units and the least satisfaction with administrative support for research and teaching. Professors report the least stress from teaching responsibilities and review and promotion processes, and the least sense of pressure and restrictions.

7. *Informal mentoring from within and outside the University remains moderate while formal mentoring within and outside the University remains low.*

8. *CWRU has improved certain key aspects of the climate for women faculty.* In the 2004 Faculty Climate Survey, women faculty in comparison to men faculty reported lower community and job satisfaction, lower ratings of the leadership effectiveness of their primary unit head, and lower resources and supports for academic performance from their primary unit head. These significant differences disappeared in the 2007 survey. However, similar to 2004, the current survey revealed that female faculty members, in comparison with male faculty members, continue to report lower ratings of value and inclusion in their primary unit, higher ratings that gender and race make a difference in how faculty are treated in their primary unit, and a greater sense of pressure and restrictions.

#### *Recommendations:*

Based on the results of this analysis, the Resource Equity Committee recommends the following actions to continue the process of faculty community and climate development throughout the University environment.

#### *Primary Unit (School/College or Department) Level:*

1. *Leadership Development:* Create a Leadership Institute for managerial and leadership enhancement of department chairs and School/College deans, associate deans and assistant deans.
2. *Faculty Mentoring and Development:* Improve formal and informal mentoring of pre-tenure faculty (Instructors and Assistant Professors) within each primary unit. Prioritize the mentoring,

support, and development of Associate Professors. Provide academic career coaching for new or transitioning faculty, and executive leadership development coaching for Professors.

3. *Climate Improvements*: Continue to improve the day-to-day academic experience of faculty within the primary unit as follows:
  - a. Enhance the quality of collegueship and the overall experience of inclusion in the primary unit.
  - b. Enforce zero-tolerance for faculty misbehavior and incivility.
  - c. Improve the fair allocation of assignments, resources, and supports to advance academic performance, and make these decision processes transparent.
  - d. Continue efforts to support and improve faculty work-life integration.

*University Administration Level:*

4. *Leadership Accountability*: Increase the accountability of primary unit heads (deans and chairs) for leadership of an engaged faculty community and creation of a productive and inclusive academic culture that excels in the integrity of and respect for all members. Require regular evaluations of School/College deans and department chairs by faculty.
5. *Enhancements in Campus Resources and Infrastructure to Specifically Support the Academic Enterprise*: Continue to prioritize the generation of resources to support research, scholarship and teaching activities since these are critical to faculty perceptions of University climate.
6. *Extension to Staff and Students*: Undertake efforts to survey staff and students about their experiences of campus community and climate.

***Executive Summary from 2004***

In May 2004 an online, confidential survey on university climate and community was administered to faculty members of Case Western Reserve University (Case). The survey's purpose was to examine the quality of the university's academic community and its impact on the experience of being a faculty member at Case, and to assess factors that may be adversely affecting the recruitment and retention of highly qualified faculty members, especially women and under-represented minorities. Questionnaire items pertained to faculty involvement in campus activities, faculty interactions and collegueship, academic leadership, access to resources, and overall levels of satisfaction. The data obtained were primarily quantitative ratings, with one open-ended qualitative question at the end of the survey.

508 full-time faculty members responded to the survey. After dropping poor quality responses, and responses where school/college was not identified, a final sample of 240 responses (39%) were analyzed from all schools/colleges other than the School of Medicine, and 206 responses were analyzed from the School of Medicine (12%). The main conclusions of the survey are:

- (1) Overall, Case faculty:
  - a) Are moderately involved in academic activities on campus, and are involved in extracurricular activities on campus to a low degree
  - b) Perceive positive relationships with peers and administration
  - c) Feel valued for their work and successes
  - d) Experience moderate support for work-life integration
  - e) Believe there is effective leadership in their primary units (school/college or department)
  - f) Are moderately clear on allocations of resources, and perceive moderately fair distribution of resources
  - g) Would prefer more effective mentoring
  - h) Are generally satisfied with their experience of and engagement with Case

- (2) Some Case faculty:
- a) Perceive that teaching and service are undervalued relative to research
  - b) Perceive that resources, infrastructure and rewards are not commensurate with their overall contribution to Case
  - c) Are disconnected from university-wide initiatives
  - d) Suggest that Case needs to work on enhancing a community of inclusion
- (3) In particular, women faculty, in comparison with their male colleagues:
- a) Feel less supported and valued in their school/college or department
  - b) Perceive that gender, race, and family obligations make a difference in how faculty members are treated
  - c) Experience a greater sense of pressure and restrictions
  - d) Report lower ratings of their academic unit head's leadership, and lower ratings of their provision of resources and supports
  - e) Experience more mentoring from outside their primary units
  - f) Perceive that compensation and non-research supports are less equitably distributed
  - g) Perceive that compensation, office and lab space, teaching requirements, and clerical support are allocated with less transparency
  - h) Are less satisfied with their overall community and job experience at Case.

*Recommendations*

The quantitative and qualitative data from this survey represent a range of faculty perspectives and depict a common interest in enhancing the climate at Case. Based on the results of this analysis, the Subcommittee on Faculty Engagement, Motivation, and Commitment and the Resource Equity Committee suggest the following actions to continue the process of development throughout the University environment.

*Primary Unit (School/College or Department) Level:*

1. Institute formal policies and provide adequate resources for enhanced leadership training of department chairs and school/college deans.
2. Improve the day-to-day academic experience of women faculty and junior faculty (instructors and assistant professors) within the primary unit by:
  - a) Enhancing the quality of collegueship and the overall experience of inclusion in the primary unit
  - b) Paying attention to the allocation of academic assignments, resources, and supports by the primary unit head (chair or dean) to advance academic performance
  - c) Improving work-life integration.
3. Improve mentoring and development of all faculty in the primary unit.
4. Improve transparency in school/college and departmental decision processes and in the implementation of existing faculty policies.

*University Administration Level:*

1. Work closely with the Faculty Senate to determine and institutionalize means for enhancing the campus-wide faculty community experience.
2. Increase support for and accountability of primary unit heads (deans and chairs) for leadership of a vibrant faculty community and creation of an inclusive academic culture.

3. Continue to publicize and adequately fund the work of the University Diversity Officer, emphasizing his/her role as facilitator for faculty inclusion and equity oversight in recruitment, employment, advancement, and other areas related to faculty duties.

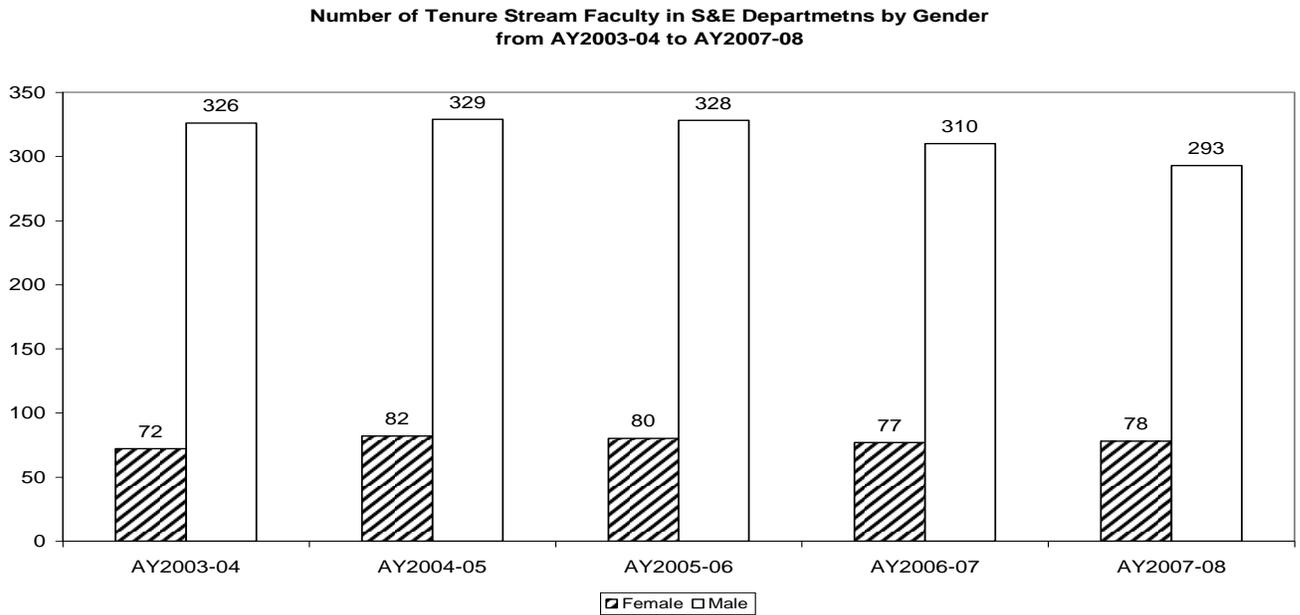
4. Undertake similar efforts to survey staff and students about their experience of university community and climate.

The 2004 report is found here: [www.case.edu/admin/aces/faculty\\_engagement\\_10\\_04.pdf](http://www.case.edu/admin/aces/faculty_engagement_10_04.pdf) , the 2007 report is found here: [www.case.edu/admin/aces/documents/2007Faculty\\_Climate\\_Final.pdf](http://www.case.edu/admin/aces/documents/2007Faculty_Climate_Final.pdf)

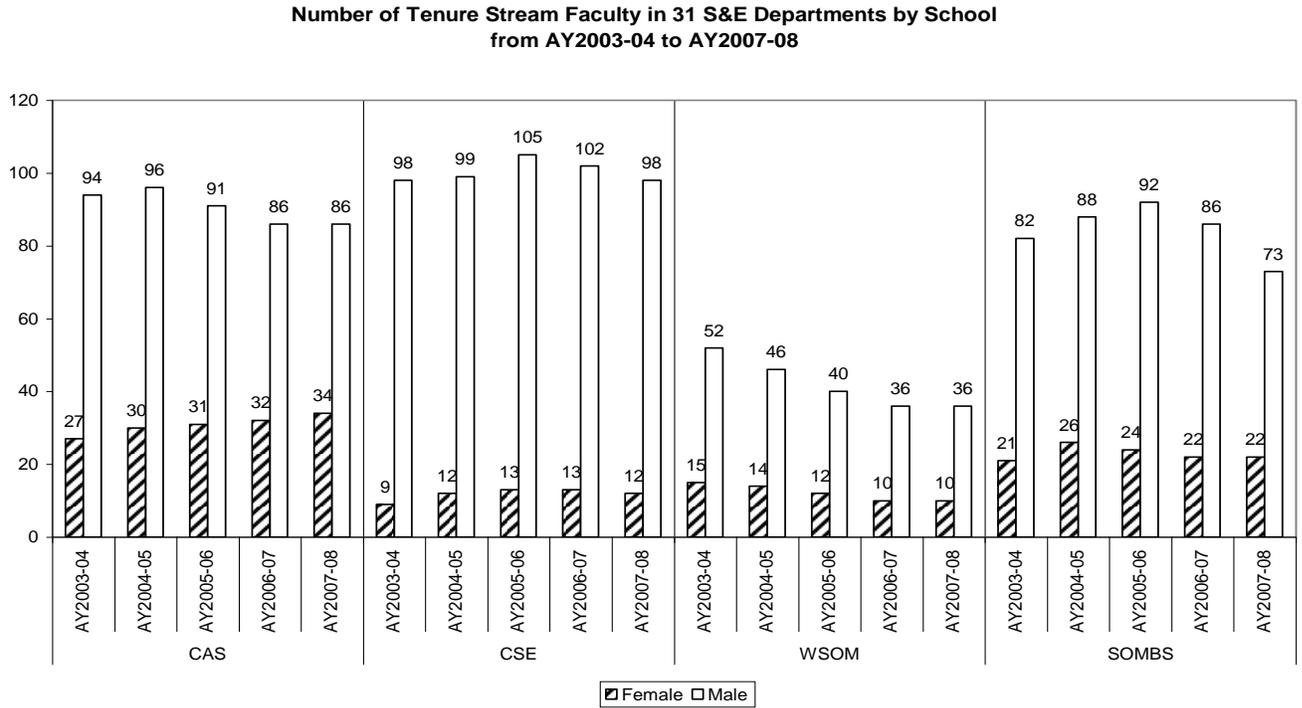
**B. NSF Indicator Data – Temporal Trends of Indicators**

The full report of the indicator data (5-year cumulative) is available here [www.case.edu/admin/aces/documents/5\\_Year\\_NSF\\_Indicators.pdf](http://www.case.edu/admin/aces/documents/5_Year_NSF_Indicators.pdf), and select key indicators are presented in the Figures below.

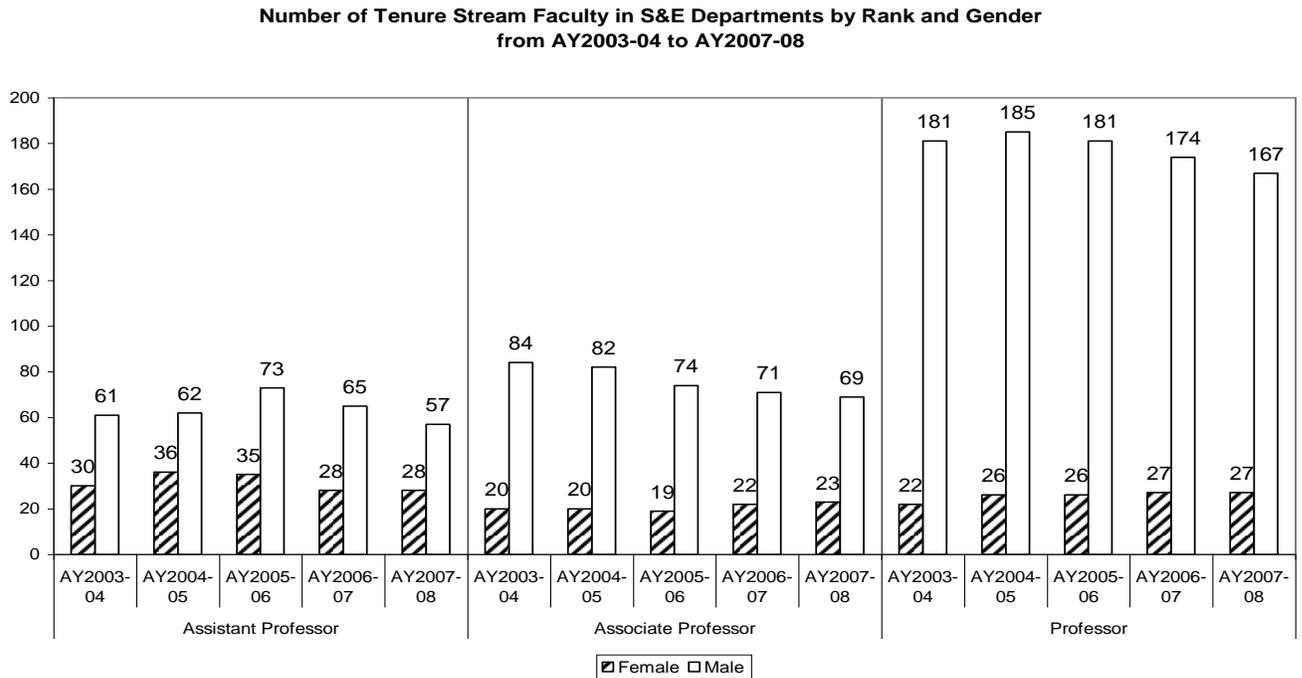
**Figure 2: Number of S&E Tenure Stream Faculty by Gender**



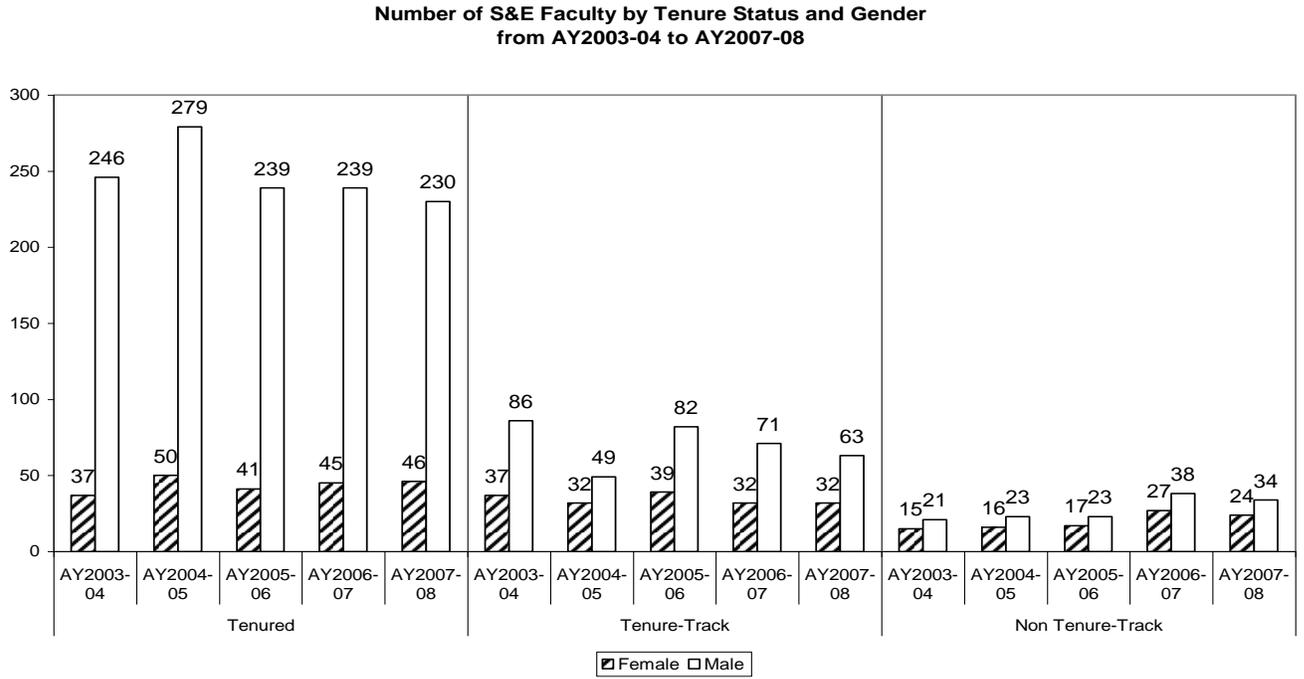
**Figure 3: Number of S&E Tenure Stream Faculty by Gender and School**



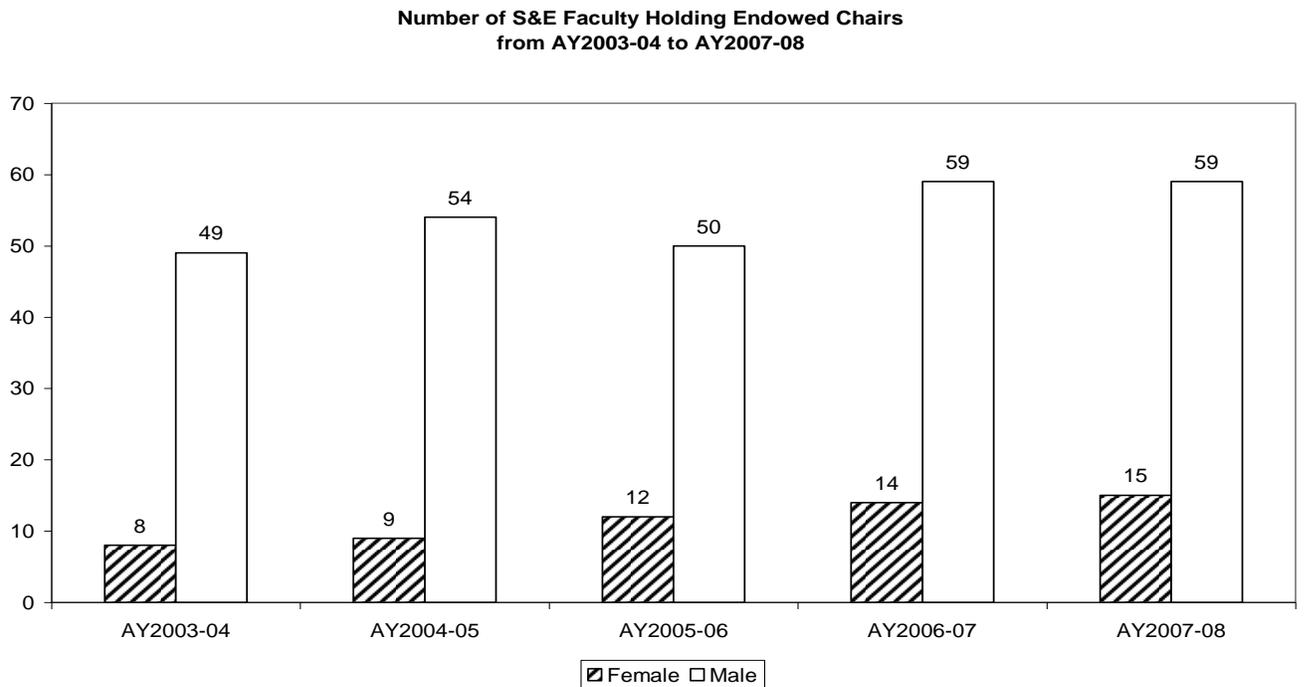
**Figure 4: Number of S&E Tenure Stream Faculty by Gender and Rank**



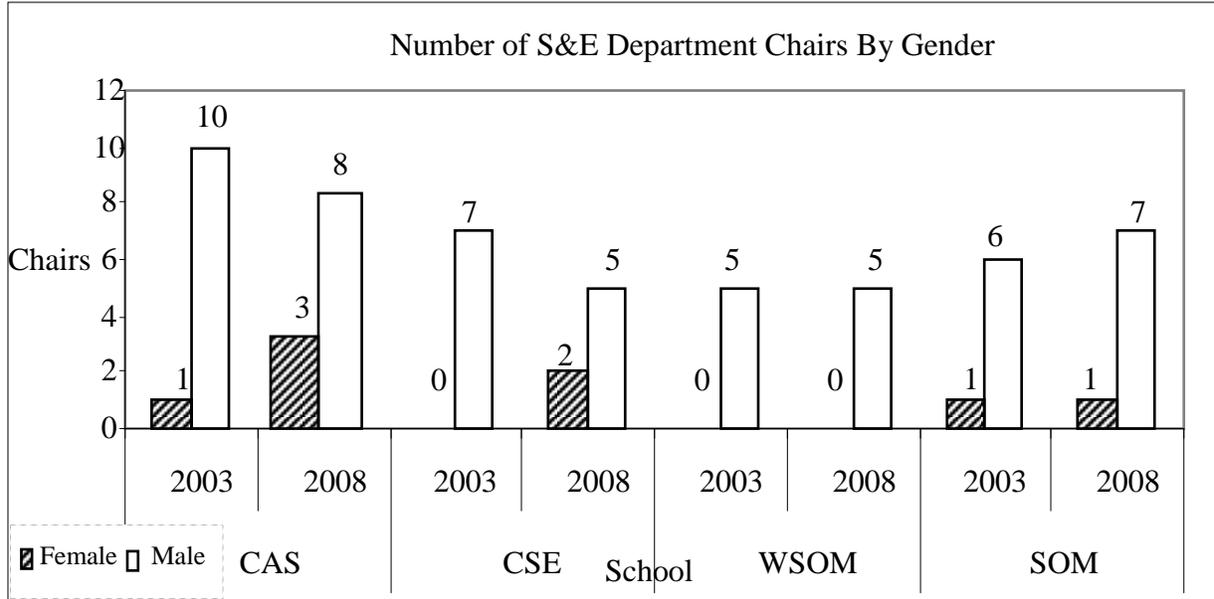
**Figure 5: Number of S&E Tenure Stream Faculty by Gender and Tenure Status**



**Figure 6: Number of S&E Tenure Stream Faculty Holding Endowed Chairs By Gender**



**Figure 7: Number of S&E Department Chairs by Gender**



**C. 2004 Focus Groups with Faculty in Phase I Departments**

The full report of the 2004 Focus Group Study is available at:

[www.case.edu/admin/aces/documents/Test\\_Depts\\_Focus\\_Group\\_Report\\_2004.pdf](http://www.case.edu/admin/aces/documents/Test_Depts_Focus_Group_Report_2004.pdf)

The purpose of conducting the 2004 Focus Group Study was two-fold. First, it sought to establish baseline qualitative data about the experiences of women and men faculty in four Phase 1 (test) departments prior to full implementation of the NSF ADVANCE program. The second aim of these interviews was to extend and verify whether climate and conditions observed in the university-wide 2000 faculty focus group study conducted by the Case Resource Equity Committee (REC) still existed.

Three focus groups were conducted: one for mixed rank male faculty; one for mixed rank female faculty; and a final focus group for department chairs. Focus groups ranged from 3 to 9 participants. Seven additional individual interviews, following the same protocol and script, were offered to faculty members whose schedules conflicted with the timing of the focus groups. Among the 4 test departments, there are a total of 97 primary faculty members; 80% of this sample is male (N=78) and 20% is female (N=19). Overall, 23 faculty members participated, for a response rate of 24%, with 19 of the male faculty from the test departments, 47% of the female faculty members from test departments, and 100% of the department chairs participating. The data collected from the respondents resulted in 11 hours of audio-tape and 80 pages of transcribed text.

Findings from the focus group and individual interviews contained the following trends in perception, across both male and female respondents:

1. Proportional rarity of women is an issue at Case.
2. Female faculty members deal with the token dynamics associated with being a statistical minority.

3. The structure of the academic environment is gendered, advantaging men's careers.
4. Women perceive their rarity as a disadvantage, whereas men view it as an advantage.
5. CWRU, as an institution, is generally resistant to change and improvement efforts.

#### **D. Science Department Study**

The full report of the Science Department Study can be found at [www.case.edu/admin/aces/CaseSciDeptStudyExecSumry.pdf](http://www.case.edu/admin/aces/CaseSciDeptStudyExecSumry.pdf)

The study "A Good Place to Do Science: An Exploratory Case Study of an Academic Science Department", was completed by Co-PI Diana Bilimoria and doctoral student C. Greer Jordan, in 2005. The purpose of the study was to examine an academic science work environment that has been conducive to the advancement of female and male scientists in order to identify factors that facilitated cooperation, high quality science, and inclusion. The study was used several qualitative methods including document & archival research, direct observation, and 29 interviews of departmental members, which included faculty, staff, post-docs, and doctoral students.

The study found that the basis of the department's culture was a set of values and beliefs about scientists and the goals of science that are reflected in the types of interactions that occur within the department. Most scientists in this department valued doing high quality science in an interactive way. Three widely held beliefs included:

1. Good science is the pursuit of meaningful, significant advancements of knowledge.
2. Scientists achieve good science through interactions that provide and generate resources.
3. Anyone can do high quality science if they can learn quickly, are well trained, can communicate their ideas, are creative and willing to work hard.

In addition to shared values and beliefs, four other factors emerged from the analyses as key components of a cooperative and inclusive department culture, as follows.

*Constructive interactions* support processes that foster cooperation and produce high quality science and inclusion. They are listed in increasing order of complexity, trust level required, and work impact:

- Collegial Interactions – extending respectful, civil and congenial behaviors towards others
- Tacit Learning Interactions – information sharing and modeling behaviors that convey work norms, processes, practices, and other undocumented knowledge about work.
- Relational Interactions – taking personal interest in others, expressing concern and caring for others emotionally and in support of their work
- Generative Interactions – Interactions, through which important resources are provided, received and or generated between individuals and for the group.

*Participative departmental activities* initiated or explicitly supported by the chair, facilitated constructive interactions:

- Team teaching with participation across faculty ranks.
- A variety of department social events, some after hours and others, which are family friendly.
- Faculty meetings in which important information is shared with all faculty members, with an opportunity for decision-making input.
- Faculty recruiting where all faculty members have input into the selection of new faculty. Broad support for the new faculty member is established through this activity.

- Regular applicable research presentations and seminars that stimulate ideas and provide feedback and modeling of approaches to research and effective presentation of ideas.

*Department wide learning and inclusion processes* stimulated and supported wide influence in decision-making, engagement, learning about one another, and disseminating, comparing and creating a shared understanding of the external environmental factors surrounding the department. These processes also play an important role in embedding norms, behaviors, values, and beliefs into the culture of the department. These processes included:

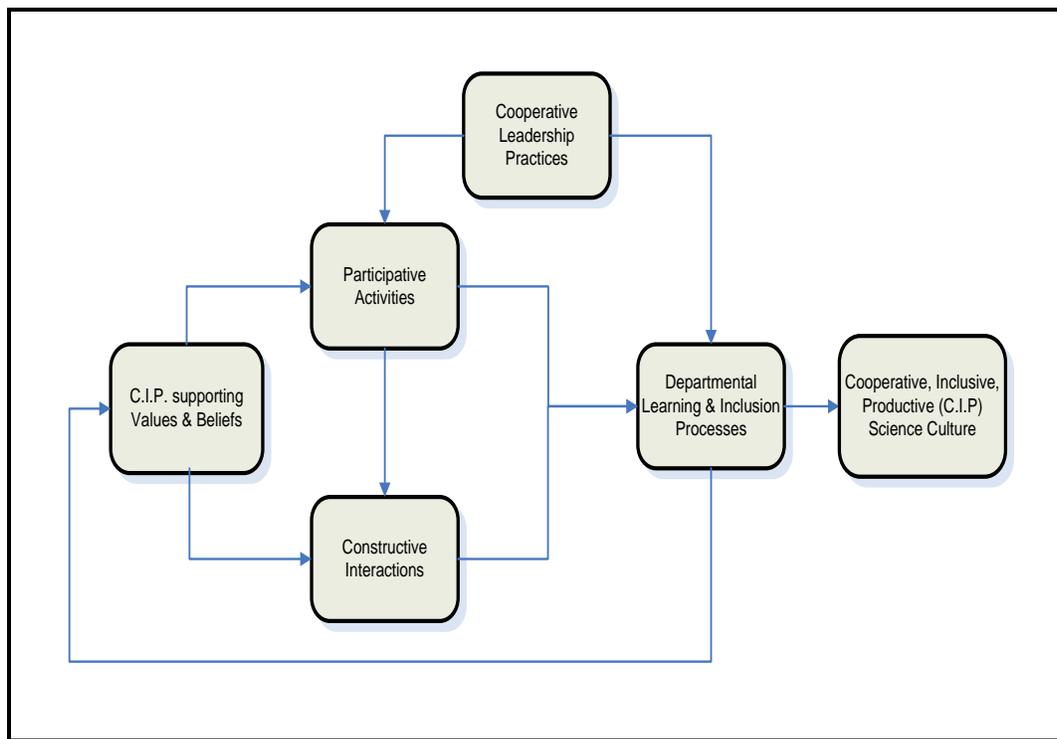
- Transparent decision-making
- Engagement of faculty across ranks
- Dissemination of information important to work
- Creation and or sharing of resources important to work
- An open faculty selection process

*Cooperative leadership practices* of the department chairs facilitated the development of the culture of the department, including:

- Supporting the creation and advancement of good science, regardless of who is developing it.
- Seeking input from all affected in decision-making
- Promoting meaningful opportunities for interaction
- Treating everyone fairly and equitability
- Using the role of chair in service of the scientific community within the department

We proposed a theoretical model of the relationship between the factors identified as shown in the figure below.

**FIGURE 8: A Model of a Cooperative, Inclusive, Productive Academic Culture**



## **E. Views of Chairs and Women Faculty about key success factors**

We were unable to complete this study because the doctoral student, who was planning to undertake this topic for her dissertation under Dr. Bilimoria's supervision, moved out of the country.

## **F. Candidate Pool Analysis**

The full report of the Candidate Pool Study is available here:

[www.case.edu/admin/aces/documents/Candidate\\_Pool\\_Study.pdf](http://www.case.edu/admin/aces/documents/Candidate_Pool_Study.pdf)

In 2007 Diana Bilimoria and a research team (including ACES senior research associates Xiang fen Liang and Jeffrey Turell) conducted a study to track the gender and racial diversity and outcomes of faculty searches occurring in the 31 ACES departments from between the academic years 2001/02 – 2006/07. These candidate pools reflect the applicants considered for new faculty hires, and represent an opportunity to promote diversity in the hiring of new faculty.

The searches included in the study were only those conducted for hiring full-time faculty. The study collected the school, department, and year of the search, the number of candidates in the total search, the number of candidates on the short list by gender, and the rank and tenure status of the hire. Percentage female and male applicants in each search were calculated. Stratified analyses of each search's candidate pool, short list, offer(s), and hire were performed by gender and race, respectively. A linear regression analysis was performed to assess the relationship between candidate pool diversity and short list representation of female candidates and of under-represented minority candidates. In addition, a logistic regression analysis was performed to assess the effect of candidate pool and short list diversity on hiring a female candidate or underrepresented minority (URM) candidate.

Table 2 below shows that in the initial pool of applicants totaling 9,055, from a total of 193 searches, 985 candidates advanced to the short list for their respective searches. Overall, females composed 15.9% of the candidate pools, 30.7% of the short lists, and 38.7% of the offers for hire. When stratified by race, underrepresented minority (URM) candidates composed 2.3% of the candidate pools, 3.8% of the short lists, and 5.2% of the hires. Figure 9 below shows the temporal trends (over six years) by gender of candidate pools, short lists and hires.

The study found that there was a linear relationship between percent females (positive) and percent males (negative) in the candidate pool on female representation on the short list. A linear relationship also existed between percent URM applicants in the candidate pool and URM representation on the short list. The proportion of females on the short list was significantly related to the likelihood of hiring a female and the proportion of URM candidates on the short list was significantly related to the likelihood of selecting an URM candidate.

The study's recommendations included:

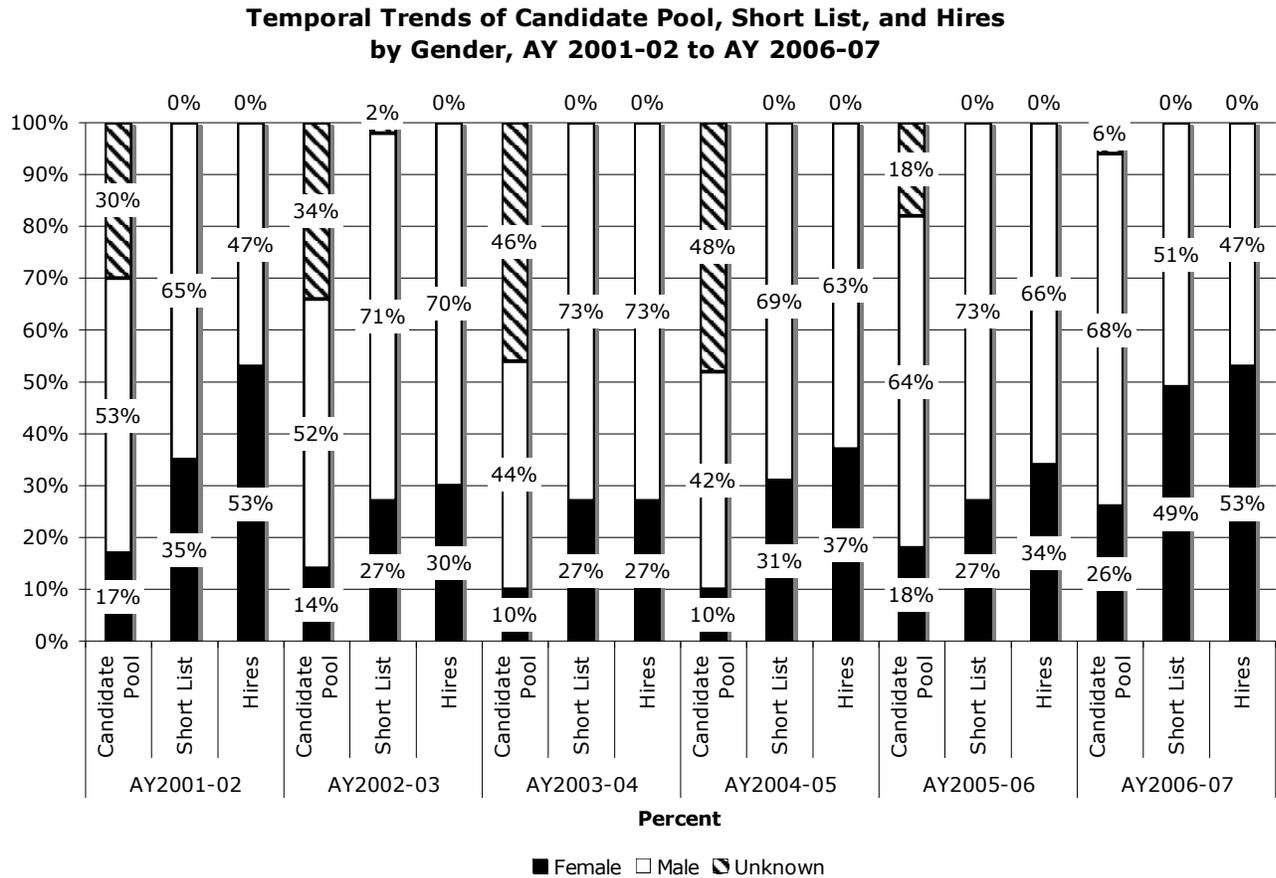
- (1) To diversify the faculty body, improve faculty search procedures to systematically expand candidate pools and shortlists to include women and underrepresented minority faculty.
- (2) Improve and institutionalize the collection of data on candidate pools for each faculty search conducted at the University.

(3) Expand this study beyond science and engineering (S&E) searches.

**Table 2: Candidate Pool, Short List and Hires by Gender**

	Candidate Pool	Short List	Hires
Females	1439 (15.9%)	302 (30.7%)	75 (38.9%)
Males	5031 (55.6%)	678 (68.8%)	118 (61.1%)
Unknown	2585 (28.5%)	5 (0.5%)	0 (0%)
Total	9055	985	193

**Figure 9: Temporal Trends by Gender**



## **G. Second Year Faculty Survey**

As of 10/03/07, 58 responses were received. After deleting 3 responses with missing values, a total of 55 observations remained. In 2006, there were 31 observations. In 2007, as of Oct 3, there were 27 observations. New Faculty Climate Survey is available at:

[http://spruce.case.edu/newfaculty/new\\_faculty.htm](http://spruce.case.edu/newfaculty/new_faculty.htm)

Using a scale of 1 being Strong Influence, 2 being Moderate Influence, 3 being Slight Influence, and 4 being No Influence, participants were asked to think back and choose the reasons that influenced their decision to accept the position at Case. 79% reported *Reputation of the University* as having a moderate to strong influence, 69% reported that the *Atmosphere of department/collegiality* had a moderate to strong influence, 67% reported that *Opportunity for Advancement* had a moderate to strong influence. Additional details are available in the tables in the full report which can be downloaded at: [www.case.edu/admin/aces/documents/2nd Year Faculty Survey.pdf](http://www.case.edu/admin/aces/documents/2nd_Year_Faculty_Survey.pdf)

Again using the 1-4 scale of influence, participants were asked to rate how personal decisions affected their decision to accept the position at CWRU. In the personal life influences *Amenities of living in an urban area (airport, arts and cultural activities, sports venues, etc.)* (74 %) and *Affordability of housing* (67 %) had any significant influence in the decision to accept a position at CWRU, followed by *Quality of life in Northeast Ohio* at 60%.

The final section of the survey looked at those services or activities that helped the new faculty member become acclimated to the university during the first year(s) on campus and asked that the participants to rate their importance to their success at Case. Using a 1 – 4 scale of importance with 1 being Very Important, 2 being Important, 3 being Somewhat Important and 4 being Not Important.

Results from the frequency tables indicated that the most important institutional services and activities perceived by new faculty included *Informal Mentoring by colleagues* (90% reported this as important), *Mentoring by your Chair* (68%), *Faculty Development Workshops* (60%), and *Academic Careers in Engineering and Science* (35%).

The offices or centers that were perceived to be helpful for making Case a welcoming climate by new faculty members included the Newcomers Committee (n=21) and UCITE (n=17).

This survey has been institutionalized and taken over by the Office of Institutional Research which plans to continue to administer the survey to the faculty entering their third year in the fall of each year. Because CWRU participates in the Harvard COACHE survey, the timing of our internal survey will be designed to not over-survey the population.

## **H. Exit Survey**

An online Faculty Exit was designed and implemented in 2005. As part of institutionalization the survey is now part of the Office of Institutional Research. The exit interview was developed through careful review of the 2004 Case Climate and Accreditation Survey, the NSF indicators for ADVANCE, and the already developed survey instruments from NMSU, Kansas State, and Virginia Tech. The Faculty Exit Survey prior to 2008 used external partner PerceptIS Inc., to administer the survey. The online survey can be viewed at <http://eodsurvey.case.edu/exit/exit.htm>

The Case Faculty Exit Interview questions focus on three areas, 1) Reasons for Accepting the Position at Case, 2) Rating Your Experience at Case, and 3) Reasons for Leaving your Position at Case. The information from the Exit Survey is used by the Office of Faculty Diversity to identify areas for improvement and trends in attrition.

An exit survey report is available at [www.case.edu/admin/aces/documents/Results\\_Faculty\\_Exit\\_Survey.pdf](http://www.case.edu/admin/aces/documents/Results_Faculty_Exit_Survey.pdf)

#### *Results from the Faculty Exit Survey*

Of the 48 participants, 42 (87.5%) responded that they were leaving Case voluntarily, 5 (10.4%) were leaving Case involuntarily, and 1 respondent (2.1%) did not answer the question. Of the 42 respondents leaving Case voluntarily, 5 (11.9%) were retiring and one (2.3%) was a visiting professor.

All of the following analyses will focus on the 36 participants who were leaving Case voluntarily, not retiring, and were non-visiting professors.

Of these 36 participants, 27 (75%) had accepted an academic position at another university.

Though we cannot calculate significant differences due to the small sample size of respondents in this study, 83% of men leaving Case said they had accepted an academic position at another university, compared to only 67% of women.

Those not retiring and leaving Case voluntarily cited the following reasons for their departure:

- Personal illness (5.6%)
- Family member illness (2.8%)
- Lack of opportunity for partner (11.1%)
- Wish to work fewer hours (5.6 %)
- Wish to concentrate on teaching (5.6%)
- Joining industry or choosing another profession (5.6%)
- Moving to private practice (2.8%)
- Difficult working conditions (41.7%)
- Unfavorable tenure process (19.4%)
- Recruited to more favorable position at another institution (58.3%)

Again, though we cannot calculate significant differences due to the small sample size of respondents in this study, some striking differences did exist between men and women in terms of cited reasons for departure. Specifically, 50% of women said they were leaving because of difficult working conditions, compared to only 35% of men. An unfavorable tenure process was cited by 33% of women but only 13% of men.

### **I. Faculty Salary Comparisons Between CWRU and Its Peer Schools**

The Faculty Salary Survey report for 2006-2007 was created using the Association of American Universities Data Exchange (AAUDE) and was submitted to the CWRU Faculty Senate Compensation

Committee by the Office of Institutional Research. The entire report can be downloaded at this link [www.case.edu/admin/aces/documents/AAU\\_Salary\\_Report\\_to\\_FSCC\\_Rev4-08.pdf](http://www.case.edu/admin/aces/documents/AAU_Salary_Report_to_FSCC_Rev4-08.pdf)

## **SECTION II. STATUS AND OUTCOMES OF OTHER ACTIVITIES (NOT PROPOSED)**

### **A. COACHE**

In January 2006, CWRU participated in the COACHE survey, conducted by Harvard Graduate School of Education. A total of 42 universities participated in the COACHE survey during this initial offering. Only tenure-track junior faculty participates in the COACHE survey, which is intended to evaluate their experiences at our university and to provide information useful for the development of recruitment and retention strategies. The survey allowed CWRU to benchmark the experience of our junior faculty relative to the experience of junior faculty working at other universities. The comparison group we selected consisted of Dartmouth, Brown, Tufts, Northeastern and Stanford. Results could be disaggregated according to gender, race, school, etc.

Survey results for CWRU's junior faculty were markedly lower and more negative than the experience of junior faculty at our comparison-group universities. Approximately 70% of questions in the "Nature of Work" category were evaluated more negatively by CWRU junior faculty than their peers at the comparison group. For the category of "Climate, Culture and Collegiality" approximately 50% of the questions were evaluated significantly more negative by CWRU junior faculty than did their peers. Most significant was the result of the "Global Satisfaction" questions, which showed that 100% of the responses of CWRU junior faculty were significantly lower than those of their peers.

A number of differences in experiences by gender or race were also noted in the survey. These included:

- All segments of the junior faculty at Case included "childcare" and "assistance in obtaining externally funded grants" as two of the top three issues ranked as important but ineffective at Case.
- Male junior faculty members and white junior faculty members included "spouse/partner hiring program" in their top three lists.
- Junior faculty women at Case included "financial assistance in securing housing" as a top-three issue.
- Junior faculty of color at Case included "paid or unpaid research leave during the probationary period" as a top-three issue.

CWRU will again participate in the COACHE survey in early 2009 to see if any of the new policies and practices now in place at CWRU have improved the overall experience of our junior faculty.

### **B. Sloan Survey**

In January/February 2006, CWRU participated for the first time in the Sloan Survey on Faculty Flexibility. This survey records information on university policies and practices that impact on the careers of tenured faculty members. Examples include: leave policies, the ability to adjust the tenure

clock and/or faculty responsibilities for health or family-care reasons, the existence of part-time tenure tracks, phased retirement policies, etc. A total of 55 universities participated in the Sloan survey in 2006.

The analysis of CWRU's submission to the Sloan Survey revealed that our University does not rank above the median for all universities in terms of policies and practices that affect faculty career flexibility. A number of recommendations on areas for improvement could be identified. These include:

- Tenure clock stoppage – development of a written statement to internal and external reviewers indicating how the work of faculty who stop the tenure clock should be evaluated.
- Leave for new mothers – establish policies providing full or partial replacement pay for new biological mothers during leaves after the normal childbirth leave (typically 6-8 weeks) during the academic year. (The current CWRU policy provides support that varies by length of service.)
- Personal disability leave not related to childbirth - establish full paid leave for all. (The current CWRU policy provides support that varies by length of service.)
- Leaves in general – for non-sabbatical leaves, develop a statement that states both the university's and the faculty member's expectations for the leave period.
- Part-time appointments for tenured faculty and job-sharing - establish a formal policy that allows tenure guarantees and benefits for faculty on part-time appointments.

Several of these recommendations are currently under consideration.

In addition, the Sloan Survey was able to point to a number of items related to university culture and the frequency and effectiveness of communications related to flexibility policies and career decisions. Requiring university administrators (department chairs, deans, provosts) to be accountable for encouraging and managing flexible work arrangements by way of performance reviews should be considered. Additionally, investing more resources in tracking the use of flexibility policies could point to potential improvements in university processes.

### **C. Dean's Fellows for Advancing Collegiality**

During the fall of 2007, Dr. Linda Garverick, consultant to ACES, designed and taught a leadership development program in the Case School of Engineering (CSE), using a group-coaching format. Twelve senior faculty participated in the nine-session program. At least one faculty from each of the seven engineering departments participated. The program was the first of its kind and created a learning community within the Case School of Engineering to advance collegiality in the school. Participants learned about the factors that limit the advancement of women and other under-represented groups as well as issues that hinder faculty retention. In addition, participants gained skill in communicating with and influencing others as well as developing a collective, inclusive leadership perspective. Each participant, either individually or in teams, developed a change project initiative to "Advance Collegiality" within her or his department or school.

The program culminated with coordination of the recommended change project initiatives with senior leadership in the school of engineering: a working session to present change recommendations to department chairs, and a facilitated dialogue with Deputy Provost Lynn Singer and CSE Dean Norman Tien. Both the substance of and quality of interaction in these two final sessions spoke to the impact this program had on the professional development and collegiality among those who participated.

Recommendations were made in five categories, all of which the Dean expressed interest in moving forward over the short or mid-term:

1. Fostering greater faculty interaction and building intellectual community by holding higher-quality interdepartmental seminars, creating a faculty lounge, and experimenting with structured opportunities for faculty to interact.
2. Laying the structural foundation for collaborative research by improving tracking of research and teaching contributions
3. Improving faculty engagement and retention, beginning with formalizing a mentoring program for junior faculty
4. Improving the handling of grievances and holding faculty accountable by implementing an ombudsperson in the school of engineering
5. Improving communication between administration and faculty by holding “Town Hall” meetings

Each recommendation was presented in the form of an initial implementation and evaluation plan. Feedback from both the chairs and the Dean will be used to refine and finalize these plans. Dr. Garverick will continue to coach participants, individually or as teams, as they implement projects during the spring of 2008.

Based on the recommendations of this group, the Dean created a new position, Associate Dean of Faculty Development, in the School of Engineering which is now held by Professor Ica Manas-Zloczower. Dr. Manas-Zloczower has since led multiple faculty/chair and faculty development workshops and has invited the Faculty Diversity Office to speak to the Promotion and Tenure Committee and created a faculty lounge. Positive comments were received by the participants.

**D. Department Initiative Grants (DIG’s)**

In Year 3, ACES began a Departmental Initiative Grant program to promote positive climate change in the departments. DIGs were not originally part of our ADVANCE proposal, but were added based on the successful experience at other ADVANCE universities. DIG proposals were submitted by the chair or faculty member in the department. The proposals described faculty input in the planning process to show faculty buy-in. Like Distinguished Lectureships and Opportunity grants, DIGs were reviewed by the Internal Advisory Board. All eight proposals received were funded in Years 3–5.

<b>DEPARTMENT</b>	<b>INITIATIVE</b>
Physiology & Biophysics	Graduate Student Seminar Program
Economics	Seminar Program
Organizational Behavior	Seminar Program
Biomedical Engineering	Faculty Mentoring
Women’s Studies	Strategic Planning
Nursing	Retreat Speaker
Sociology	Computer Equipment
Mechanical & Aerospace Engineering	Faculty Lounge

## **E. Grassroots Climate Change Committee**

In order to complement the top-down efforts of the ADVANCE program to catalyze climate change at CWRU, a bottom-up initiative was launched. In year two of the ADVANCE project, a small (~12) group of male faculty members from S&E departments who were pre-disposed to promoting women faculty was recruited for this effort (by the Provost). Later, in year four of this project, a few women were added to this group. This group became known as the Grassroots Climate Change Committee (GRCCC).

The rationale for forming this Committee was 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.

Unfortunately, the GRCCC never gained much momentum in its early efforts. Initially, one of the GRCCC members took over leadership of this group, but a series of personal and professional complications diverted his energy from the project. Subsequently, in year four of the project, new co-leaders of the effort were identified. This reinvigorated GRCCC considered a number of different options for actions and events. In Spring 2007, the GRCCC, adopted a mission statement:

“The Climate Change Committee is a grass roots effort to engage tenured faculty members in advocating for a campus-wide culture of equity and transparency. The Committee is comprised of university-wide faculty members who have familiarized themselves with the recommendations from campus research and focus groups about the state of the campus climate. The Committee is developing activities to improve faculty retention rates and overall faculty satisfaction.”

The first GRCCC public event in Spring 2007 was a “Pre-Tenure Women Faculty Success Lunch,” which focused on the question “What do you need to know to be a success here at Case?” The goal was to offer multiple perspectives on questions about the tenure process, how to get good mentoring, etc. The event was advertised campus-wide and all senior faculty members were requested to forward the invitation to their mentees and untenured colleagues. A total of sixteen 16 pre-tenure women faculty attended the event.

During Spring 2008, the GRCCC conducted a “speed-mentoring” event held in conjunction with CWRU’s annual Research ShowCASE. At this event, members of the GRCCC (and other recruits) met for brief (10-15 min) periods with anyone who wanted to walk-in for career advice, or evaluations of his/her resume. The primary customers (about 20 in all) of this event were graduate students and postdocs in the S&E fields. New handouts “How-to for Mentors” and “How-to for Mentees” were distributed. The event was rated highly by those participating. The 2008 event summary can be found here: [www.case.edu/admin/aces/documents/Speed\\_Mentoring\\_Eval\\_2008.pdf](http://www.case.edu/admin/aces/documents/Speed_Mentoring_Eval_2008.pdf)

The 2007 event summary can be found here:

[www.case.edu/admin/aces/Report\\_Year4/Speed\\_Mentoring\\_Evaluation\\_Summary.pdf](http://www.case.edu/admin/aces/Report_Year4/Speed_Mentoring_Evaluation_Summary.pdf)

## **F. Offer Letter Data Analysis: 2003-2007**

The full report of the Offer Letter Data Analysis can be found here: [www.case.edu/admin/aces/documents/Offer\\_Letter\\_Study\\_Summary.pdf](http://www.case.edu/admin/aces/documents/Offer_Letter_Study_Summary.pdf)

The Resource Equity Committee undertook a 5-year descriptive study of initial resources provided to new faculty at Case Western Reserve University. Initial resources have a long-term impact on the success of new faculty in launching productive research and teaching careers.

The purpose of this study was to examine the representation and status of women and minority faculty who are new hires. Offer letters were obtained from the Provost's office. Faculty offer letters from 31 science and engineering (S&E) departments in four schools were included in this study. The four schools are College of Arts and Sciences (CAS), Case School of Engineering (CSE), Weatherhead School of Management (WSOM), and School of Medicine Basic Science Departments (SOMBS).

Only offer letters for faculty appointments approved by the Board of Trustees were included. Part-time, visiting, short-term, or summer faculty appointments were excluded.

The collection of offer letters started in Fall 2003 and ended in Spring 2008. As of the end of 2007, 109 offer letters were collected, including 32 offers letters (29.4%) from CAS, 22 (20.2%) from CSE, 46 (42.2%) from SOMBS, and 9 (8.3%) from WSOM. The percentage of offer letters collected from 2003 to 2007 account for 13.8%, 28.4%, 21.1%, 12.8%, and 23.9% of total number of new offers, respectively.

For each offer letter, variables identified based on offer letter content description include: college, department, gender of offer recipient (female, male), rank offered (lecture/instructor, assistant professor, associate professor, professor), tenure at hire (hire with tenure, hire without tenure), tenure status (tenure-track, not-tenure-track, not applicable if hire with tenure), year of appointment (ranging from 2003 to 2007), base salary offered, contract type (9-month, 12-month, unable to determine), summer salary (applicable only to 9-month contract), start-up package amount.

Descriptive statistics (e.g., frequency, percentage, mean and standard deviation, cross tab, and t-test) were conducted. The findings of the study are presented in terms of trends by gender, trends by rank, trends by tenure status, trends of start-up funds, and trends of base salary.

Trends by Gender: Of the 109 offers, 32% (n = 35) were given to females and 68% (n = 74) were given to males. Within each school, the number and percentage of new appointments stratified by gender vary. The percentage of females offered positions ranges from 18.2% in CSE to 44.4% in WSOM. Except during 2006, when 57% (n = 8) of the offers were made to females, the percentage of females obtaining offers during 2003-2007 ranged from 21.7% to 32.3%.

Trends by Rank: 59.6% of new appointments (n = 65) were assistant professor positions, followed by instructors 24.8% (n = 27), professor 8.3% (n = 9), and associate professor 7.3% (n = 8). Across all ranks, 62.5% (n = 5) represented the highest percentage of female hires - at the associate professor level, and 22.2% (n = 2) represents the lowest percentage of female hires - at the professor level. Within SOMBS, 52.2% (n = 24) of new offers were at the assistant professor level, and 37% of new offers were at the instructor level. This trend was similar at other schools, with over 70% of new appointments to junior levels (instructor and assistant professor positions) in each school.

Trends by Tenure Status: Of the 109 new appointments, 13.8% (n = 15) appointments offered tenure at hire; 86.2% (n = 94) appointments did not offer tenure at hire. Of the 15 appointments with tenure at hire, 33.3% (n = 5) went to females, and 66.7% (n = 10) went to males. Of the 94 appointments without tenure at hire, 68% appointments (n = 64) were tenure-track positions, 31% appointments (n = 29) were non-tenure-track positions, and 1 appointment (1%) was tenure-not-applicable. Of the 64 tenure-track appointments, 28% of the offer recipients were female, and 72% were male. Of the 29 non-tenure-track positions, females accounted for 38%, and males accounted for 62%.

Trends of Start-up Funds and Trends of Base Salary: 34.3% of (n = 36) appointments were 12-month-contract, 54.3% of (n = 57) appointments were 9-month-contract, and the remaining 11.4% of (n = 12) appointments did not mention contract type. The availability and amount of start-up funds varied by school, as did the base salary amounts.

## **G. Salary Equity Study**

The Resource Equity Committee conducted salary equity studies for the academic years 2002, 2003, 2004, 2005, 2006, and 2007. Data were obtained from the university's Office of the Provost and Office of Institutional Research. Professor Nahida Gordon led the clean-up and analysis of the data. Salary equity was assessed using a multivariable analysis of possible gender and racial/ethnic bias in current rank and in faculty salaries. The presentations are available at:

[www.case.edu/admin/aces/Report\\_Year4/Salary\\_Equity.pdf](http://www.case.edu/admin/aces/Report_Year4/Salary_Equity.pdf) and  
[www.case.edu/admin/aces/documents/Salary\\_Equity\\_Study\\_06-16-08.pdf](http://www.case.edu/admin/aces/documents/Salary_Equity_Study_06-16-08.pdf)

Results of the salary equity studies are:

1. Differences in salary between male and female faculty cannot be explained fully by differences in Rank, Discipline, Tenure Status, Years since Hire, Years in Rank, Highest Degree, and Years since attaining the Highest Degree.
2. Female faculty are predominantly in lower ranks while male faculty are in higher ranks.
3. The differential in tenure and rank status contribute further to disparities in salary.
4. African American, Hispanic, and Native Americans faculty are underrepresented in most schools and ranks.

Comparison of the salary equity analyses over years indicated that disparities in schools involved within the NSF ADVANCE (ACES) program appear to be smaller than Schools not involved with ACES. This is particularly true of the College of Arts and Sciences – Sciences and Case School of Engineering.

Recommendations include:

1. Continue the process of maintaining data integrity.
2. Perform a study of rank and retention to understand the relationship between equity and gender.
3. Strongly recommend that data necessary for salary equity studies be maintained and archived for each academic year on a permanent and ongoing basis.
4. Strongly recommend that an equity analysis be undertaken annually independently of University administration.
5. Continue interventions to bring equity in rank and salary by gender and racial/ethnic background.

## **H. Gender Differences in Faculty Productivity & Satisfaction Study**

Co-PI, Dr. Diana Bilimoria and her research team undertook a study entitled “Faculty at Early, Middle, and Late Career Stages: Gender Effects on Academic Work Experiences”. The role of faculty career stages has not been extensively studied in the literature on academic career development, and not much is known definitively about whether and how faculty careers systematically differ for female and male faculty. Using three definitions of career stage (age, years teaching in higher education, and years at current institution), we examined the dynamics and issues at each career stage surrounding the academic work experience of women and men, focusing on faculty work hours, research productivity, satisfaction and perception of equity, and compensation. We studied responses from a weighted sample of faculty holding positions at not-for-profit, four-year, degree-granting institutions participating in the 2004 National Study of Postsecondary Faculty survey, information which is available in the public domain. Our conclusions about faculty career development encompassed both gender differences and career stage differences and trends, describing the academic work experience of faculty in early, middle and late career stages. This study is now under review for publication consideration.

## **I. Technology Transfer for Women in Science**

In April 2005, PI Dr. Lynn Singer convened a three-hour workshop entitled “Technology Transfer for Women in Science: Why You Should Care” on the eve of Research ShowCase, an event that brings together hundreds of faculty, postdoctoral, and graduate researchers at Case for a day of collaboration, creativity, and innovation with community and industry partners from the Northeast Ohio region. As women scientists are less likely than their male counterparts to commercialize their research through involvement in Technology Transfer, thus underutilizing economic resources, the goal of the workshop was to highlight the benefit of creating policy, climate and a culture that encourages diversity and gender balance in the academic, scientific and business worlds. The half-day symposium served as a primer for women researchers in the art of commercializing research.

Joseph Jankowski, Ph.D., Assistant Vice President for Biomedical Sciences Technology Transfer, presented Tech Transfer 101 which covered distinctions between inventor/invention, processes for patent, license and university agreements. His presentation is available at [www.case.edu/admin/aces/documents/Tech\\_Transfer\\_101\\_PPT.pdf](http://www.case.edu/admin/aces/documents/Tech_Transfer_101_PPT.pdf) Nick Frollini, Scott Shane, and Lynn Ann Gries presented information on “Starting and Financing a New Company”, which highlighted how women could be successful in the commercialization process. Lynn Singer closed the session by leading a panel of pioneering women scientists and entrepreneurs (Mary Laughlin, Donna Richardson, Bettie Sogor and Pamela Davis), discussing the practicalities of commercialization. [www.case.edu/admin/aces/documents/Tech\\_Transfer\\_University\\_Spin\\_Offs\\_PPT.pdf](http://www.case.edu/admin/aces/documents/Tech_Transfer_University_Spin_Offs_PPT.pdf)

## **J. Study of Nationwide NSF ADVANCE Institutional Transformation**

Dr. Bilimoria and her coauthors developed a model of comprehensive institutional transformation for enhanced gender equity and inclusion (see Figure 10) based on their review of the experience of 19 universities funded by NSF ADVANCE awards and interviews with key change agents at these universities. The model describes the facilitating factors, program initiatives, institutionalization, research and evaluation supports, and outcomes of the transformations undertaken. Conclusions of the study were that simplistic or piecemeal solutions cannot eradicate systematic, historical, and

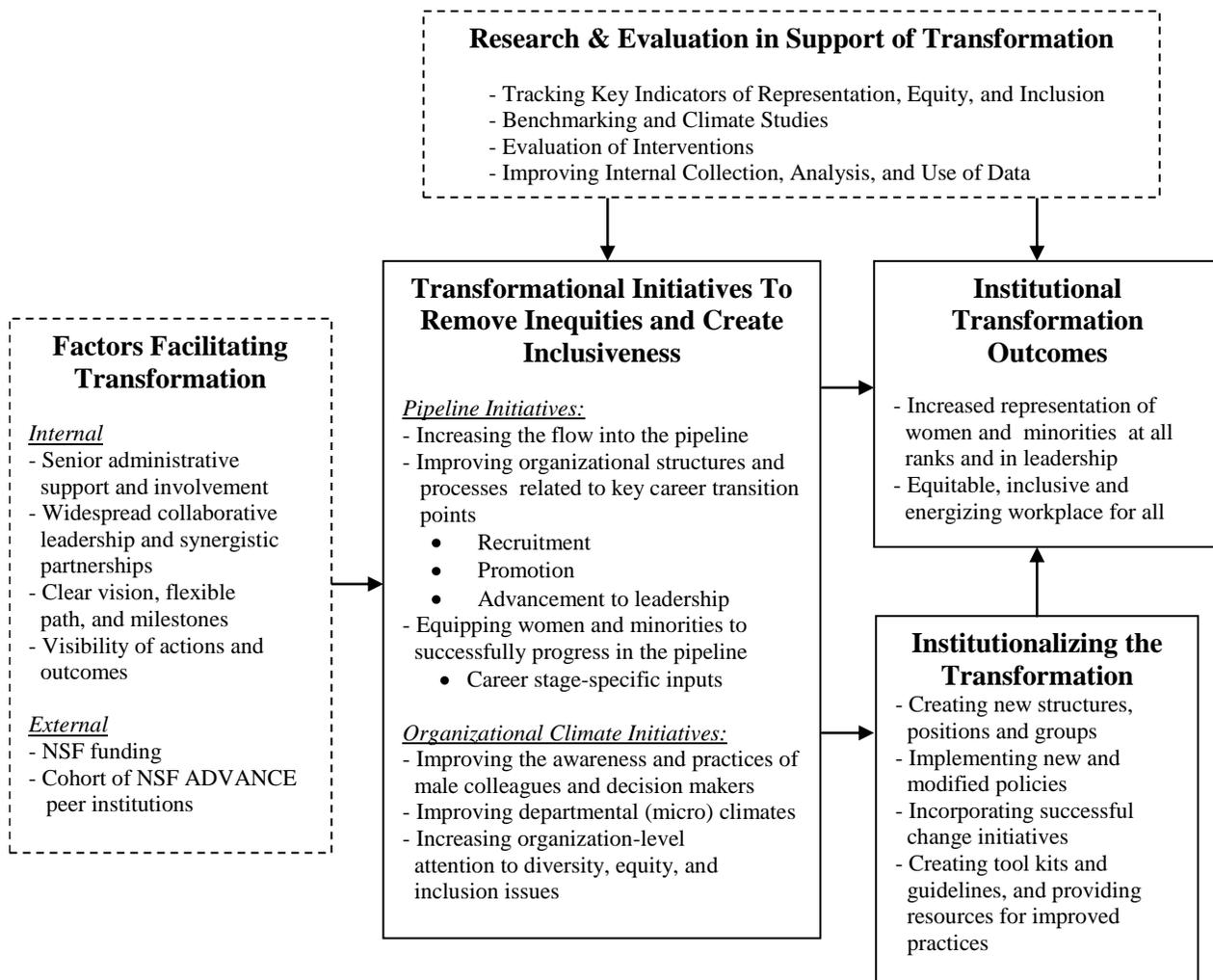
widespread gender inequities. Needed instead is the systematic transformation of mental models, structures, processes, and practices that perpetuate inequity. As the ADVANCE experience shows, the targeted implementation and institutionalization of change initiatives that have both an individual and organizational focus can collectively lead to successful and sustainable increases in the participation and inclusion of women and other minority groups, and offer the possibility of improving the environment for all.

A summary presentation of this study can be found at:

[www.case.edu/admin/aces/documents/Title IX Bilimoria Breaking Barriers 7-23-08.pdf](http://www.case.edu/admin/aces/documents/Title_IX_Bilimoria_Breaking_Barriers_7-23-08.pdf)

It is published in: Bilimoria, D., Joy, S. & Liang, X. Breaking Barriers and Creating Inclusiveness: Lessons of Organizational Transformation to Advance Women Faculty in Academic Science and Engineering, *Human Resources Management*, 2008, 47, 3: 423-441.

**Figure 10: A Model of Institutional Transformation for Gender Equity and Inclusion**



### SECTION III: ADVANCE – ACES PERSONNEL

<b>ACES PI's/ACES Team</b>
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**Name:** Lynn Singer

**Title:** Professor, Department of General Medical Sciences and Psychiatry (SOM) and  
Deputy Provost for Academic Programs

**Role:** Principal Investigator, ACES Program, 2003-2008

**Percentage:** 20% per year, 2003-2008

**ACES Program contributions:** Meets regularly with deans and other administrators. Gives ACES Presentations to departments/schools, chair's council, provost's leadership retreat, ADVANCE PI Meetings, women faculty, faculty senate and leadership retreats.

**Name:** Mary Barkley

**Title:** Professor and Chair, Department of Chemistry (CAS)

**Role:** Co-PI, ACES Program 2003-2008

**Percentage:** 30% per year, 2003-2008

**ACES Program contributions:** Facilitated project and mentoring activities in the Schools of Arts & Sciences, the School of Medicine, and in the science and engineering departments. She also coordinated all activities of the minority pipeline.

**Name:** John Angus

**Title:** Professor Emeritus, Chemical Engineering (CSE)

**Role:** Co-PI, ACES Program, 2003-2004

**Percentage:** 15% per year, 2003-2004

**ACES Program contributions:** Facilitated project activities in the School of Engineering and in science and engineering departments.

**Name:** Diana Bilimoria

**Title:** Professor, Organizational Behavior (WSOM)

**Role:** Co-PI, ACES Program; Chair, REC, 2003-2008

**Percentage:** 30% per year, 2003-2008

**ACES Program contributions:** Facilitated project, mentoring and coaching activities in the School of Management and in the science and engineering departments. She provides oversight for the quantitative and qualitative research evaluation efforts of the project.

**Name:** Shanna Beth McGee

**Title:** Faculty Diversity Officer, Office of Equal Opportunity and Diversity

**Role:** Faculty Diversity, ACES Program

**Percentage:** 10% per year, 2003-2008

**ACES Program contributions:** Responsible for the oversight and implementation of new search committee guidelines and methods for conducting entrance and exit interviews.

**Name:** Amanda Shaffer

**Title:** Interim Faculty Diversity Officer, Office of Equal Opportunity and Diversity

**Role:** Faculty Diversity, Training and Development, ACES Program

**Percentage:** 100% per year, 2003-2005

**ACES Program contributions:** Developed tools and training for search committees, and developed the methods for collecting the qualitative and quantitative data on recruitment and retention activities and outcomes. Hosted faculty development workshops and networking events, and diversity training workshops for undergraduate and graduate students.

**Name:** Dorothy Miller,

**Title:** Clinical Associate Professor, Mandel School of Applied Social Sciences and  
Director, Flora Stone Mather Center for Women

**Role:** Faculty Development, ACES Program

**Percentage:** 10% per year, 2003-2008

**ACES Program contributions:** Hosted networking events for faculty, and diversity training workshops for undergraduate and graduate students.

**Name:** Donald Feke

**Title:** Professor & Interim Chair, Chemical Engineering (CSE)

**Role:** Co-PI, ACES Program

**Percentage:** 5% per year, 2004-2008

**ACES Program contributions:** Responsible for ACES project activities in the School of Engineering and in the science and engineering department.

**Name:** Hunter Peckham

**Title:** Professor, Biomedical Engineering (CSE)

**Role:** Co-PI, ACES Program

**Percentage:** 0% per year, 2004-2008

**ACES Program contributions:** Participates in ACES Meetings and collaborates with ACES senior personnel.

<b>SENIOR RESEARCH ASSOCIATES &amp; RESOURCE EQUITY COMMITTEE</b>
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**Name:** Patricia Higgins

**Title:** Professor, Nursing

**Role:** Resource Equity Committee

**Percentage:** 1 month salary support per year, 2003-2008

**ACES Program contributions:** Research and evaluation of the project.

**Name:** Eleanor Stoller

**Title:** Professor, Department of Sociology

**Role:** Resource Equity Committee

**Percentage:** 1 month salary support per year, 2003-2005

**ACES Program contributions:** Research and evaluation of the project.

**Name:** Cyrus Taylor

**Title:** Dean, College of Arts & Sciences

**Role:** Resource Equity Committee  
**Percentage:** 1 month salary support per year, 2003-2006  
**ACES Program contributions:** Research and evaluation of the project.

**Name:** Susan Perry  
**Title:** Senior Research Associate  
**Role:** Researcher  
**Percentage:** 100% per year, 2004-2006  
**ACES Program contributions:** Worked with Research Equity Committee (REC) to collect baseline data, assisted with the development, and analysis of questionnaires, conducted focus groups and assisted with the research and evaluation of other ACES initiatives.

**Name:** Nahida Gordon  
**Title:** Professor, Nursing  
**Role:** Resource Equity Committee  
**Percentage:** 2 month salary support per year, 2005-2008  
**ACES Program contributions:** Research and evaluation of the project.

**Name:** Xiangfen Liang  
**Title:** Senior Research Associate  
**Role:** Researcher  
**Percentage:** 100% per year, 2005-2008  
**ACES Program contributions:** Worked with Research Equity Committee (REC) to collect baseline data, assisted with the development, and analysis of questionnaires, conducted focus groups and assisted with the research and evaluation of other ACES initiatives.

**Name:** Jeffrey Turell  
**Title:** Senior Research Associate  
**Role:** Researcher  
**Percentage:** 100% per year, 2006-2008  
**ACES Program contributions:** Worked with Research Equity Committee (REC) to collect baseline data, assisted with the development, and analysis of questionnaires, conducted focus groups and assisted with the research and evaluation of other ACES initiatives.

**Name:** William Dale Dannefer  
**Title:** Professor and Chair, Department of Sociology (CAS)  
**Role:** Resource Equity Committee  
**Percentage:** 1 month salary support per year, 2006-2008  
**ACES Program contributions:** Research and evaluation of the project.

## GRADUATE STUDENTS

**Name:** Linda Robson

**Title:** Graduate Student

**Role:** Research Assistant – NSF ACES Evaluation

**Percentage:** 67% per year, 2003-2004

**ACES Program contributions:** Research, data collection, and evaluation.

**Name:** Bonnie Richley Cody

**Title:** Graduate Student

**Role:** Research Assistant – NSF ACES Evaluation

**Percentage:** 67% per year, 2003-2004

**ACES Program contributions:** Research, data collection and evaluation.

**Name:** Kleio Akrivou

**Title:** Graduate Student

**Role:** Gender Awareness Training – Flora Stone Mather Center for Women

**Percentage:** 100% per year, 2003-2006

**ACES Program contributions:** Coordinated & conducted gender awareness training for undergraduates.

**Name:** C. Greer Jordan

**Title:** Graduate Student

**Role:** Research Assistant – NSF ACES Evaluation

**Percentage:** 100% per year, 2003-2008

**ACES Program contributions:** Research, data collection, evaluation, and study on the Department of neuroscience.

**Name:** Radhika Panday

**Title:** Graduate Student

**Role:** Research Assistant – NSF ACES Evaluation

**Percentage:** 100% - 2004-2005

**ACES Program contributions:** Research, data collection, and evaluation.

**Name:** Simy Joy

**Title:** Graduate Student

**Role:** Research Assistant – NSF ACES Evaluation

**Percentage:** partial support, 2005-2007

**ACES Program contributions:** Research, data collection, and evaluation.

**Name:** Verena Murphy

**Title:** Graduate Assistant

**Role:** NSF Research Evaluation – Mentoring Program

**Percentage:** partial support, 2005-2007

**ACES Program contributions:** Research, data collection, evaluation and mentoring.

**Name:** Allison Baker  
**Title:** Graduate Student  
**Role:** Research Assistant – NSF ACES Evaluation  
**Percentage:** partial support, 2006-2007  
**ACES Program contributions:** Research, data collection, and evaluation.

**Name:** Lakisha Miller  
**Title:** Graduate Student  
**Role:** Research Assistant – NSF ACES Evaluation  
**Percentage:** partial support, 2007-2008  
**ACES Program contributions:** Research, data collection, evaluation and mentoring.

<b>STAFF</b>
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**Name:** Annabel Bryan  
**Title:** Project Coordinator  
**Role:** Coordinated all activities of the ACES Program  
**Percentage:** 100% per year, 2003-2004  
**ACES Program contributions:** Coordinated all administrative related activities, including publicizing programs and events, distributing promotional materials, and drafting correspondence on reports and project activities. Coordinated activities of the Internal Review Committee for Opportunity Grant submissions/awards. Responsibilities included managing the NSF ADVANCE budget and Opportunity Grant budgets, and providing events planning for the Distinguished Lectureships, Minority Summer Undergraduate Research Program, and the Fisk Faculty Exchange Program.

**Name:** Shelley White  
**Title:** Project Coordinator  
**Role:** Coordinated all activities of the ACES Program  
**Percentage:** 100% per year, 2004-2008  
**ACES Program contributions:** Coordinated all administrative related activities, including publicizing programs and events, distributing promotional materials, and drafting correspondence on reports and project activities. Coordinated activities of the Internal Review Committee for Opportunity Grant submissions/awards. Responsibilities included managing the NSF ADVANCE budget and Opportunity Grant budgets, and providing events planning for the Distinguished Lectureships, Minority Summer Undergraduate Research Program, and the Fisk Faculty Exchange Program.

**Name:** Victor Chappelle  
**Title:** Accounting Clerk  
**Role:** Worked on the reconciliation of the ACES yearly budget  
**Percentage:** 50% per year, 2005-2006  
**ACES Program contributions:** Responsible for the reconciliation of budgets for the NSF ADVANCE award and Opportunity Grants.  
**Name** Monica Cunningham

**Title:** Project Coordinator

**Role:** Coordinated all activities of the ACES Program

**Percentage:** 100% per year, 2006-2007

**ACES Program contributions:** Coordinated all administrative related activities, including publicizing programs and events, distributing promotional materials, and drafting correspondence on reports and project activities. Responsibilities included managing budgets for the NSF ADVANCE award and Opportunity Grants. Coordinated activities of the Internal Review Committee for Opportunity Grant submissions/awards.

**Name:** Tracy Paige

**Title:** Project Coordinator

**Role:** Coordinated all activities of the ACES Program

**Percentage:** 100% per year, 2007-2008

**ACES Program contributions:** Coordinated all administrative related activities, including publicizing programs and events, distributing promotional materials, and drafting correspondence on reports and project activities. Coordinated activities of the Internal Review Committee for Opportunity Grant submissions. Management and budget reconciliation of the NSF ADVANCE award and Opportunity Grant budgets.

## STUDENT WORKERS

**Name:** Casey Hicks

**Title:** Webmistress

**Role:** ACES Program Student Employee

**Percentage:** 10-15 hours per week, 2004-2008

**ACES Program contributions:** Website design and maintenance, data entry and clerical support, and special projects as assigned.

**Name:** Tricia Belka

**Title:** Office Assistant

**Role:** ACES Program Student Employee

**Percentage:** 10-15 per week, 2004

**ACES Program contributions:** Website maintenance, data entry and clerical support.

**Name:** Ann Thomas

**Title:** Office Assistant

**Role:** ACES Program Student Employee

**Percentage:** 10-15 hours per week, 2004-2005

**ACES Program contributions:** Created and distributed flyers, coordinated activities (and travel) for the Distinguished Lectureships.

**Name:** Indigo Bishop Blakely

**Title:** Office Assistant

**Role:** ACES Program Student Employee

**Percentage:** 10-15 hours per week, 2005

**ACES Program contributions:** Served as the student coordinator and contact for the Summer Undergraduate Research Program. Provided clerical and data entry support for the program.

**Name:** Mihir Patel

**Title:** Office Assistant

**Role:** ACES Program Student Employee

**Percentage:** 10-15 hours per week, 2005-2006

**ACES Program contributions:** Created and distributed flyers, for the Distinguished Lectureships. Provided clerical support and data entry support for the program.

**Name:** Demetrius Colvin

**Title:** Office Assistant

**Role:** ACES Program Student Employee

**Percentage:** 10-15 hours per week, 2006-2007

**ACES Program contributions:** Served as the student coordinator and contact for the Summer Undergraduate Research Program. Provided clerical and data entry support for the program.

**Name:** Chien Cheng

**Title:** Office Assistant

**Role:** ACES Program Student Employee

**Percentage:** 10-15 hours per week, 2007-2008

**ACES Program contributions:** Served as the student coordinator and contact for the Summer Undergraduate Research Program. Provided clerical and data entry support for the program.

**Name:** Seraina Murphy

**Title:** Office Assistant

**Role:** ACES Program Student Employee

**Percentage:** 10-15 hours per week, 2007

**ACES Program contributions:** Served as the student coordinator and contact for the Summer Undergraduate Research Program. Provided clerical and data entry support for the program.

<b>STEERING COMMITTEE</b>
---------------------------

**Name:** Samuel Savin

**Title:** Dean, College of Arts & Sciences (CAS)

**Role:** Member of the ACES Program Steering Committee

**Percentage:** No cost to NSF, 2003-2004

**ACES Program contributions:** Guided the direction and facilitated implementation of the ACES Project for CAS.

**Name:** Mohsen Anvari

**Title:** Dean, Weatherhead School of Management (WSOM)

**Role:** Member of the ACES Program Steering Committee

**Percentage:** No cost to NSF, 2003-2004

**ACES Program contributions:** Guided the direction and facilitated implementation of the ACES Project for WSOM.

**Name:** Robert Savinell

**Title:** Dean, Case School of Engineering (CSE)

**Role:** Member of the ACES Program Steering Committee

**Percentage:** No cost to NSF, 2003-2006

**ACES Program contributions:** Guided the direction and facilitated implementation of the ACES Project for CSE.

**Name:** Ralph Howitz

**Title:** Dean, School of Medicine (SOM)

**Role:** Member of the ACES Program Steering Committee

**Percentage:** No cost to NSF, 2003-2006

**ACES Program contributions:** Guided the direction and facilitated implementation of the ACES Project for SOM.

**Name:** Sandra Russ

**Title:** Interim Dean, College of Arts & Sciences (CAS)

**Role:** Member of the ACES Program Steering Committee

**Percentage:** No cost to NSF, 2003-2006

**ACES Program contributions:** Guided the direction and facilitated implementation of the ACES Project for CAS.

**Name:** Jerold Korngold

**Title:** Acting Dean, Weatherhead School of Management (WSOM)

**Role:** Member of the ACES Program Steering Committee

**Percentage:** No cost to NSF, 2004-2005

**ACES Program contributions:** Guided the direction and facilitated implementation of the ACES Project for WSOM.

**Name:** Mark Turner

**Title:** Dean, College of Arts & Sciences (CAS)

**Role:** ACES Program Steering Committee

**Percentage:** No cost to NSF, 2004-2006

**ACES Program contributions:** Guided the direction and facilitated implementation of the ACES Project for CAS.

**Name:** Stephen Haynesworth

**Title:** Associate Professor & Associate Dean, College of Arts & Sciences (CAS)

**Role:** ACES Program Steering Committee

**Percentage:** No cost to NSF, 2004-2006

**ACES Program contributions:** Guided the direction and facilitated implementation of the ACES Project for CAS.

**Name:** Myron Roomkin

**Title:** Dean, Weatherhead School of Management (WSOM)

**Role:** ACES Program Steering Committee

**Percentage:** No cost to NSF, 2005-2006

**ACES Program contributions:** Guided the direction and facilitated implementation of the ACES Project for WSOM.

**Name:** Pamela Davis

**Title:** Dean, School of Medicine (SOM)

**Role:** ACES Program Steering Committee

**Percentage:** No cost to NSF, 2006-2008

**ACES Program contributions:** Guided the direction and facilitated implementation of the ACES Project for SOM.

**Name:** Jerold Goldberg

**Title:** Interim Provost,

**Role:** ACES Program Steering Committee

**Percentage:** No cost to NSF, 2007-2008

**ACES Program contributions:** Guided the direction and facilitated implementation of the ACES Project.

**Name:** Mohan Reddy

**Title:** Dean, Weatherhead School of Management

**Role:** ACES Program Steering Committee

**Percentage:** No cost to NSF, 2007-2008

**ACES Program Contributions:** Guided the direction and facilitated implementation of the ACES project for Weatherhead.

**Name:** Norman Tien

**Title:** Dean, Case School of Engineering

**Role:** ACES Program Steering Committee

**Percentage:** No cost to NSF, 2007-2008

**ACES Program Contributions:** Guided the direction and facilitated implementation of the ACES project for CSE.

**Name:** Cyrus Taylor

**Title:** Dean, College of Arts & Sciences

**Role:** ACES Program Steering Committee

**Percentage:** No cost to NSF, 2007-2008

**ACES Program Contributions:** Guided the direction and facilitated implementation of the ACES project for CAS.

**INTERNAL ADVISORY BOARD**

**Name:** Jonatha Gott

**Title:** Associate Professor, Center for RNA (SOM)

**Role:** Reviewer

**Percentage:** No cost to NSF, 2003-2008

**ACES Program contributions:** Reviewed submissions for faculty seeking Opportunity Grants.

**Name:** Susan Helper

**Title:** Professor, Department of Economics (CAS)

**Role:** Reviewer

**Percentage:** No cost to NSF, 2003-2008

**ACES Program contributions:** Reviewed submissions for faculty seeking Opportunity Grants.

**Name:** Anne Hiltner

**Title:** Professor, Department of Macromolecular Science (CSE)

**Role:** Reviewer

**Percentage:** No cost to NSF, 2003-2008

**ACES Program contributions:** Reviewed submissions for faculty seeking Opportunity Grants.

**Name:** Diana Kunze

**Title:** Professor, Department of Neurosciences (SOM)

**Role:** Reviewer

**Percentage:** No cost to NSF, 2003-2008

**ACES Program contributions:** Website maintenance, data entry and clerical support.

**Name:** Roger Marchant

**Title:**

**Role:** Reviewer

**Percentage:** No cost to NSF, 2003-2008

**ACES Program contributions:** Reviewed submissions for faculty seeking Opportunity Grants.

**Name:** Jiayang Sun

**Title:** Professor, Department of Statistics (CAS)

**Role:** Reviewer

**Percentage:** No cost to NSF, 2003-2008

**ACES Program contributions:** Reviewed submissions for faculty seeking Opportunity Grants.

**EXTERNAL ADVISORY BOARD**

**Name:** Lotte Bailyn  
**Title:** Professor, Sloane School of Management & Organizational Behavior, Massachusetts Institute of Technology  
**Role:** Member  
**Percentage:** No cost to NSF, 2003-2008  
**ACES Program contributions:** Provided evaluation and recommendations for the ACES Program.

**Name:** Jeanette Graselli Brown  
**Title:** Past Chair, Ohio Board of Regents  
**Role:** Evaluator  
**Percentage:** No cost to NSF, 2003-2008  
**ACES Program contributions:** Provided evaluation and recommendations for the ACES Program.

**Name:** Janie Fouke  
**Title:** Provost, University of Florida  
**Role:** Evaluator  
**Percentage:** No cost to NSF, 2003-2008  
**ACES Program contributions:** Provided evaluation and recommendations for the ACES Program.

**Name:** Isiah Warner  
**Title:** Vice Chancellor of Strategic Initiatives, Louisiana State University  
**Role:** Evaluator  
**Percentage:** No cost to NSF, 2003-2008  
**ACES Program contributions:** Provided evaluation and recommendations for the ACES Program.

**Name:** Mary Salomon  
**Title:** R&D Research Manager, New Products, The Lubrizol Corporation  
**Role:** Evaluator  
**Percentage:** No cost to NSF, 2003-2007  
**ACES Program contributions:** Provided evaluation and recommendations for the ACES Program.

**Name:** Jean-Lou Chameau  
**Title:** President, California Institute of Technology  
**Role:** Evaluator  
**Percentage:** No cost to NSF, 2003-2008  
**ACES Program contributions:** Provided evaluation and recommendations for the ACES Program.

**Name:** Abigail Stewart  
**Title:** Professor, Department of Psychology, University of Michigan  
**Role:** Evaluator  
**Percentage:** No cost to NSF, 2003-2008  
**ACES Program contributions:** Provided evaluation and recommendations for the ACES Program.

## EXECUTIVE COACHES

**Name:** Dave Watterson  
**Title:** Principal, Watterson & Associates  
**Role:** Executive Coach  
**Percentage:** 2003-2005  
**ACES Program contributions:** Facilitator for faculty coaching.

**Name:** Doug Moore  
**Role:** Executive Coach  
**Percentage:** 2005-2006  
**ACES Program contributions:** Facilitator for faculty coaching.

**Name:** Marion (Meg) Seelbach  
**Role:** Executive Coach  
**Percentage:** 2003-2007  
**ACES Program contributions:** Facilitator for faculty coaching.

**Name:** Helen Williams  
**Title:** Program Officer, Cleveland Foundation  
**Role:** Executive Coach  
**Percentage:** 2003-2008  
**ACES Program contributions:** Facilitator for faculty coaching.

**Name:** Deborah O'Neil  
**Title:** Assistant Professor, Bowling Green State University  
**Role:** Executive Coach  
**Percentage:** 2003-2008  
**ACES Program contributions:** Facilitator for faculty coaching.

**Name:** Margaret (Miggy) Hopkins  
**Title:** Assistant Professor, Department of Management, University of Toledo  
**Role:** Executive Coach  
**Percentage:** 2003-2008  
**ACES Program contributions:** Facilitator for faculty coaching.

**Name:** Kathleen FitzSimons  
**Role:** Executive Coach  
**Percentage:** 2003-2008  
**ACES Program contributions:** Facilitator for faculty coaching.

**Name:** Susan Freimark  
**Role:** Executive Coach  
**Percentage:** 2003-2008  
**ACES Program contributions:** Facilitator for faculty coaching.

## **Section IV. ADVANCE Impact**

### **A. Overview**

In 2003 CWRU established its 5-year NSF ADVANCE Institutional Transformation program, Academic Careers in Engineering and Science (ACES), to strive toward gender equity through institutional transformation. Led by the University's Deputy Provost Lynn Singer, with Co-PIs from science and engineering departments and from the department of organizational behavior in the School of Management, the program adopted innovative strategies to improve the participation of women faculty in science and engineering.

The goal of the ACES program was to promote a culture of equity, participation, openness and accountability at CWRU. Specific objectives were: (1) to increase the participation of women at all levels of the university and (2) improve the climate for women faculty through initiatives which benefit the entire campus. The results achieved through ACES during 2003-2008 are in the nine areas below.

### **B. Increases in the Participation of Women and New Leadership**

- Barbara Snyder was appointed as the first woman President of the University.
- Pamela Davis, MD. Ph.D., was appointed as the first woman Dean of the School of Medicine, doubling the number of women serving as S&E deans from 1 (School of Nursing) to 2 (Schools of Medicine and Nursing).
- The number of women serving as S&E department chairs increased from 2 (Neurosciences, Sociology) in 2003-04 to 6 (Neurosciences, Astronomy, Chemistry, Mathematics, Mechanical & Aerospace Engineering, Electrical Engineering & Computer Science) in 2008-09.
- The number of women S&E faculty holding endowed chairs increased from 8 in 2003-04 to 15 in 2007-08.
- While overall tenure stream S&E faculty numbers declined over the 5 year period (2003-04 to 2007-08), tenure stream women faculty in S&E increased from 72 (18%) in 2003-04 to 78 (21%) in 2007-08. During these years, the number of tenure stream men faculty in S&E decreased from 326 (82%) in 2003-04 to 293 (79%) in 2007-08.
- The number of women faculty at the professor rank in S&E increased from 22 (11%) to 27 (14%) during the five-year period, while the number of men faculty at the professor rank decreased from 181 (89%) to 167 (86%).
- The percentage of S&E women faculty awarded tenure increased from 7% (1 out of 14) in 2003-04 to 31% (4 out of 13) in 2007-08. The percentage of women promoted to professor increased from 20% (2 out of 10) in 2003-04 to 36% (4 out of 11) in 2007-08.
- The percentage of non-tenure track women faculty in S&E declined slightly from 42% in 2003-04 to 41% in 2007-08.

### **C. Institutional Climate**

- In the 2004 Faculty Climate Survey, women faculty in comparison to men faculty reported lower community and job satisfaction, lower ratings of the leadership effectiveness of their primary unit head, and lower resources and supports for academic performance from their primary unit head. These significant differences disappeared in the 2007 survey.

- Faculty across the university perceived significant improvements in work-life integration supports between the 2004 and 2007 Faculty Climate Surveys, including improved supports for partner hiring, tenure clock adjustment, family leave, childcare and flexibility regarding family responsibilities.

#### **D. Institutionalization Outcomes**

The institutionalization of ACES efforts can be seen in the creation of new positions, new policies, permanent programs and activities and internet resources. A brief re-cap follows:

##### *New Positions*

- Vice President of Diversity, Inclusion and Equal Opportunity (search in progress for this cabinet level position)
- Associate Dean for Faculty Development in the Case School of Engineering
- Assistant Dean of Faculty Development and Diversity in the School of Medicine (search in progress)
- 2 new endowed chairs for women faculty in S&E with partial funding in place for a third chair
- Manager of Faculty Diversity and Development in the Office of Faculty Diversity
- Graduate student in the Flora Stone Mather Center for Women
- Research Analyst in the Office of Institutional Research

##### *New Policies*

- Automatically approved pre-tenure extension policy
- Work load release policy
- Partner hiring policy
- Domestic Partner Policy
- Mandatory review of candidate pool for diversity by Deans
- Consensual relations policy
- Paid parental leave for staff (pending with the Faculty Senate)
- Non-Discrimination Statement goes beyond Ohio law for LGBT and includes gender expression and identity

##### *New Permanent Programs and Activities*

- Office of Faculty Development in the Case School of Engineering
- CWRU-Fisk University partnership established in the Office of the Provost
- Ethnic Studies program
- Summer internship program for minority women S&E students established in the Office of the Provost
- Annual Provost's leadership retreat for all deans and chairs in the university
- Required cultural competency awareness training for all new faculty
- Faculty search committee training and support
- Annual Spotlight Series on Women's Scholarship & Women of Achievement Lunch
- WISER (Women in Science & Engineering Roundtable) program embedded in FSM Center for Women
- Opportunity grants for women S&E faculty
- Faculty climate survey (every three years)
- Bi-annual COACHE junior faculty survey
- Annual faculty exit interviews
- Annual 3<sup>rd</sup> year faculty satisfaction survey

- Faculty work-life brochure of policies and resources printed annually
- LGBT Task Force

#### **E. Faculty Development**

- Twice-yearly university-wide faculty development & networking workshops for women faculty
- Professional coaching for new chairs and deans and new women S&E faculty established in the Office of the Provost
- Annual orientation for newly tenured & newly promoted faculty
- Expansion of the new faculty orientation
- Leadership workshops and junior faculty mentoring through the Case School of Engineering Office of Faculty Development

#### *Internet Resources*

- ACES (NSF ADVANCE) website
- Office of Faculty Diversity Faculty website
- LGBT Taskforce website
- Faculty search committee guidelines
- Case-Fisk Website

#### **F. Summer Undergraduate Research Program for Minority Women**

Institutionalized through the Office of the Provost

#### **G. Institutional Dissemination**

#### ***PUBLICATIONS AND PRODUCTS***

##### **Journal Articles and Book Chapters**

- (1) Bilimoria, Diana, Joy, Simy & Liang, Xiangfen (2008). Breaking Barriers and Creating Inclusiveness: Lessons of Organizational Transformation to Advance Women Faculty in Academic Science and Engineering, Human Resources Management, 47, 3: 423-441.
- (2) 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.
- (3) Bilimoria, Diana, Hopkins, Margaret M., O'Neil, Deborah A, & Perry, Susan (2007). Executive Coaching: An Effective Strategy for Faculty Development, in Stewart, Abigail J., Janet Malley, and Danielle LaVaque-Manty (Eds.), Transforming Science and Engineering: Advancing Academic Women, Ann Arbor: University of Michigan Press, pp. 187-203.
- (4) Jordan, C. Greer & Bilimoria, Diana (2007). Creating a Productive and Inclusive Academic Work Environment, in Stewart, Abigail J., Janet Malley, and Danielle LaVaque-Manty (Eds.), Transforming Science and Engineering: Advancing Academic Women, Ann Arbor: University of Michigan Press, pp. 225-242.

- (5) Liang, Xiang fen & Bilimoria, Diana (2007) The Representation and Experience of Women Faculty in STEM Fields, in Burke, Ronald & Mattis, Mary (Eds.) Women and Minorities in Science, Technology, Engineering and Mathematics: Upping the Numbers, Northampton, MA: Edward Elgar Publishing, pp. 317-333.

#### **Manuscripts under Review**

- (1) Liang, Xiang fen, Turrell, Jeff, Baker, Allison & Bilimoria, Diana. Faculty in Early, Middle and Late Career Stages: Gender Effects on Academic Work Experiences (under 1<sup>st</sup> review at Review of Higher Education).
- (2) Jordan, C. Greer & Bilimoria, Diana. Identity, Culture and the Inclusion of Women in a Scientific Work Environment (under 1<sup>st</sup> review at Journal of Organizational Behavior).

#### **Working Papers**

- (1) Bergeron, Diane, Bilimoria, Diana & Liang, Xiang fen. Thriving in the Academy: A Model of Faculty Career Outcomes. Working Paper Series WP-08-03, Department of Organizational Behavior, Case Western Reserve University, Cleveland, Ohio.
- (2) Jordan, C. Greer & Bilimoria, Diana (2005). The social process of creating and embedding a cooperative and productive science environment, Working Paper Series WP-05-05, Department of Organizational Behavior, Case Western Reserve University, Cleveland, Ohio.

#### **Manuscripts in Progress**

- (1) Liang, Xiang fen, Joy, Simy, Higgins, Patricia & Bilimoria, Diana. The Relationship Between Faculty and Graduate Students in Academic Science and Engineering (qualitative study; 2008 Academy of Management Conference manuscript available)
- (2) Bilimoria, Diana, Turell, Jeffrey, Miller, Lakisha & Liang, Xiang fen. Tracking Diversity in Academic Science, Engineering and Management Faculty Searches (in final writing stage; earlier manuscript available).
- (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).

#### **POSTERS, PRESENTATIONS & CONFERENCE SYMPOSIA**

- (1) Liang, Xiang fen, Joy, Simy & Bilimoria, Diana (August 2008). *Establishing Advisor-Advisee Relationships: Impact of Decision Factors, Schemas and Time Periods*, presented at the Academy of Management Conference, Anaheim, CA.
- (2) Liang, Xiang fen, Turell, Jeffrey & Bilimoria, Diana. (August 2007). *Faculty in Early, Middle and Late Career Stages: Gender Effects on Academic Work Experiences*, paper presented at the Academy of Management Conference, Philadelphia, PA.
- (3) Bilimoria, Diana, Joy, Simy & Liang Xiang fen. (May 2008). Breaking Barriers and Creating Inclusiveness: Lessons of Organizational Transformation to Advance Women in Academic Science and Engineering, Presentation at NSF ADVANCE PI meeting, Washington D.C.

- (4) Liang, Xiang fen, Turell, Jeffrey & Bilimoria, Diana (May 2008). Faculty in Early, Middle and Late Career Stages: Gender Effects on Academic Work Experiences, Roundtable Presentation at NSF ADVANCE PI meeting, Washington D.C.
- (5) Bilimoria, Diana. (May 2008). Academic Careers in Engineering and Science (ACES): An Overview of the NSF ADVANCE Award (2003-2008) at Case Western Reserve University, Poster at NSF ADVANCE PI meeting, Washington D.C.
- (6) Turell, Jeffrey, Bilimoria, Diana, Miller, Lakisha & Liang, Xiang fen. (April 2008). *Tracking Diversity in Science, Engineering and Management Faculty Searches*. Poster at 2008 Research ShowCASE, Case Western Reserve University, Cleveland, OH.
- (7) Bilimoria, Diana, Hopkins, Margaret M., O'Neil Deborah A., and Perry Susan R. (April 2007). *Executive coaching: An effective strategy for faculty development*, panel paper presented at American Educational Research Association Annual Meeting, Chicago. IL
- (8) 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 Study from a Mid-Western University, American Psychological Association, New Orleans.
- (9) Liang, Xiangfen, Joy, Simy, Higgins, Patricia, Bilimoria, Diana, Turell, Jeffrey & Gordon Nahida (May 2007). *Advisor-Advisee Selection in STEM Fields: Findings from Focus Group Interviews*. Poster presented at NSF Advance PI Meeting, Washington, D.C.
- (10) Liang Xiangfen, Turell, Jeff, Baker, Allison, Bilimoria Diana (May 2007). *Gender Effects on Faculty Work Experiences by Career Stage*. Poster presented at NSF Advance PI Meeting, Washington, D.C.
- (11) Tracy, E., Singer, M., Singer, L. (February 2007). *Gender issues in the path to academic leadership*. Presented at the CSWE Conferences and Faculty Development Staff Conference, Phoenix, Arizona,
- (12) Singer, L.T. (March 2007). *What mentees say makes a great mentor!* (Government Agency Roundtable Discussion Symposium) Grants 201 for Mid-Career and Senior Level Scientists: Mentoring the Next Generation of Child and Adolescent Researchers. Presented at the Society for Research in Child Development (SRCD) Annual Meeting, Boston, Massachusetts.
- (13) Shaffer, Amanda, (April 2007) *Recruitment, Retention, Advancement, and Satisfaction: A Four-fold Approach to Increasing Faculty Diversity and Climate Change*, Keeping Our Faculties of Color Symposium, University of Minnesota, MN.
- (14) Liang, Xiangfen, Turell, Jeff, Baker, Allison & Bilimoria, Diana (April 2007). *Gender Effects on Faculty Work Experiences by Career Stage*. Poster presented at Annual Research ShowCASE, Case Western Reserve University, Cleveland, OH.
- (15) Liang, Xiangfen, Joy, Simy, Higgins, Patricia, Bilimoria, Diana, Turell, Jeff, & Gordon, Nahida. (April 2007). *Advisor-Advisee Selection in STEM Fields: Findings from Focus Group Interviews*. Poster presented at Annual Research ShowCASE, Case Western Reserve University, Cleveland, OH.

- (16) Jordan, C. Greer. & Bilimoria, Diana (February 2007). *Creating a Productive and Inclusive Academic Work Environment*. Panel paper presented at American Council on Education Annual Meeting, Washington, D.C.
- (17) 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.
- (18) 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.
- (19) 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.
- (20) Bilimoria, Diana & Valian, Virginia. (May 2006). *Leadership Development at ADVANCE Institutions*, Presentation at NSF Advance PI Meeting, Washington, D.C.
- (21) 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.
- (22) Singer, Lynn. (May 2006). *Engaging Male Faculty*. Round table discussion/ presentation at NSF Advance PI Meeting, Washington, D.C.
- (23) Shaffer, Amanda. (May 2006). *Campus Communications and Outreach*. Round table discussion/presentation at NSF Advance PI Meeting, Washington, D.C.
- (24) 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.
- (25) Savinell, Robert (March 2006). “*Gender & Ethnic Diversity: Applying Lesson Learned*”, March 31, 2006.
- (26) 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, D.C.
- (27) 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, D.C.
- (28) 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

- (29) 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.
- (30) Bilimoria, Diana & Perry, Susan (August 2005). *Transforming the Faculty Mindset*, symposium paper presented at the Academy of Management Conference, Honolulu, Hawaii.
- (31) 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.
- (32) 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.
- (33) Singer, L.T. (May 2005). *Engaging Department Chairs in ADVANCE*. Presented at NSF Advance PI Meeting, Washington, D.C.
- (34) Bilimoria, Diana, Hopkins, Margaret M. & O'Neil, Deborah A. (May 2005). *An Integrated Coaching and Mentoring Program for University Transformation*. Poster presentation at NSF Advance PI Meeting, Washington, D.C.
- (35) Bilimoria, Diana & Jordan, C. Greer. (May 2005). *A Good Place to Do Science: A Case Study of an Academic Science Department*. Poster presentation at NSF Advance PI Meeting, Washington, D.C.
- (36) Bilimoria, Diana, Perry, Susan, Liang, Xiangfen, Higgins, Patricia, Robson, Linda, Stoller, Eleanor & Taylor, Cyrus (May 2005). *How Do Female and Male Faculty Members Construct Job Satisfaction?* Poster presentation at NSF Advance PI Meeting, Washington, D.C.
- (37) Perry, Susan R., Joy, Simy, Liang, Xiangfen, Bilimoria, Diana, Gordon, Nahida, Higgins, Patricia, Stoller, Eleanor P., & Taylor, Cyrus (May 2005). *Graduate Student-Faculty Relations: Exploring Gender and Nationality*. Poster presentation at NSF Advance PI Meeting, Washington, D.C.
- (38) Singer, L.T. (March 2003). *Academic advancement for women: Secrets, myths, and reality*. Lecture presented at Magee-Womens Hospital Center of Excellence, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania.
- (39) Singer, L.T. (October 2003). *Assessing and Improving the Progress of Women Faculty at Case*. Presented at Case Western Reserve University, Cleveland, Oh.

#### **OTHER CONFERENCES & SYMPOSIA ATTENDED**

- (1) Four S&E department chairs (of Biochemistry, Chemical Engineering, Molecular Biology & Microbiology, and Physics) will participate in the University of Washington's ADVANCE Chairs' Leadership Workshop in July 2005.
- (2) Beth McGee participated in the University of Michigan's Setting the Stage for Change Summer Institute June 15-17, 2005.

- (3) Beth McGee and Amanda Shaffer attended the National Conference on Race and Ethnicity in American Higher Education in New York City May 31<sup>st</sup>-June 4<sup>th</sup>, 2005.
- (4) Provost John Andersen, Lynn Singer, Vice-Provost Donald Feke, Diana Bilimoria, Beth Mcgee, Dorothy Miller, Cyrus Taylor, Nahida Gordon, Susan Perry, Xiangfen Liang, Amanda Shaffer, and two coaches (Margaret Hopkins and Deborah O'Neil) attended the NSF ADVANCE PI Meeting in Washington, D.C. in May 2005.
- (5) Lynn Singer, Dean Robert Savinell, and Diana Bilimoria participated in the Engineering Deans Conference, Arlington, Virginia, in December 2004.
- (6) Diana Bilimoria participated in the mini-PI meeting, Arlington, Virginia in December 2004.
- (7) Beth McGee and Amanda Shaffer participated at the Keeping Our Faculties: Addressing the Recruitment and Retention of Faculty of Color at the University of Minnesota, November 18-20, 2004.
- (8) Two department chairs participated in the University of Washington's ADVANCE Leadership Workshop in July 2004.
- (9) Lynn Singer and Diana Bilimoria participated in the ADVANCE National Conference at Georgia Tech in April 2004.
- (10) Diana Bilimoria participated in the mini-PI meeting at the University of Washington in February 2004.
- (11) Mary Barkley participated in the ADVANCE Dual Career Symposium at the AAAS Pacific Meeting at Utah State University in 2004.

#### ***OTHER DISSEMINATION***

- (1) Website: [www.case.edu/admin/aces](http://www.case.edu/admin/aces)
- (2) Provost John Anderson presented the ACES Program to the 10 Universities meeting in June 2005. The group consists of the Provost of ten universities, (Rochester, CMU, Vanderbilt, Dartmouth, John Hopkins, Duke, Northwestern, Washington University and MIT).