



INSTITUTIONAL CONTEXT

Texas A&M University (TAMU), founded in 1876 as an all-male agricultural and mechanical land grant college with a military emphasis, has developed into a Tier 1 Research institution with a strong commitment to faculty diversity and has implemented a wide range of university policies and practices that promote gender equity. However, male STEM faculty still far outnumber women STEM faculty, and Campus Climate Surveys conducted in 2006 and 2009 demonstrated that women STEM faculty perceive a very different and much less supportive campus than their male counterparts. In 2010, TAMU received an NSF ADVANCE grant to transform the institution by improving workplace climate and enhancing recruitment, retention, and success of women STEM faculty. To that end, the TAMU ADVANCE Program is engaged in 12 activities, 6 related social sciences studies, program evaluation studies related to salary, start-up packages, and space allocation, and an evaluation of the overall program. The Program engages 34 STEM departments in 5 colleges: Agriculture and Life Sciences (COALS), Engineering, Liberal Arts, Geosciences, and Science. (An additional 5 non-STEM departments in COALS are also targeted by the ADVANCE Program, but they are funded by COALS.) There are currently 1,031 tenured or tenure-track faculty in the STEM departments, 195 of whom are women. The underlying conceptual framework for the TAMU ADVANCE Program is the American Psychological Association's Psychologically Healthy Workplace initiative. The TAMU ADVANCE theory of institutional change assumes that no single activity will substantially impact progress of women STEM faculty. Instead, a series of interrelated interventions/activities are necessary for ***institutional transformation and a Psychologically Healthy Workplace.***

PROGRESS ON ANTICIPATED OUTCOMES

The TAMU ADVANCE Team set ambitious goals at the outset with respect to the progress of women STEM faculty. One of our objectives was to increase the number and percentage of women STEM faculty at all levels. Unfortunately, whereas the years prior to the start of our ADVANCE Program were characterized by significant growth in the number of TAMU faculty, the period of the ADVANCE grant thus far has been characterized by significant retrenchment university-wide. A deteriorating economic climate statewide led to substantial cuts in higher education funding, which in turn led to a salary freeze and severely constrained hiring of new faculty. However, while the total number of tenured and tenure-track faculty in STEM departments has declined by 10% since our baseline (the 2010-11 academic year), *the percent of women STEM faculty has increased at all ranks.*

Table 1 below compares numbers and percentages of tenured and tenure-track women STEM faculty from October 2010 to March 2013. It is premature to attribute any of these changes to the ADVANCE initiative given lengthy timelines in the search, hiring, and promotion processes. Furthermore, in some colleges the baseline numbers of female faculty are very small, leading to volatility with respect to the percentages of women faculty. Therefore, the main purpose of the text related to Table 1 is to demonstrate that processes have been established to monitor progress with respect to this important indicator.

All told, progress on this indicator is encouraging. University-wide, the share of female faculty in STEM departments has increased at the assistant professor level (from 30% to 34%), although the number of female STEM faculty members has fallen (from 87 to 58). The number of female associate professors has also increased (from 57 to 68) although the share of associate professors who are female is generally unchanged. The numbers and shares of female full professors, distinguished professors and college administrators have generally increased, although in many cases the baseline levels are so low that one or two individuals can have a disproportionate influence on the statistics.

At the college level, the number of female assistant professors fell in all STEM colleges except the STEM departments in the College of Agriculture and Life Sciences. However, the share of assistant professors who were female rose in all colleges except the College of Geosciences. At the associate professor and full professor levels, the number of female faculty rose across all STEM colleges. The biggest change was in Geosciences, where the number of female associate professors doubled and the percentage of associate professors who were female nearly doubled (to 30%). Changes in the percentages of female associate professors in the other colleges varied. The percentage of full professors who were female rose across the board.



Changes in female representation among distinguished professors and college administrators were comparatively modest. In most cases, changes in the statistics were attributable to the movement of a single individual. The exception was the College of Liberal Arts, where the number of female college administrators more than doubled, and the share of college administrators rose from 13% to 33%.

Table 1: The Number and Percentage of Female STEM Faculty at Texas A&M University, 2010-11 and 2012-13

STEM College	Assistant Professor		Associate Professor		Professor		Distinguished Professor		College Administrators	
	Oct-10	Mar-13	Oct-10	Mar-13	Oct-10	Mar-13	Oct-10	Mar-13	Oct-10	Mar-13
Agriculture & Life Sciences	13 (25%)	13 (34%)	12 (28%)	14 (24%)	9 (11%)	11 (15%)	1 (33%)	1 (33%)	2 (6%)	2 (7%)
Engineering	25 (22%)	16 (24%)	14 (13%)	15 (13%)	12 (9%)	14 (11%)	0 (0%)	0 (0%)	3 (16%)	3 (14%)
Geosciences	6 (30%)	1 (10%)	4 (17%)	8 (30%)	3 (7%)	4 (10%)	0 (0%)	0 (0%)	1 (13%)	1 (11%)
Liberal Arts	32 (54%)	22 (61%)	18 (45%)	20 (43%)	5 (9%)	11 (20%)	0 (0%)	0 (0%)	2 (13%)	5 (33%)
Science	11 (26%)	6 (35%)	9 (17%)	11 (20%)	10 (8%)	11 (9%)	3 (12%)	4 (14%)	2 (18%)	2 (17%)
All STEM Departments	87 (30%)	58 (34%)	57 (21%)	68 (22%)	39 (9%)	51 (12%)	4 (10%)	5 (12%)	10 (12%)	13 (15%)

PROGRESS ON 12 PROGRAM ACTIVITIES

Psychologically Healthy Workplace (PHW) practices are grouped into 5 categories: Employee Growth and Development (1), Health and Safety (2), Employee Involvement (3), Employee Recognition (4), and Work-Life Balance (5). Each of the 12 activities in which the TAMU ADVANCE Program is engaged is: a) aligned with one or more of the 5 PHW practices, and b) meant to improve workplace climate and/or enhance the recruitment, retention, and/or success of women STEM faculty.

Activities to Improve Workplace Climate for Women STEM Faculty

The **LEAD Program** (originally titled Department Head Training) provides professional development and implicit bias training for STEM department heads and other department leaders. The workshop structure is modeled on those implemented through the ADVANCE Program at the University of Washington where implicit bias is woven into each professional development workshop. To date, we have provided training on conflict management, mediation, and faculty evaluations. These topics were pursued based on the information gleaned from the 2006 and 2009 Campus Climate Surveys. The next workshop is scheduled for April 22, 2013 and will focus on Faculty Retention. *PHW Practices: 1, 2, 3, 4, 5*

Departmental Mini-Grants support department implementation of promising strategies to improve workplace climate for women STEM faculty. In 2011 and 2012, 26 proposals were received, and 13 were funded (total: \$57,400 plus \$15,750 in matching funds, which were not required). The funds were shared by 11 STEM departments. Examples of Initiatives include speed networking and college-based mentoring groups for women STEM faculty. The due date for 2013 proposals is April 30. *PHW Practices: 1, 2, 3, 4, 5*

The **FASIT Program** (originally titled Staff Development Training) was launched in early 2013 after extensive program development (including focus groups). The program’s goal is to improve relationships between faculty and staff. Twelve STEM and 1 non-STEM departments are currently participating. At its core, 1 faculty member and 1 staff from the same department collaborate. Together, they attend a workshop that focuses on the themes of Getting to Know One Another, Strategies for Faculty and Staff to Work Effectively Together, and Implicit Bias. These teams also attend quarterly FASIT meetings and advocate in their units for positive faculty-staff relationships on an on-going basis. Future teams and workshops are currently being planned. *PHW Practices: 1, 2, 3, 5*



Merit Pool Increases were intended to provide departments with direct incentives to improve their faculty diversity efforts and participate in ADVANCE activities. Due to the current fiscal climate (i.e., no merit raises at Texas A&M), there have been no funds available for an increase in base funds to units based on diversity considerations since 2011. However, from 2011-2013, \$1 million in one-time funds were allocated each year, through the Office of the Vice President and Associate Provost for Diversity (OVPAPD) to campus units, based on progress in accountability, climate, and equity efforts as outlined in the University Diversity Plan. *PHW Practices: 4*

The ADVANCE Center collaborated with members of the TAMU Performance Studies Department to develop **Student Diversity Training** i.e., interactive theater experiences that address issues of implicit bias, prejudices, and stereotypes of women and minorities. The Performance Studies Team proposed Guerilla Theater - spontaneous, surprise performances in unlikely public spaces to an unsuspecting audience. After piloting a number of performances, we determined this approach to be ineffective, costly, and limited in reach. We are now coordinating live skits with student counselors at a four-day summer freshman orientation and planning to show a diversity video at New Student Conferences (required for all new undergraduates) this summer. *PHW Practices: 2, 5*

Activities to Enhance Recruitment and Retention of Women STEM Faculty

The Eminent Speaker Series and the Target-Of-Opportunity Speaker Series were combined into a single activity now called the **ADVANCE Speaker Series** (this **change** was reported to the NSF in Year 1). The goals of the ADVANCE Speaker Series are to provide women STEM faculty and the Texas A&M community the opportunity to network with nationally known women STEM scholars and provide an additional vehicle for recruiting senior women STEM faculty. To date, 8 eminent women – all nominated by STEM departments – have visited campus to provide technical talks as well as talks related to diversity in STEM. *PHW Practices: 1, 2*

Award & Search Committee Training directly addresses implicit bias in these key committees to enhance the recruitment and retention of women faculty. Early progress on this activity was inhibited in part by 2 changes in activity committee leadership. After a visit by the University of Michigan STRIDE committee in May, 2012 and new leadership, 8 senior faculty have studied the implicit bias literature and prepared to present synthesized material to college executive teams and search committees. The first training will take place in April, 2013 with the Executive Committee from the College of Geosciences. *PHW Practices: 1, 2, 3, 4, 5*

The **Faculty Recognition** activity is intended to highlight the accomplishments of women STEM faculty. To date, the committee has published a brochure on awards for women STEM faculty, held a faculty forum on awards, and launched the ADVANCE website which details not only the ADVANCE Program but the successes of all women STEM faculty via faculty news, interviews, and research spotlights. A newsletter is in the works. *PHW Practices: 2, 4*

The **Roadmap Workshops** (originally titled Workshops for Future Women Faculty) support departments in recruitment of early career academics and provide professional development training, mentoring, and networking opportunities for internal and external postdoctoral researchers and Assistant Professors in the early stages of their career. The first workshop was held in March, 2012 and 41 women attended, many of which participate in the ADVANCE Scholars program. Over 40 faculty and administrators planned and participated in the Workshop sessions. The next workshop is scheduled for April 8-9, 2013. *PHW Practices: 1, 3, 5*

Activities to Enhance the Success of Women STEM Faculty

The **Administrative Fellow Program** (originally titled the Rotating Administrator Program) provides opportunities for women STEM faculty at the associate or full professor level to serve in developmental assignments in administrative units and targeted colleges. Six women were placed in administrative positions in Years 1 and 2, one of which has been permanently placed as an Associate Dean of Faculties and another who has extended her service as Associate Dean for Research in Liberal Arts. Cohort 3 is currently being identified. *PHW Practices: 1, 2, 3, 4*

The **ADVANCE Scholar Program** intends to increase the likelihood of success of underrepresented women STEM faculty members, particularly women of color, by providing as mentors, eminent scholars in their fields. This program also hosted a national conference for underrepresented women in STEM in October, 2012. Eighteen



women have been placed in the program, many of which have attended the Roadmap Workshop and participate in Success Circles. Applications for the next cohort are due in May. *PHW Practices: 1, 2, 3, 5*

The purpose of **Success Circles** is to foster faculty success by organizing mentoring groups centered on personal and professional interests. In addition to a New Mom's group that meets regularly to discuss strategies for balancing academia and family life, there are two Writing Clubs. The writing groups meet regularly and feature informational/writing/reviewing sessions, peer mentoring, accountability, and guest speakers. Of note, the second writing group was established synergistically through a Departmental Mini-Grant. A Success Circle focused on elder care is currently being planned. *PHW Practices: 1, 2, 3, 5*

PROGRESS ON SOCIAL SCIENCE STUDIES

Reducing Staff and Student Implicit Biases and Perceptions of Campus Climate –The goal of this study is to analyze Campus Climate Survey data that assesses women STEM faculty's perceptions of personal and vicarious experiences of disrespect from staff and undergraduate students. The latest Campus Climate Survey was launched on February 19 and closed March 18, 2013. One-thousand four-hundred seventy-five people initiated the survey for a 54% response rate; 934 responders completed the entire survey. We are currently cleaning the data and preparing it for analyses. Additionally, in an effort to get staff buy-in for the need for staff → faculty incivility training, a faculty → staff incivility survey was developed, administered, and completed in February, 2012. Two-hundred twenty-three staff (79% female, 86% White) from ADVANCE Target Departments completed the survey for a 29% response rate.

Advancing Women into Leadership Positions: Effectiveness of the Administrative Fellows Program – The goal of this study is to develop a thick-description case study of women entering academic leadership and administration for the first time via the ADVANCE Administrative Fellows Program. The research questions focus on changing beliefs and expectations of Fellows throughout their first year in administration, the fit of the position into the administrative unit, and effects on a variety of Psychologically Healthy Workplace outcomes (e.g., work-life balance) and career trajectories as a typical faculty member (e.g., research productivity, student mentoring). All Administrative Fellows are interviewed at 3 points during their first year of appointment. Additional interviews are conducted with the sponsor of the position (i.e., the unit head) and several peers and support staff at the beginning and end of the first year of each Fellow's appointment. To date, all of the 1st cohort interviews and the initial and mid-year interviews for Cohort 2 are complete. The 3rd cohort is currently being identified and will start in their administrative positions this summer. A qualitative analysis of interview transcripts will begin in June, 2013.

Reducing Student Implicit Biases: An Analysis of Course Evaluations – We are conducting a content analysis of students' teaching evaluation comments to examine whether or not women STEM faculty receive less disrespectful comments than men STEM faculty. Following an initial round of manual coding that demonstrated discouraging results, we purchased text analysis software called Linguistic Inquiry and Word Count (recommended by Rice University ADVANCE colleagues). We are hopeful this will lead to more efficient and reliable coding.

Repairing the Leaky Pipeline: Workshops for Early Career Academics – This survey study investigates whether Roadmap Workshop attendees report higher levels of self-efficacy for negotiating and, in turn, higher levels of well-being than non-workshop attendees. The sample consists of post-doctoral researchers and assistant professors who participated in the Roadmap Workshop. Workshop attendees are also asked to nominate a comparable peer (e.g., female colleague at a similar rank) to complete the survey; these non-attendees serve as a comparison group. All 2012 workshop participants were invited to participate in the online survey at the start of the workshop. Thirty-three participants completed the survey for an 81% response rate. The data file for the 2012 cohort is currently being prepared for analysis. We will be collecting wave 2 data from the 2012 cohort and from new workshop participants in April, 2013. The minimally revised surveys are currently under review by the IRB.

Improving Selection and Promotion of STEM Women Faculty: Reducing Search and Award Committee Biases –This study will evaluate the effectiveness of Award and Search Committee Training. Our hypothesis is that training will decrease explicit sex biases substantially as well as make people aware of implicit sex biases in their decision making processes. Instruments for the study are in development as the course content becomes clearer. Current plans



include using an implicit attitudes test, explicit attitudes measures (including hostile and benevolent sexism, among others), and knowledge of implicit bias.

Meta-analytic Investigation of Sex Differences in Course Evaluation Ratings – The original study of peer mentoring through the Success Circles activity was deemed infeasible and therefore not pursued (this **change** was reported to NSF in Year 2). As an alternative, a meta-analysis of sex differences on course evaluation ratings is proposed. To determine the feasibility of this study, an initial search of the literature has been conducted and relevant studies for inclusion are being identified and downloaded for coding. It appears that focusing on potential moderators including STEM discipline, sex of the student, and date of the study will ensure the study will generate new insights and provide a contribution to the literature.

PROGRESS ON EVALUATION

The TAMU ADVANCE Program is enacting a series of interrelated interventions designed to improve the climate and enhance the recruitment, retention, and success of women STEM faculty. Since isolating effects of any single ADVANCE intervention would be nearly impossible, the Evaluation Team is focusing on a **holistic approach** which uses departments as the units of analysis. This approach draws on the literature on institutional change, and uses department-level data on climate, recruitment and retention, space allocations, start-up packages, and salaries. In all cases, a difference-in-difference approach will be used to assess whether or not ADVANCE activities can help to explain departmental changes over time. The underlying hypothesis is that departments with greater exposure and/or engagement with ADVANCE will show greater improvements in climate, retention, and recruitment.

The Evaluation Team is currently developing measures to indicate the extent to which each TAMU department has been exposed to and engaged with the ADVANCE Program. Not all departments being offered ADVANCE activities are participating, and some departments may participate in some activities but not others. Therefore, it is important to separate two different effects. The first effect is that of the “intent-to-treat,” that is, the effect on everybody who is offered the program intervention, given that some departments will always choose not to participate (“never takers”) and other departments may participate in similar programs offered through non-ADVANCE initiatives (“always takers”). The second effect is the effect of the “treatment-on-the-treated,” that is, the effect on those departments who are both offered the chance to engage with ADVANCE and who take-up that engagement. This “treatment-on-the-treated” analysis gives information of the direct effect of the ADVANCE Program. The exposure and engagement data have been collected for the first two years of the ADVANCE Program and are in the process of being analyzed.

The Evaluation Team has already conducted baseline analyses of salary, retention, and start-up. The salary analysis indicates significant differences in salary and retention by gender in the STEM departments of the Colleges of Agriculture and Life Sciences and Liberal Arts. In both Colleges, the analysis indicates that the salaries for female faculty are significantly lower than the salaries for male faculty at the assistant and associate professor levels. However, retention rates are significantly *higher* for female professors in the divisions where salary differentials were detected. Meanwhile, analyses of the Dwight Look College of Engineering indicate there was no significant difference in salary between male and female tenure-track faculty, but there were significant differences in retention. Over the 10 years from fiscal year 2003 through fiscal year 2012, the probability that engineering faculty would still be at TAMU eight years after they were hired as assistant professors was 70% for males and 45% for females. One way to reconcile the salary and retention findings is to conclude that differences in salary are not a primary determinant in differences of retention at TAMU. Another possible interpretation is that the systematic differences in salary detected by the salary study reflect underlying and unmeasured differences in research productivity or teaching effectiveness (factors not included in the salary model).

Ongoing analyses are examining the extent to which a department’s engagement with ADVANCE helps to explain changes over time in the salary, retention, and start-up differentials detected in the baseline analysis. Evaluators are also working closely with the newly reorganized facilities department to clean the newly established administrative data on space allocations so that analyses can be conducted. The 2013 Campus Climate Survey was just conducted, and we anticipate being able to report on preliminary findings at the upcoming site visit.



In addition to analyses of key indicators of success, the Evaluation Team has also conducted formative analyses for individual interventions. For example, evaluators surveyed participants in the first Roadmap Workshop, and provided the committee with feedback regarding faculty satisfaction with the experience.

PROGRESS ON INSTITUTIONALIZATION

Our original proposal indicated that successful activities would be institutionalized by gradually transitioning full responsibility to partner units (e.g. Dean of Faculties). Indeed, some activities such as the LEAD Program are suited and well positioned for that approach. However, during the course of the grant, significant cross-activity synergies have been identified. Further, while the activities are driven by the committees, the overall direction of the program is guided by the Leadership Team which has evolved into a Think Tank focused on the advancement of women in STEM. Our 2013 EAB report noted: “It appears that maintaining the presence of the ADVANCE Center—with known staff whom people across the campus call upon—might be very important to sustaining attention to the issues of climate, recruitment and retention, and [faculty] success after the grant concludes.” We are currently assessing the feasibility of this approach.

The ADVANCE Program is working with various units to develop institutional data collection and analysis processes so they will become standard, administrative processes. Processes are now in place to transform cross-sectional data on university personnel into a useful panel that describes characteristics of faculty at various career transitions. Additional demographic data such as faculty rank at hire and years since degree are being collected. Also, the central administration now collects data on space allocations and start-up packages for individual faculty members; previously, such data were siloed at the departmental level. All of these changes make it easier for University administrators to monitor the status of female STEM faculty, and none of these changes would have been implemented absent the ADVANCE Program.

The ADVANCE salary analysis is clearly raising awareness about possible salary inequities. The Evaluation Team has briefed Texas A&M’s Provost, the Vice President and Associate Provost for Diversity, the Dean of Faculties and Associate Provost, and most College Deans on the research findings. For the last two years, the Provost and Dean of Faculties have asked the Evaluation Team members who conducted the salary study to prepare a database identifying faculty (both male and female) whose observed salaries deviated significantly from salary model predictions. The first year, those files were shared with the College Deans, and then the Dean of Faculties followed up to discuss each individual; we anticipate a similar process this year. In fiscal year 2012, when this process was first followed, the Dean of Faculties and Associate Provost noted that salary adjustments were made for several faculty members who were identified as outliers.

ADVANCE Co-Investigators Mindy Bergman and Kathi Miner consult with various units through the Diversity Operations Committee (DOC) to assist them in meeting the assessment plan goals for their units. (The DOC is the operational committee formed under the 2009 TAMU Campus Diversity Plan to assist with ongoing planning, implementation, assessment, and evaluation of University and unit progress with respect to accomplishing goals related to accountability, climate, and equity.) Drs. Bergman and Miner also developed a list of items that units can use to develop surveys that are relevant to their challenges and concerns with respect to diversity (maintained on the ADVANCE website).

The ADVANCE Social Science Studies Team (comprised of industrial/organizational psychologists), in collaboration with the Office of the Dean of Faculties, took the lead on the design and administration of the recently completed Campus Climate Survey. This survey had the best response rate of the three that have been completed to date (2006, 2009, and 2013). It contains more previously validated psychological constructs from the research literature than any previous administration. Not only will the campus benefit from the climate data, the Social Science Studies Team will use the data to complement their ADVANCE studies. Through the six studies and a wide number of synergistic projects, the Social Science Studies Team is generating new knowledge and contributing to the literature on implicit bias, STEM women, incivility, mentoring, and diversity climate by disseminating the results of their research. To date, they have given 5 presentations about their research, presented 7 conference papers, and recently resubmitted a manuscript for publication following an invitation for revision.