ADVANCE: Institutional Transformations for the Future of the Faculty

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ADVANCE Faculty Affairs Office

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Joan Lorden, *Provost and Principal Investigator*

Yvette Huet, *Co-Principal Investigator, Faculty Director*

Lynn Roberson, Program Communications Director

Audrey Rorrer, *Lead Evaluator*

Elizabeth Wemlinger, *Evaluation Graduate Assistant*

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The ADVANCE Institutional Transformation Project was designed to address the specific needs of gender equity at the University of North Carolina at Charlotte. The goals of the grant are to increase the recruitment, retention and promotion of women in the science, technology, engineering and mathematics (STEM) disciplines. This report presents project activities since the last annual report on June 1, 2009. Annual activities are presented for the academic year 2009-2010, along with summative program outcomes apparent in overall trends since grant inception (2006-2007 academic year). Toolkit tables represent the most current year available, 2008-2009.

ADVANCE UNC Charlotte is catalyzing an equitable gender climate among STEM faculty through policy reform, university partnerships, and the institutionalization of faculty development programs in a continuous effort to support recruitment, retention and academic success of female faculty.

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Executive Summary

ADVANCE UNC Charlotte is catalyzing an equitable gender climate among Science, Technology, Engineering and Math (STEM) faculty through policy reform, university partnerships, and the institutionalization of faculty development programs in a continuous effort to support recruitment, retention and academic success of female faculty.

Policy reforms initiated by ADVANCE, via the policy review Future of the Faculty Committee, include **broadening the pathways leading to promotion**, approval of a faculty **ombudsperson**, and **adding rationales for stopping the tenure clock**, the defined time to achieve tenure. As a result, **the number of female STEM faculty successfully achieving promotion and tenure has increased 14% since the 2006 baseline**, and **the number of women in STEM leadership positions has increased 23%**; 6 female faculty were promoted in STEM disciplines in 2008-2009. Study of the gaps in institutional effectiveness for faculty has led to the establishment of a **permanent Committee on Faculty Welfare** by the Faculty Council and has identified a specific need for on-campus childcare. A **childcare facility site has been identified in the University Master Plan**, and the university seeks a partnership to develop a facility.

ADVANCE has fostered partnerships with Academic Affairs, Human Resources, the Council on University Community, the Chancellor's Diversity Initiative, and the Center for Professional and Applied Ethics which have resulted in the successful development and implementation of **6 key program initiatives**: faculty development, a women's speakers series, a competitive awards program, Leadership UNC Charlotte, new departmental chairs orientations, and diversity recruitment training. Two of these efforts, faculty mentoring and diversity recruitment training, are now permanently institutionalized.

Programs are impacting faculty. Leadership UNC Charlotte provides a yearlong seminar for 20-24 rising faculty leaders each year and faculty search committee members participate in diversity recruitment training each term. A *unique feature of the mentoring program is a mid-career component* to support the transition of women faculty to the rank of full professor. ADVANCE has granted **19 Bonnie Cone fellowships to faculty women**, resulting in the funding of nine research initiatives.

Future transformative research is underway with the spring 2010 implementation of a tailored faculty climate survey, which will be uniquely established as a reliable and validated instrument that can be used at other institutions. Outcomes from the climate survey will be distributed to each university college dean as a **Climate Scorecard**, which will provide snapshots of findings aligned with the campus diversity goals established within each college. The dissemination of the Climate Scorecard will serve as a model of applied research dissemination and organizational transformation.

Program Overview

18 target STEM departments in 3 colleges

Programs available to all colleges: Leadership UNC Charlotte, Faculty Mentoring & Networking for Mid-Career Faculty and New Faculty, Women's Academy Speaker Series, Diversity Recruitment Training, New Chairs Orientations, New Faculty Orientations

Programs available to women in STEM: Competitive Awards, Customized Leadership Training (such as via COACh regarding negotiations.)

STEM	College of Liberal Arts &	College of Engineering
Science Technology Engineering & Math	Sciences	Engineering
	Biology	Civil
College of Computing &	Chemistry	Electrical & Computer
Informatics	Mathematics & Statistics	Engineering Technology
Bioinformatics	Physics & Optical Science	Mechanical
Computer Science		
Software & Information		

SBS	College of Liberal Arts & Sciences
Social & Behavioral Sciences	Anthropology, Criminal Justice, Economics, Political Science, Psychology, Sociology

Overall Highlights 2006-2009*

*Most current available

STEM Faculty Gender Distribution:
- 20% of tenure track STEM faculty are women as of 2008-9 academic year, up from 14% in 2004 (baseline year prior to ADVANCE initiative)

Institutional Recruitment Outcomes:
- A steady increase has occurred in female tenure track faculty recruitment and leadership roles between 2006-7 (the first year of implementation) and 2008-9
  - **Women STEM faculty new hires up** from 27% to 36%
  - **Women in leadership roles up** from 28% to 35%

Promotion and Tenure:
- All female faculty promotions were approved (2006-7 - 2008-9)
- The percentage of female faculty promotions increased from 15% to 46% in 2008-9 academic year, and are up 18% from baseline year 2004
- All female faculty tenure packets were approved (2006-7 - 2008-9)
- Regrettably, only 25% of tenure packet submissions were from women (2007-8, 2008-9), although this is up from 19% in 2006-7

Institutionalization:
- 3 Policy changes; 4 recommendations under review = increased rationale for stop the clock, multiple pathways for promotion, ombudsperson, childcare center

Program Initiatives:
- 42 new faculty have participated in the year-long mentoring program
- 59 faculty have participated in the Leadership UNC Charlotte program
- 32 Competitive Awards recipients (19 individuals; 3 departments)
- Over 90 collaborative events and speakers

Goal 1: Recruitment: To increase the number of female faculty, including women of color, interviewed and hired in STEM disciplines at all ranks.

Desired Outcomes:
- Increased female, and women of color, applicants to STEM faculty positions
- Increased campus awareness about equitable recruiting practices

Goal 2: Retention and advancement: To increase the number of female faculty, including women of color, retained and promoted in STEM disciplines at all ranks.

Desired Outcomes:
- Increased female, and women of color, faculty retained in STEM
- Increased understanding of promotion & tenure requirements by female, and women of color, faculty in STEM
- Increased promotions for female faculty in STEM
- Increased support for research, teaching and service
- Increase the number of women from associate to full professor and in university leadership positions

Goal 3: Climate: To improve and ensure gender equity in views on salary, workload, resources, and recognition at the university.

Desired Outcomes:
- Increased salary equity of women faculty in STEM
- Increased perception of equitable climate
- Increased perception of work/life balance

Goal 4: Institutional Transformation: To catalyze organizational change that will intentionally attract, retain, support and ADVANCEADVANCE women in science, technology, engineering and math (STEM) disciplines.

Desired Outcomes:
- Sustain ADVANCE efficacy
- Institutionalize ADVANCE partnerships & initiatives

Goal 5: Dissemination: To communicate resources, findings and best practices of gender equity recruiting, retention, and climate initiatives, particularly among STEM disciplines.

Desired Outcomes:
- Increased national awareness of effective gender equity practices
- Serve as a model of best practices
- Promote an effective implementation & evaluation methodology
- Provide career development and support resources to women in STEM disciplines

ADVANCE UNC Charlotte has established five primary goals.

Based upon recommendations from the April 2009 NSF Site Visit, the ADVANCE Faculty Affairs Office instituted significant change in the organizational structure of the program administration during the summer of 2009. The Faculty Director became half-time staff, an increase from quarter-time. A full-time program support position, Program Communications Director, was created to provide project management and communications within the university and community. A Steering Committee was formed to lead project initiatives. The Steering Committee is composed of program leadership (the PI, Co-PI and Faculty Director, the Program Communications Director, the Evaluator, and the lead faculty of our programs). The A Team remains intact, functioning as an advisory board. In July 2009, new team members staffed the Program Evaluation Team (PET). The full time Program Communications Director joined in Fall 2009, charged with dissemination of ADVANCE project initiatives. In March 2010, a new Administrative Assistant joined the staff as a replacement.

Chart 1. ADVANCE UNC Charlotte Organizational Structure

Organizational Component	Member(s)	Roles and Responsibilities of Component Member(s)
Executive Management Team	**Joan Lorden,** Provost	Principal Investigator; Direct and guide all project initiatives
	Yvette Huet, Biology Professor	Co- PI and Faculty Director; Direct and oversee all project initiatives
	Lynn Roberson, Communications Director	Program Communications Director; Lead internal and external communications and marketing campaign, manage projects
Steering Committee Members	**Catherine Blat,** Director of Assessment, Engineering	Lead Faculty of Competitive Awards Program
	Kim Buch, Psychology Professor	Lead Faculty of Mid-Career Faculty Mentoring
	Karen Schmaling, Dean of the College of Health & Human Services	Chair, Lead Faculty, of Future of the Faculty Committee
	Kerrie Stewart, Council on University Community	Provide collaboration with campus diversity program initiatives
	Rosie Tong, Director, Center for Professional and Applied Ethics	Lead Faculty of Women's Speakers series (Women's Academy)
Program Evaluation Team	**Audrey Rorrer,** Research Associate	Lead Evaluator- Overall Project Evaluation, data collection, reporting and dissemination
	Elizabeth Wemlinger, Doctoral Graduate Assistant	Evaluation Graduate Assistant- NSF Data Project Evaluation
A Team Members (includes Steering Committee and Program Evaluation Members)	**Arnie Cann,** Psychology Professor	Provide input and guidance to program initiatives
	Robin Coger, Mechanical Engineering Professor	Provide input and guidance to program initiatives
	Nancy Gutierrez, Dean of the College of Arts & Sciences	Provide input and guidance to program initiatives
	Helene Hilger, Civil & Environmental Engineering Associate Professor	Provide input and guidance to program initiatives

	Lisa Rashotte, Sociology Professor	Provide input and guidance to program initiatives
	Susan Sell, Associate Dean, the Graduate School	Provide input and guidance to program initiatives
ADVANCE Faculty Affairs Office Staff	Alexandra Arrington, Administrative Support Associate	Provide program implementation and budget support
	Krupesh Thacker, Graduate Assistant	Masters Graduate Assistant- Provide program support

Policy Reform

Several key policy reform initiatives have been implemented or are under way as of June 2010. Tenure clock extension rationale has been expanded to include delays in institutional commitments. Professional development for faculty has been instituted through the Mid Career Mentoring program and the New Faculty Mentoring program, along with the mandatory year-long New Faculty Orientation, and Leadership UNC Charlotte. Practices surrounding diversity equity have become institutionalized via the campus wide diversity planning, and through faculty search committee diversity training and new chairs orientations. The standing Committee on Faculty Wellness of the Faculty Council represents a structure that has been implemented. Through these policies, practices and structures, the UNC Charlotte ADVANCE initiative is becoming institutionalized for continuous and permanent equity enhancements.

Chart 2. ADVANCE UNC Charlotte Institutionalization as of June 2010

ADVANCE Institutionalization: Policies, Practices and Structures		
Policies	**Description**	**Status**
Tenure clock extension	Tenure clock extension: increased reasons for stopping clock, e.g., delays in institutional commitments, administrative responsibilities	Approved by Faculty Council
Committee composition	Faculty search committees	Committee members must have participated in diversity training within 3-year time period of search
Professional development	Institutionalized programs for faculty development: University campus wide mentoring, new and mid-career, first available in 2007-08; New Faculty Orientation, mandatory year-long program for all incoming faculty	These programs are open to all faculty, an expansion of the College of Liberal Arts & Sciences program
Collecting and monitoring gender equity data	College Diversity Plans	Underway Spring 2010 with assessment focus
Practices		

Incorporating equity issues	Faculty search committee training	Offered each term; committee members must have participated once within 3-year time period
	New Chair Orientations	Academic year cohorts convene 2-4 times a year for topical discussions with seasoned chairs
Continual climate survey	HERI	Participate in triennial faculty surveys conducted by UCLA
	COACHE	Participate in triennial tenure-track faculty surveys conducted by Harvard's Collaborative on Academic Careers in Higher Education
	Internal Tenure-Track Faculty Survey	All faculty surveyed in 2010; will continue in years between HERI and COACHE
Continual salary equity studies	Part of Campus Diversity Plan	Institutional Research conducts salary equity analysis annually with each college, reviewing with Provost, Deans, Academic Affairs budget staff
Professional development	Leadership UNC Charlotte	Annual program consisting of faculty cohorts nominated by Deans and Department Chairs
	Year-Long New Faculty Orientation	Annual program consisting of newly hired faculty cohorts
	New Chair Orientations	Seminar series for new chairs with informal, group mentoring by seasoned chairs; institutionalized 2009
	New Faculty Mentoring Program	Annual program offered to new faculty and ongoing mid-career mentoring program
	Mid-Career Mentoring Program	
Collecting and monitoring gender equity data	Campus Diversity Plan	Colleges report diversity data, including gender in strategic plans (voluntarily)
Increased recognition of women's scientific accomplishments	Women's Speaker Series	Provided annually by the Center for Professional & Applied Ethics
On Campus Childcare	Site identified and planned	Pending funding and identification of private sector partner

Regular Exit Interviews	Conducted as faculty terminate employment (voluntary and unapproved re-appointment)	Conducted by Academic Affairs
Structures		
Monitoring Structures	Future of the Faculty Committee	Will work in tandem with the elected Faculty Welfare Committee
	Faculty Welfare Committee	Permanent subcommittee of Faculty Council
	Ombudsperson	Endorsed by Faculty Council and recommended as a funding priority

Partnerships

UNC Bridges

UNC Charlotte Center for Professional and Applied Ethics

UNC Charlotte Chancellor's Diversity Initiative

UNC Charlotte Council on University Committee

UNC Charlotte Human Resources Department

The **UNC Bridges Program**, a UNC system wide program, seeks to develop and sharpen the skills of women of the UNC system in the realms of administration and leadership. The Bridges alumni on our campus hold monthly meetings for networking and are often called upon to carry out leadership development projects. We continue to work with these groups as the partnership is both local at UNC Charlotte, and statewide, enabling us to bring the work of ADVANCE to our 16 sister institutions.

ADVANCE partnered with the **Center for Professional and Applied Ethics** to host a series of women speakers on research on gender and equity. The series also brought to campus leading women academicians to speak on their research and network with faculty. This collaboration provided several opportunities to raise awareness of the ADVANCE goals and initiatives to students, faculty, and administrators from across the institution, as well as the community at large.

The ADVANCE Faculty Affairs Office, through which ADVANCE programming is administered, shares contiguous office space with the **Office of the Council on University Community**. The Chancellor charged the Council, appointed in 2006, with leading diversity efforts at UNC Charlotte, and advising him on means to create and sustain an inclusive environment that values the presence of people with diverse backgrounds, experiences, and ideas. The Council is composed by members of the Chancellor's cabinet and chaired by Provost Joan Lorden. The Council launched the **Chancellor's Diversity Challenge Fund,** a mini-grant program to fund faculty, staff, and student initiatives to promote the value of diversity at UNC Charlotte. The Council has also completed the university Diversity Plan. Ms. Kerrie

Stewart, staff to the Council, has drawn heavily on the work of the ADVANCE Committee on the Future of the Faculty, in providing input to the Council for the Diversity Plan. Ms. Stewart works with the ADVANCE staff to raise campus awareness around diversity and inclusiveness issues, share data relevant to gender, race/ethnicity, and equity, and through ADVANCE initiatives such as the diversity recruitment training, to promote equity and inclusiveness in policy and climate.

The university **Human Resources Department** and the ADVANCE program collaborate in the development and implementation of the Diversity Recruitment workshops held for faculty search committee members. This partnership enables the exchange of training expertise tying together the process of recruiting and selection, diversity awareness, and effectively inclusive meeting discussions.

Faculty Development Initiatives

Faculty Mentoring

The **New Faculty Mentoring Program** has completed its third year of implementation, which consists of an annual pairing of newly hired assistant professors with associate or higher level faculty in one-on-one mentoring. The mentor pairings are made based upon qualifiers the mentees indicate are important to them (new for 2009). An orientation to the mentoring program kicks off the program in September, which also serves to facilitate the mentoring pairs and foster relationship development and the establishment of expectations. This fall, 21 new faculty participated in the New Faculty Mentoring program, less than the previous year (46) due to reduced hiring of new faculty as a result of the recession.

The **Mid-Career Mentoring Program** has successfully completed its second full year. We have created a mid-career development template for helping associate professors more intentionally negotiate this stage of their careers. The template is the cornerstone for three separate mid-career mentoring initiatives: 1) one-on-one career mentoring for mid-career associate professor women in Psychology, Chemistry, and Physics, 2) peer mentoring for all associate professors in the College of Engineering, and 3) Focus Energy Fridays for mid-career faculty networking. In the one-on-one mentoring program, associate professors are paired with full professor mentors of their choice who are trained and then serve as resources as the participant works through the mid-career development template. In the peer mentoring program, associate professors serve as resources to each other as they work through the mid-career development template. In the Focus Energy Fridays for mid-career faculty, all associate professors are invited to attend informal meetings where they discuss topics related to the mid-career development template. One very successful feature of all our mid-career programs is the Faculty Forum, during which deans and the provost address the topic

"Pathways to Full Professor." All associate professors are invited. This grew out of our work with the mid-career development template, which includes a step on gaining clarity on criteria for promotion to full professor.

Mid Year Mentoring Program Survey: In December 2009, mentors and mentees in the New Faculty Mentoring program were surveyed about their experience with the program. Nine faculty responded to the mentee survey (all female), and 11 responded to the mentor survey (3 males). The representation of STEM disciplines was low, 1 mentee; 2 mentors. Most mentees reported meeting once or twice a semester with their mentor (56%) and communicating with their mentors often by phone and email (78%). Overall satisfaction with the program was high (above 55%). Mentee responses indicate that mentees, who are assistant level faculty, have more opportunity to interact with junior faculty (78%) than senior faculty (44%). Most mentors were new to the program in 2009 (46%). All mentors believed that the relationship was helpful to

New Faculty Orientation

This year-long new faculty orientation program covers a variety of important issues faculty face to help them navigate these and other issues as well as build a sense of community. In 2009-2010, the new faculty cohort gathered for **7 events**: a welcome orientation, and workshops on external grant programs, plagiarism, communications technology, mentoring graduate students, reappointment, promotion and tenure process, and a closing gathering to reflect on the first year.

24 new hires in 2009-2010

An average of 12 participated in each event

Top 2 Issues Discussed with Mentors:

Work/life balance (85%)

Reappointment, Promotion & Tenure (75%)

Competitive Awards

The ADVANCE program began with two distinct competitive awards programs: **Solutions Team Awards and Bonnie Cone Fellowship Awards.** The project team decided to eliminate the Solutions Team Awards program, as the 2009 NSF site visitors suggested, because the program was not as successful as hoped. Two previously awarded solutions team grants are being evaluated to determine if components of those proposals could be expanded to other units. The two awards are: the Psychology Department, which is evaluating climate locally using a consultant and which is now implementing changes through a diversity committee; the College of Liberal Arts and Sciences (CLAS) which has a faculty member who is identifying needs and ways to implement the College's diversity goals.

CLAS Solutions Team Award

The award has enabled significant progress on implementing the diversity plan approved by the college last year. The overarching goal of the proposal was to provide a point person, the diversity coordinator, who would oversee implementation of the diversity plan in the college. Part of the strategy for implementing the policy is to infuse its recommendations into the strategic plans of the college and other units. Dr. Blume, as Diversity Coordinator, has served as a consultant to CLAS units during the strategic planning process, has provided extensive reviews and comments on drafts of unit strategic plans, and has assisted the dean as needed during the process. In addition, progress has been made on implementing a new diversity component on the CLAS website that will be used to aid recruitment and retention of diverse students, staff, and faculty and serve as a repository of information and resources related to best diversity practices. The diversity coordinator also assisted the ADVANCE grant team in developing a climate survey that is being used university wide.

Bonnie Cone Fellowships

The Bonnie Cone Fellowships for individual faculty support are in the third year of administration. This year, the fellowships were again open to assistant and mid-career professors, and awarded in

Current outcomes from the first two cohorts combined indicate:

- 3 subsequent grant proposals submitted
- 12 journal articles submitted and/or published
- 4 conference proceedings
- 5 presentations/seminars delivered
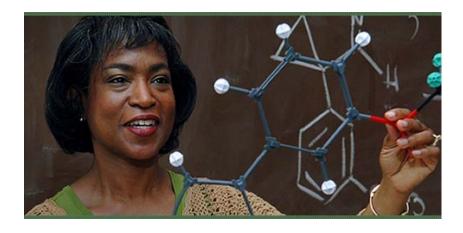
the two categories of early or mid-career. The 2009-2010 program was managed by Dr. Catherine Blat, Engineering.

In the 2009-2010 academic year, 7 successful applications were awarded, totaling $50,000. While it is too soon to determine the impact of these fellowships on the 2009 cohort, previous cohort recipients from 2007 and 2008 were surveyed in December 2009 to measure reported career progress that the recipients attribute to the fellowships. The fellowships enabled faculty to travel to conferences for networking and presentations, to reduce teaching loads in order to focus on research, to support research through hiring graduate assistants, and to support career development endeavors, such as consulting with a career coach.

"The Bonnie Cone Fellowship has helped my career development by giving me the resources to work on research during the summer, rather than earning money through summer teaching." *Cohort 1 Recipient*

"Being able to travel [to facility] and spend time working at an Industrial Research lab was a useful experience, as was working with colleagues [at facility]. Both experiences helped push forward research projects." *Cohort 1 Recipient*

"The Bonnie Cone Fellowship has allowed me to establish a field research site." *Cohort 2 Recipient*

Dr. Banita Brown, Associate Professor of Chemistry, Master's Program Coordinator

Leadership UNC Charlotte

The **Leadership UNC Charlotte** program is in its third year of implementation with a cohort of 24 faculty. Chairs and Deans nominate faculty members to participate in the year-long development program that hosts workshops each semester to engage the cohort in active discussion of academic leadership topics. Key topics focused on the dynamics of a successful committee, negotiations, conflict resolution, and faculty ad staff evaluation practices. A number of high profile campus leaders, such as the Chancellor, and external leaders including **Dr. Carla Fehr (Iowa State ADVANCE)** and **COACh** members

(Committee on the Advancement of Women in Chemistry) addressed the group.

Six workshops were conducted in 2009-2010. Participants were primarily associate professors and professors; half were female. Overall, faculty rated the sessions as moderately or very useful (above 80%). **Over 80% found the sessions provided information to enable them to be agents for change in their departments.**

New Chairs Orientation was hosted in conjunction with the leadership program in August and was well received. Sixteen new

chairs (89%) participated. The new chairs were especially positive about hearing from a panel of seasoned chairs, and requested additional networking opportunities with the experienced cohort. In response, a second meeting was held in the spring semester.

Program Sessions 2009-2010

"**Envisioning the Future of UNC Charlotte**;" Presenter: Dr. Joan Lorden, Provost

"**Identifying and Recruiting the Best Faculty**;" Presenter: Dr. Nancy Gutierrez, Dean, College of Liberal Arts & Sciences

"**The Chemistry of Leadership**;" Presenters: COACh

"**Reappointment, Promotion and Tenure and Group Dynamics**;" Presenters: Dr. Joan Lorden and Dr. Lisa Rashotte, Associate Professor, Director of Sociology Masters Program

"**The Goodwill Trap**;" Presenter: Dr. Carla Fehr, Iowa State University

Lunch with the Chancellor and Provost

Diversity Recruitment Training

Campus search committees continue to receive diversity recruitment training through the ADVANCE initiative, which added content to the existing seminars, including case studies, enhanced training on cognitive bias in committee discussions and diversity recruitment solutions, such as how to write job advertisements for diversity recruiting. In the 2009-2010 academic year, a workshop was offered once during the fall term and twice in the spring term to a total of 26 participants. The spring participants were surveyed

"I think the best part was the discussion by the faculty/admins about how to implement best practices in recruiting and seeing some people start to understand that there are legal ways to address diversity. But the discussion part could have been longer!" – Oct. 2009

about their opinion of the workshop, and 84% of respondents agreed or strongly agreed with the statement that they became more aware of potential bias in the search process that they had not recognized prior to the workshop.

Recruitment Equity Study

A comprehensive study of faculty recruiting is underway for the program initiative years (2005-2009). Preliminary findings present interesting indications for STEM; a complete report will be available in 2011. A content analysis review of faculty job advertisements for diversity inclusive language has found **a gap in the use of diversity language between STEM departments and non-STEM departments.** Approximately one-quarter of the STEM ads include diversity language while close to an equal split exists in non-STEM fields that include diversity language in their ads. Findings from a joint study conducted by ADVANCE at Case Western

Reserve University and UNC Charlotte have found that female candidates in STEM constituted greater proportions of the "short list" candidates and hires during a 5 year period (Bilimoria & Buch, in press). A statistically significant linear relationship was found between the percent of female and underrepresented minority applicants in the candidate pool and their degree of inclusion on the "short list."

Gender equity and diversity equity climate perceptions among faculty are measured intermittently via The Higher Education Research Institute (HERI) survey of University of California – Los Angeles (implemented every 3 years [2007, 2010] for faculty [tenure and non-tenure]) and Harvard's Collaborative of Academic Careers in Higher Education (COACHE) survey (implemented in alternate years [2006, 2008] for tenure track faculty). In 2009, UNC Charlotte ADVANCE Faculty Affairs Office developed an internal climate survey, with plans to pilot the survey in late spring 2010. This survey will be implemented with tenure track faculty as a means of providing consistent and comparable benchmark data for assessment of College's diversity strategic

Dr. Jane Tucker, The Chemistry of Leadership, COACh Workshop, January 2010

plans. Previous annual reports highlight HERI and COACH findings, and can be located on the Academic Affairs website (http://provost.uncc.edu/Reports/).

Women's Speaker Series

In partnership with the Center for Professional and Applied Ethics and its Director, Dr. Rosie Tong, ADVANCE hosted a speaker series entitled "Towards a More Diverse Academy: Women Taking the Lead." Six women who are national leaders in STEM disciplines addressed campus through six lunches and six lectures. A total of 246 students, faculty and staff attended the lectures and lunches, and information has been included on the ADVANCE website for further dissemination.

Dr. Elba Serrano, Regents Professor, New Mexico State University, Women's Speaker Series

Dr. Carla Fehr, Associate Professor, Philosophy and Religious Studies, Iowa State University, Women's Speaker Series

Keynote speakers in 2009-2010 were:

Dr. Deborah Johnson, University of Virginia

Dr. Gail Cassell, Eli Lilly and Company

Barbara Mulkey, Founder and Chairman of Mulkey Engineers and Consultants, Inc.

Dr. Rachel Seidman and **Dr. Laura Edwards,** Duke University

Dr. Elba Serrano, New Mexico State University

Dr. Carla Fehr, Iowa State University

Communications

Communications Goals

The very best communications play an important and strategic role in accomplishment of an organization's mission, especially when the organization is focused on institutional or organizational reform. The goals of the UNC Charlotte ADVANCE strategic communications are to develop and execute clear, consistent and integrated communications designed to: 1) raise awareness of ADVANCE as an effective and influential advocate for advancing the careers of women in STEM and for other faculty 2) increase awareness and support of ADVANCE initiatives and participation in those efforts 3) improve efficiency through consistent and coherent communications and 4) communicate the need for climate change and equip leaders to drive that change. The ADVANCE team hired a Communications Director in November 2009 with communications and stakeholder management experience to lead this effort.

Communications Status

Efforts have focused on establishment of consistent processes, foundational documents and messages to bring increased order and coherence to the ADVANCE communications. Additionally, a strong focus has been placed on raising awareness among broad constituents internally and externally of the ADVANCE initiatives and their connection to institutional transformation. Results include:

Media placements

* 66 placements over six months in internal and external media, including The Charlotte Observer (daily circulation: 196,000; daily readership: over 500,000) and its online website (daily unique visitors: 70,000); WFAE public radio (weekly adult listeners: 190,000 plus); The Business Leader magazine; UNC Charlotte Magazine (15,000 circulation); The College of Liberal Arts and Sciences magazine (15,000 print distribution and 17,000 online distribution); Campus News (2,300 electronic distribution plus additional opt-in readers on-line); multiple websites, including Crossroads Charlotte (the Charlotte region's community-wide diversity effort) and Facebook accounts, including UNC Charlotte's (7,900 fans); the NC Biotechnology news channels and the NC STEM Collaborative blog (both distributed to educators, policy leaders and business leaders). Additional one-to-one stakeholder outreach included emails and other communications directly with on-campus groups, such as relevant student groups, the BRIDGES leadership cohorts, faculty members, colleges' leadership, current and past ADVANCE leadership cohorts, external boards, trustees, etc.

Establishment of a standard "boilerplate" or identity statement: Previously, ADVANCE documents and leaders stated the organization's "reason for being" in varying ways. A new boilerplate statement brings consistency to those statements, links the work to the NSF and signals the evolving institutionalization of the work.

Development of a new website: The previous ADVANCE website, which serves as the primary inbound communications channel, could not be efficiently updated to meet modern standards. A new website has launched, with an emphasis on easy navigation and access to information that has relevancy and applicability. The website strives to present an orderly structure that communicates the organizational cohesion and larger meaning of the work. Tasks have included building a new website and updating almost all the materials that were on the previous website, as well as the conducting of research to obtain new, relevant materials. The new design will be able to grow with the initiative.

Raising awareness of ADVANCE as an advocate: The linkage to ADVANCE from its well-regarded programming and its impact on campus needed more definition. To better communicate, news releases and other communication pieces now include the boilerplate statement, to overtly emphasize and imprint the connection of the programming to the ADVANCE initiative. The website and other communications pieces are updated to include progress toward goals and the influence of ADVANCE on institutional change. Communications about programming – and the overarching mission – have been aggressively distributed, with a high degree of placement in internal and external media. Opportunities to showcase ADVANCE among statewide educational and public policy leaders included publishing of articles in the North Carolina Biotechnology's online publications and the NC STEM Community Collaborative online publication, affiliated with the Bill and Melinda Gates Foundation and the Lt. Governor. Additionally, PI Joan Lorden presented remarks at the North Carolina Technology Association's statewide conference on the university's diversity efforts, including ADVANCE. The Chancellor's spouse spoke about women leaders on campus and included remarks on STEM women provided by ADVANCE. Articles in UNC Charlotte publications that are distributed to wide internal and external audiences include one in the College of Liberal Arts and Sciences magazine and another in the UNC Charlotte magazine. The Charlotte Observer and the Business Leaders magazine also have included coverage of ADVANCE and its efforts, as has the public radio station WFAE.

Increasing Participation: In the past, the primary communications method for inviting campus and external constituents to programming has been email. Faculty share concerns about an overwhelming deluge of email, which limits the effectiveness of this as a communications vehicle. As a result, the recent ADVANCE communications have emphasized information on its website, fliers, campus calendars, news items on the colleges' websites, direct contacts with leaders, PowerPoint slides on high-traffic lobby screens, inclusion in the campus-wide Campus News and when appropriate, distribution to the external community through the daily newspaper, the Chamber of Commerce, the Crossroads Charlotte community-wide diversity website, CASTLE (a community science coalition), community events calendars, the local public radio station's website and on-air announcements and other media. The communications also has been targeted to specific on-campus groups, including the current
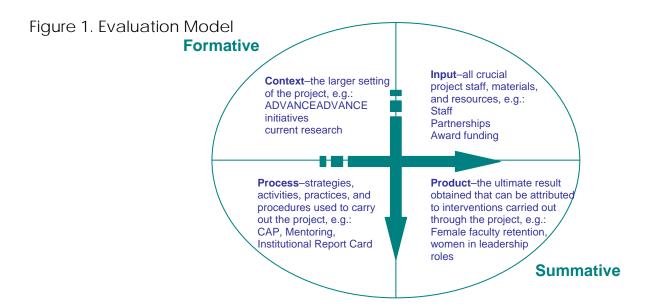
Bridges leadership members and alumni, student groups, Deans, department and college leaders, prior ADVANCE programming participants, the university PR team and others.

Internal communications and project management: Efforts have included bringing more consistency to internal communications, including more precision in minutes, agenda development and research with the Future of the Faculty committee to narrate and enable their work. Agendas, minutes and staff updates are now generated for the Steering Committee and A Team to improve efficiency and effectiveness.

Evaluation

Evaluation Model

Evaluation is a critical component of ADVANCE, to assess program impact and to inform the community of best practices that can be successfully applied within the respective communities. Daniel Stufflebeam's Context, Input, Process, Product (CIPP) model [Stufflebeam, 2000] is being used to assess the program initiatives, providing valuable formative and summative evaluation measures.

Figure 1. Evaluation Model

Formative

Context–the larger setting of the project, e.g.: ADVANCEADVANCE initiatives current research

Input–all crucial project staff, materials, and resources, e.g.: Staff Partnerships Award funding

Process–strategies, activities, practices, and procedures used to carry out the project, e.g.: CAP, Mentoring, Institutional Report Card

Product–the ultimate result obtained that can be attributed to interventions carried out through the project, e.g.: Female faculty retention, women in leadership roles

Summative

Instruments and Implementation

To collect and report on important factors while keeping data collection requirements manageable, the ADVANCE Program Evaluation Team (PET) has established online data collection tools and individual interviews, collecting information on an ongoing basis throughout each semester. A culminating report is produced annually in June. Formative information is provided to program administrators throughout the year via A Team and Steering Committee meetings and distribution lists.

Summative information is made available to constituents throughout the year on an ad hoc basis. Beginning in 2009-2010, the PET plans to develop scorecards and slides for ready-made 'road-shows' of ADVANCE impact to campus and community constituents. The PET is comprised of an internal (university) evaluator and graduate assistant.

Evaluation Goals

The following evaluation goals are customizations from recommendations presented to ADVANCE award recipients during the Principal Investigators' meeting in 2008, by Case Western Reserve University. The evaluation goals for UNC Charlotte ADVANCE are to make systematic efforts to:

1.   Track key indicators of representation, equity, and inclusion as prescribed by the ADVANCE Toolkit

2.   Conduct periodic institutional climate studies to assess climate as it pertains to gender and diversity

3.   Evaluate programs and interventions employed by the ADVANCE initiative, using mixed methods design (qualitative and quantitative means)

4.   Strengthen UNC Charlotte's institutional research infrastructure by improving internal collection, analysis, and dissemination.

Chart 3. Evaluation Timeline for Essential Research Indicators

Evaluation Timeline for Essential Research Questions and Indicators*		
Research Questions	**Indicators**	**Evaluation Tracking Timeline**
What is the distribution of science and engineering faculty by gender, rank and department?	No. of faculty in tenured and tenure track positions by dept., rank, gender	Annual
	No. of non-tenured faculty positions by dept., rank, gender	Trends comparison for Final Report (baseline and grant years)
What are the outcomes of institutional processes of recruitment and advancement for men and women?	No. of faculty who submit tenure packets, no. awarded, by gender and dept.	Annual
	No. of faculty who apply for promotion, no. promoted, by gender, dept. and promotion transition	Annual
	No. of tenured associate professors by dept. and gender with years in rank in 6 3-yr categories	Annual

	No. of faculty who leave dept. voluntarily by rank, gender and dept.	Annual
	No. of faculty hired by rank, gender and dept	Annual
	Cohort analyses of tenure and promotion, including to full professor	Trends comparison for Final Report (baseline and grant years)
	<u>Additional UNC Charlotte Indicator</u>: Conduct periodic faculty climate surveys (HERI, COACHE) and internal survey on alternate years and provide College Climate Scorecards	Complete trend comparison by Annual Report 2011
	<u>Additional UNC Charlotte Indicator</u>: Conduct qualitative investigations of Mentoring and Bonnie Cone Fellowship programs	Conduct during 2010-2011; study in Annual Report 2011
What is the gender distribution of science and engineering faculty in leadership positions in the institution?	No. of men and women scientists and engineers in leadership positions	Annual
What is the allocation of resources for science and engineering faculty by gender at the institution?	Study of salaries of men and women faculty with controls for dept., rank, years in rank	Trends comparison for Final Report (baseline and grant years)
	Study of space allocation of STEM faculty by gender	Benchmark trend comparison for Final Report (2007 and 2010)
	Study of start-up packages of newly hired faculty by gender with controls for field/dept., rank, etc.	Benchmark trend comparison for Final Report (2007 and 2010)

*as outlined in the ADVANCE Toolkit unless otherwise noted

Logic Model

The logic model serves in two capacities. The first capacity is to depict the ADVANCE activities. The logic model also functions to represent the hypothesis of program impact. The project components, i.e. activities, provide input to the campus that is expected to raise awareness of gender disparity and inequity, inform policies and practices, and in turn impact decision maker awareness, search and research, tenure, and promotion (RTP) practices, which correlate with an equitable gender climate and

conditions. These elements influence female STEM faculty productivity and advancement, RPT and advancement into leadership. There is reciprocal impact between female faculty productivity and advancement and climate. The current logic model employed by ADVANCE UNC Charlotte is provided in Appendix A.

Formative Evaluation

The PET will continue conducting formative evaluation for all project components and will maintain the evaluation of the standard NSF indicator data along with patterns of STEM faculty by gender and rank for salary equity and climate. As noted by the site visit report, the following project components will begin formative evaluation as well as summative evaluation:

UNC Charlotte Leadership Program- Although the individual leadership workshops have been formatively evaluated, a summative evaluation is underway for presentation in the final report 2011. Preliminary results will be presented in the 2010 annual report, which will include a comparison of summative workshop evaluation, career progress of past participants, and a long term plan for comprehensive program impact. Primary questions guiding the evaluation are: did participants find the workshops helpful, and if so, how?; did participants move into administrative leadership roles?

Mid-career Mentoring Program- The new faculty mentoring program has been well received and a similar evaluation plan is underway for the arm of the program targeting associate faculty. Formative evaluation of the mid-career mentoring program will include surveys of participants. Summative evaluation will include qualitative study of participants' job satisfaction, promotion and perception of climate to the overall campus response. Key questions guiding the evaluation will be: does the program provide useful career guidance to participants?; does the program enhance the academic climate for participants?; and are participants more satisfied with their career and the campus climate than non-participants?

Evaluation Dissemination

The PET will collaborate closely with the newly appointed Program Communications Director in efforts to effectively communicate ADVANCE progress to the campus community and constituents. As a summative report, the PET is in the process of designing a project and institutional scorecard to indicate progress towards goals. The primary indicators of the project will be graphically depicted and streamlined for ease in dissemination across audiences. An institutional scorecard will be made available to department chairs and college deans. PET anticipates developing additional departmental scorecards as campus wide climate surveys are routinely implemented. We recommend these scorecards for use in departmental and unit strategic planning and internal evaluations.

In addition to the institutional scorecard, which is presented here in the 2010 annual report, and the departmental/unit scorecards for 2011, the PET will manage all ADVANCE component evaluations and

communicate all findings to the project leadership. Communications to the campus and additional constituents will be made in collaboration with the Program Communications Director.

Summary of Evidence

The NSF site visit report from spring 2009 noted a lack of in-depth presentation and discussion of short term progress indicators and the 2008 NSF indicator data. However, the report also notes that the formative evaluation is exemplary, and that the program evaluation is progressing appropriately. To address concerns regarding short-term progress indicators, a benchmark scorecard is in development for the final report of 2011that will display program impact, campus wide gains, and projected overall impact to the university diversity equity initiatives. PET will communicate the annual report and significant evaluation results to the campus community in conjunction with dissemination plans established by the newly appointed Program Communications Director. A summative table of institutional transformation essential indicators, as prescribed by the ADVANCE Toolkit, is presented below (Figure 2). The most notable trends in gender equity outcomes are:

- The number and percentage of female faculty in STEM disciplines remain low, however, **steady increases of women in STEM tenure track faculty positions are evident**.

- **All promotion and tenure package submissions by STEM women since 2006 have been granted**. It is important to note that while this indicator is a positive trend, actual numbers reflect the low number of women submitting promotion and tenure packets compared to male colleagues. This is due in part to the existing disparity of females in STEM areas across the campus, the low volume of hiring women in STEM, and perhaps to other psycho-social forces such as departmental climate.

- **The number of women in STEM leadership roles across campus has increased steadily since an initial drop following the baseline year**, an encouraging factor that is expected to have widespread and long-term impact on campus gender equity.

Challenges and Lessons Learned

A great challenge to the program has been the transition of ADVANCE office staff. The PET hired new staff in 2009 and continues to focus on strategic tracking of goals. A new Program Communications Director was hired during the Fall 2009 term to compliment the program in the ongoing charge to disseminate results and employ communications to further the work and to raise visibility of the ADVANCE initiatives. A new Administrative Support Associate was hired in the spring of 2010 to serve as a full time project coordinator. Staff communications have been restructured to encompass use of a

functional and secure data and information repository. Regular staff meetings are in place and are proving to be instrumental in streamlining program administration. The A TEAM steering committee has served as a guide for project initiatives.

Figure 2. Institutional Transformation Essential Indicators Summation Baseline to 2009

Institutional Transformation Essential Research Questions and Indicators*					
	Indicators				
Research Questions	2004 baseline	2005-06	2006-07	2007-08	2008-09
What is the distribution of science and engineering faculty by gender, rank and department?	14% of Tenure Track STEM Faculty are women; (188 Men, 31 Women)	16% of Tenure Track STEM Faculty are women; (192 Men, 38 Women)	18% of Tenure Track STEM Faculty are women; (194 Men, 42 Women)	20% of Tenure Track STEM Faculty are women; (187 Men, 46 Women)	**20% of Tenure Track STEM Faculty are women**; (216 Men, 53 Women)
What are the outcomes of institutional processes of recruitment advancement for men and women?	22% (2 out of 9) of STEM Tenure packet submissions from women; 50% women promoted	40% (4 out of 10) of STEM Tenure packet submissions from women; 75% women promoted	19% (3 out of 16) of STEM Tenure packet submissions from women; **100% women promoted**	25% (3 out of 12) of STEM Tenure packet submissions from women; **100% women promoted**	25% (4 out of 16) of STEM Tenure packet submissions from women; **100% women promoted**
	28% (4 out of 14) of STEM faculty promotions were women; 75% women promoted	28% (4 out of 14) of STEM faculty promotions were women; 75% women promoted	25% (4 out of 16) of STEM faculty promotions were women; **100% women promoted**	15% (2 out of 13) of STEM faculty promotions were women; **100% women promoted**	46% (6 out of 13) of STEM faculty promotions were women; **100% women promoted**
	Women associate professors hired at assistant and associate level: years in rank range between 1 and 18; 0 years most frequent and an average of 5.6. Men associate professors hired at assistant and associate level: years in rank range between 2-31, with 2 years most frequent and average 8.75.				Women associate professors hired at assistant and associate level: years in rank range between 1 and 25; 2 years most frequent and an average of 5.39. Men associate professors hired at assistant and associate level: years in rank range between 0-31, with 2 years most frequent and an average of 6.89.
	0 women, 6 men voluntarily left STEM	0 women, 6 men voluntarily left STEM	1 woman, 4 men voluntarily left STEM	2 women, 6 men voluntarily left STEM	1 woman, 3 men voluntarily left STEM
	44% (7 out of 16) STEM new hires were women	27% (6 out of 22) STEM new hires were women	24% (5 out of 21) STEM new hires were women	31% (8 out of 26) STEM new hires were women	36% (5 out of 14) STEM new hires were women
What is the gender distribution of science and engineering faculty in leadership positions in the institution?	35% of women in university leadership roles	28% of women in university leadership roles	28% of women in university leadership roles	30% of women in university leadership roles	35% of women in university leadership roles

Future Directions

A climate survey has been designed to specifically address the campus needs, and fit into a routine cycle of implementation that compliments the university participation in HERI and COACHE faculty surveys. The internal customized survey has been implemented campus wide during the Spring semester. Having an internal climate survey that is offered on an annual basis will enable the university to continuously monitor key indicators of campus equity and satisfaction with consistency. 2010 will be the first year of customized climate data collection, with the university faculty having participated in the two aforementioned external climate surveys. The survey has been designed to measure the attitudes of tenure track faculty regarding campus climate, job satisfaction, campus and community, mentoring, students, teaching and evaluation of department chairs. The results will be distributed during the Fall 2010 term to the Provost and then on to the College Deans, in the form of a diversity climate scorecard, designed to align with the Colleges' diversity strategic plans.

A faculty recruitment study has begun to measure the presence of diversity language in recruitment ads, the diversity of candidate pools, the diversity of candidate finalists, and the diversity of newly hired faculty. The study will examine any disparities in STEM and non-STEM disciplines and present recommendations regarding recruitment training and practices among Academic Affairs. The full study results will be available in Fall of 2010 as an internal report and supplement to the 2011 annual report to the NSF.

A comprehensive salary equity study will be repeated in 2010 to determine the status of gender salary equity among STEM faculty. This report is expected to provide a benchmark for continued campus engagement in gender equity initiatives beyond the lifecycle of the Institutional Transformation Award.

Conclusions

While positive indicators of movement exist in the direction of advancing women in STEM faculty positions and leadership roles, parity remains a challenge. The gains made are notable, and must continue if gender parity is to be achieved. The ADVANCE initiative is a strong step forward in the university's focus toward gender equity. The momentum gained by the efforts made during the past four years of the initiative must continue beyond the grant lifecycle if the university is to see the continued upward trends in gender equity among STEM discipline faculty. A continuous focus toward gender equity requires institutionalization of the policy recommendations, continued review of policies, and formalized partnerships to ensure that equity indicators continue to be monitored and reported to the campus leadership, in a form that will allow action to occur.
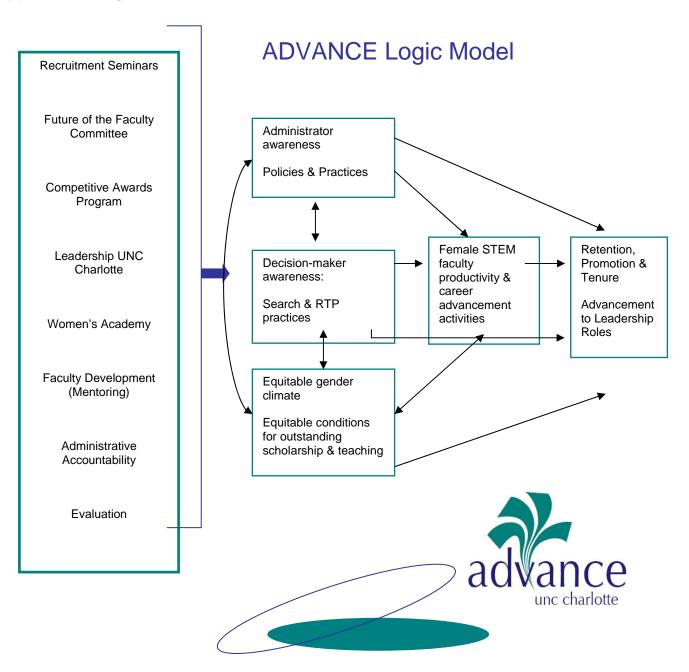
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Appendix A. Logic Model

ADVANCE Logic Model

Left column (inputs):
- Recruitment Seminars
- Future of the Faculty Committee
- Competitive Awards Program
- Leadership UNC Charlotte
- Women's Academy
- Faculty Development (Mentoring)
- Administrative Accountability
- Evaluation

Outcome boxes:
- Administrator awareness — Policies & Practices
- Decision-maker awareness: Search & RTP practices
- Equitable gender climate — Equitable conditions for outstanding scholarship & teaching
- Female STEM faculty productivity & career advancement activities
- Retention, Promotion & Tenure — Advancement to Leadership Roles

advance
unc charlotte

Appendix B: Toolkit Tables

Data Collection Methodology: The data used for the evaluation of the position of women in STEM and SBS fields for the annual report was collected in the beginning of September 2009. The period of time the charts for the annual report cover are for the 2008-2009 academic year, as this is the most currently available data. All of the appropriate faculty are included in the charts except for those hired after January 2009. Only six individuals were hired after this data collection. The faculty who retired at the end of the 2008-2009 school year were included in the total number of faculty since they were still part of the departments and did represent the gender makeup of the department during the 2008-2009 academic year. At UNC Charlotte, Geography and Earth Science is one department, so these are included as a STEM field.

Table 1 displays the numbers and percentages of women tenured and tenure track faculty in STEM departments during the academic year 2008-2009 (the most current data available). This table shows that 20% of STEM tenured and tenure track faculty are women, which represents a slow yet steady increase since baseline year of 2004, where 14% were women. The numbers of women in STEM tenured and tenure track faculty positions remains disparate to men in comparable positions. Computer Sciences and Geography and Earth Science are leading the STEM disciplines in their percentages of women faculty, as a result of recent hiring efforts. Parity has been reached between women and men faculty in most of the SBS disciplines. However, a disparity of women exists in Economics and a disparity of men exists in Anthropology and Psychology.

Table 1. UNC Charlotte, Number and Percent of Women Tenured and Tenure Track Faculty in Science and Engineering by Rank and Department. 2008-2009

	Females			Males			Percent Women		
	Full	Associate	Assistant	Full	Associate	Assistant	Full	Associate	Assistant
STEM SCIENCE									
Engineering	**2**	**4**	**6**	**20**	**37**	**23**	**9.09%**	**9.76%**	**20.69%**
Engineering	0	1	0	0	0	2	0.00%	100.00%	0.00%
Civil Engineering	0	1	1	4	9	2	0.00%	10.00%	33.33%
Electrical and Comp.	0	0	1	8	11	5	0.00%	0.00%	16.67%
Engineering Technology	1	2	1	3	7	6	25.00%	22.22%	14.29%
Mechanical Engineering	1	0	3	5	10	8	16.67%	0.00%	27.27%
Physical Sciences	**1**	**4**	**2**	**10**	**13**	**3**	**9.09%**	**23.53%**	**40.00%**
Chemistry	1	2	1	5	4	1	16.67%	33.33%	50.00%
Physics and Optical Science	0	2	1	5	9	2	0.00%	18.18%	25.00%
Mathematics and Statistics	**1**	**2**	**3**	**22**	**10**	**12**	**4.35%**	**16.67%**	**20.00%**
Computer Sciences	**1**	**1**	**7**	**7**	**10**	**11**	**12.50%**	**9.09%**	**38.89%**
Computer Science	1	0	5	5	5	6	16.67%	0.00%	45.45%

Software and Information Systems	0	1	2		2	5	5		0.00%	16.67%	28.57%
Life Sciences	**1**	**9**	**2**		**11**	**3**	**8**		**8.33%**	**75.00%**	**20.00%**
Biology	1	6	1		10	2	5		9.09%	75.00%	16.67%
Bioinformatics	0	3	1		1	1	3		0.00%	75.00%	25.00%
Geography and Earth Science	**0**	**3**	**4**		**6**	**7**	**5**		**0.00%**	**30.00%**	**44.44%**
TOTAL	6	23	24	53	76	80	62	218	7.32%	22.33%	27.91%
SBS Psychology and Social Science											
Psychology	**1**	**8**	**4**		**7**	**10**	**1**		**12.50%**	**44.44%**	**80.00%**
Social Sciences	**8**	**15**	**11**		**25**	**15**	**11**		**24.24%**	**50.00%**	**50.00%**
Criminal Justice	1	3	2		3	2	2		25.00%	60.00%	50.00%
Economics	1	2	1		9	4	2		10.00%	33.33%	33.33%
Political Science	2	4	3		8	7	3		20.00%	36.36%	50.00%
Sociology	3	3	3		3	2	3		50.00%	60.00%	50.00%
Anthropology	1	3	2		2	0	1		33.33%	100.00%	66.67%
TOTAL	9	23	15		32	25	12		21.95%	47.92%	55.56%

Table 2 reflects the faculty gender composition for the baseline academic year of 2004-2005, prior to the start of the ADVANCE initiative. This data reveals the preponderance of women in non-tenure track faculty positions in STEM and SBS disciplines. The baseline data will be compared to the comparable data during the final year of the grant as a measure of trends during the project initiative.

Table 2. Fall 2004 STEM and SBS Departmental Faculty Gender Composition

	Tenured and Tenure Track			Non-Tenure Track			Non-Tenure Track as % of All Women
	All	Women	% Women	All	Women	% Women	
ENGINEERING	**76**	**8**	**10.54%**	**8**	**1**	**12.50%**	**11.10%**
Engineering	2	0	0.00%	1	0	0.00%	0.00%
Engineering Technology	19	2	10.53%	2	0	0.00%	0.00%
Electrical and Comp. Engineer	21	1	4.76%	0	0	0.00%	0.00%
Mechanical Engineering	21	4	19.05%	5	1	20.00%	20.00%
Civil Engineering	13	1	7.69%	0	0	0.00%	0.00%
PHYSICAL SCIENCES	**33**	**7**	**21.21%**	**5**	**2**	**40.00%**	**22.22%**
Chemistry	17	4	23.53%	5	2	40.00%	33.33%
Physics and Optical Science	16	3	18.75%	0	0	0.00%	0.00%
EARTH SCIENCE	**19**	**1**	**5.26%**	**6**	**3**	**50.00%**	**75.00%**
Geography and Earth Science	19	1	5.26%	6	3	50.00%	75.00%
MATHEMATICS AND STATISTICS	**41**	**6**	**14.63%**	**8**	**6**	**75.00%**	**50.00%**
COMPUTER SCIENCES	**28**	**4**	**14.29%**	**8**	**2**	**25.00%**	**33.33%**
Computer Science	18	3	16.67%	7	2	28.57%	40.00%
Software & Information	10	1	10.00%	1	0	0.00%	0.00%
LIFE SCIENCES	**22**	**5**	**22.73%**	**7**	**5**	**71.43%**	**50.00%**
Biology	22	5	22.73%	7	5	71.43%	50.00%

PSYCHOLOGY	26	9	34.62%	2	2	100.00%	18.18%
SOCIAL SCIENCES	**68**	**27**	**39.71%**	**9**	**4**	**44.44%**	**12.90%**
Criminal Justice	9	4	44.44%	2	2	100.00%	33.33%
Economics	15	3	20.00%	4	1	25.00%	25.00%
Political Science	21	6	28.57%	0	0	0.00%	0.00%
Sociology and Anthropology	23	14	60.87%	3	1	33.33%	6.67%

Tables 3, 4a and **4b** show the tenure review outcomes by gender from the 2005-06 academic year to the 2008-09 academic year. In STEM disciplines, men are applying for early tenure more often than women. The number of women in STEM applying to and receiving tenure has remained fairly constant, and low compared to men, whose applications and approvals have increased since 2005. **Table 4a** displays the promotion to associate level review outcomes by gender from the 2005-06 academic year to the 2008-09 academic year. Women faculty applications for promotion to associate represent only 27% of the total between 2005 and 2009. The gender gap remains in associate level reviews between women and men faculty, however it is a slightly smaller gap than in the overall promotion reviews (as shown in Table 3 above), an indication that women in STEM faculty roles are progressing from assistant to associate levels at a slightly faster rate than they are from associate to full (**Table 4b**). Women faculty applications for promotion to full represent only 30% of the total between 2005 and 2009. Approvals are higher for women than men across both levels of promotion, from assistant to associate and associate to full.

Table 3: Tenure Review Outcomes by Gender 2005-2009 - STEM Fields								
	# of Reviews		# of Approvals		# of Denials		Early Tenure	
Pre-ADVANCE Year: 2005-2006	Women	Men	Women	Men	Women	Men	Women	Men
Engineering	1	3	1	3	0	0	0	0
Physical Sciences	0	1	0	1	0	0	0	1
Earth Atmospheric, and Ocean Science	1	0	1	0	0	0	1	0

Mathematical and Computer Sciences	2	1	1	1	1	0	0	1
Biological/Agricultural Sciences	0	1	0	1	0	0	0	0
ADVANCE Year 1: 2006-2007								
Engineering	1	5	1	5	0	0	0	0
Physical Sciences	1	1	1	1	0	0	0	1
Earth Atmospheric, and Ocean Science	0	3	0	3	0	0	0	2
Mathematical and Computer Sciences	0	4	0	3	0	1	0	0
Biological/Agricultural Sciences	1	0	1	0	0	0	0	0
ADVANCE Year 2: 2007-2008								
Engineering	1	4	1	4	0	0	1	0
Physical Sciences	0	2	0	2	0	0	0	1
Earth Atmospheric, and Ocean Science	0	0	0	0	0	0	0	0
Mathematical and Computer Sciences	1	3	1	2	0	1	0	0
Biological/Agricultural Sciences	1	0	1	0	0	0	0	0
ADVANCE Year 3: 2008-2009								
Engineering	1	6	1	5	0	1	0	4
Physical Sciences	0	2	0	2	0	0	0	2
Earth Atmospheric, and Ocean Science	1	0	1	0	0	0	0	0
Mathematical and Computer Sciences	1	4	1	3	0	1	0	0
Biological/Agricultural Sciences	1	0	1	0	0	0	0	0

Table 3: Tenure Review Outcomes by Gender 2005-2009 - SBS Fields			
	# of Reviews	# of Approvals	# of Denials	Early Tenure

Pre-ADVANCE Year: 2005-2006	Women	Men	Women	Men	Women	Men	Women	Men
Psychology	0	1	0	1	0	0	0	1
Social Science	0	1	0	1	0	0	0	1
ADVANCE Year 1: 2006-2007								
Psychology	0	2	0	2	0	0	0	2
Social Science	1	0	1	0	0	0	1	0
ADVANCE Year 2: 2007-2008								
Psychology	1	1	1	1	0	0	1	1
Social Science	1	5	1	5	0	0	0	3
ADVANCE Year 3: 2008-2009								
Psychology	2	0	2	0	0	0	1	0
Social Science	1	1	1	1	0	0	1	1

Table 4a: Promotion Review Outcomes by Gender: Assistant to Associate 2005-2009 - STEM Fields								
	# of Reviews		# of Approvals		# of Denials		Early Tenure and Promotion	
Pre-ADVANCE Year: 2005-2006	Women	Men	Women	Men	Women	Men	Women	Men
Engineering	1	3	1	3	0	0	0	0
Physical Sciences	1	1	1	1	0	0	1	1
Earth Atmospheric, and Ocean Science	0	0	0	0	0	0	0	0
Mathematical and Computer Sciences	2	1	1	1	1	0	0	1
Biological/Agricultural Sciences	0	1	0	1	0	0	0	0
ADVANCE Year 1: 2006-2007								
Engineering	1	4	1	4	0	0	0	0
Physical Sciences	1	1	1	1	0	0	0	1
Earth Atmospheric, and Ocean Science	0	2	0	2	0	0	0	1
Mathematical and Computer Sciences	0	4	0	3	0	1	0	0
Biological/Agricultural Sciences	1	0	1	0	0	0	0	0
ADVANCE Year 2: 2007-2008								
Engineering	1	4	1	4	0	0	1	0
Physical Sciences	0	2	0	2	0	0	0	1
Earth Atmospheric, and Ocean Science	0	0	0	0	0	0	0	0
Mathematical and Computer Sciences	0	3	0	2	0	1	0	0
Biological/Agricultural Sciences	1	0	1	0	0	0	0	0
ADVANCE Year 3: 2008-2009								

Engineering	1	4	1	3	0	1	0	2
Physical Sciences	0	2	0	2	0	0	0	2
Earth Atmospheric, and Ocean Science	1	0	1	0	0	0	0	0
Mathematical and Computer Sciences	1	3	1	2	0	1	0	0
Biological/Agricultural Sciences	1	0	1	0	0	0	0	0

Table 4a: Promotion Review Outcomes by Gender: Assistant to Associate 2005-2009 - SBS Fields

	# of Reviews		# of Approvals		# of Denials		Early Tenure and Promotion	
Pre-ADVANCE Year: 2005-2006	Women	Men	Women	Men	Women	Men	Women	Men
Psychology	0	1	0	1	0	0	0	1
Social Science	0	1	0	1	0	0	0	1
ADVANCE Year 1: 2006-2007								
Psychology	0	1	0	1	0	0	0	1
Social Science	1	0	1	0	0	0	1	0
ADVANCE Year 2: 2007-2008								
Psychology	1	1	1	1	0	0	1	1
Social Science	1	4	1	4	0	0	0	2
ADVANCE Year 3: 2008-2009								
Psychology	1	0	1	0	0	0	0	0
Social Science	1	1	1	1	0	0	1	1

Table 4b: Promotion Review Outcomes by Gender: Associate to Full 2005-2009 - STEM Fields

	# of Reviews		# of Approvals		# of Denials		Unscheduled Promotion	
Pre-ADVANCE Year: 2005-2006	Women	Men	Women	Men	Women	Men	Women	Men
Engineering	0	2	0	1	0	1	0	0
Physical Sciences	0	1	0	1	0	0	0	1

Earth Atmospheric, and Ocean Science	0	0	0	0	0	0	0	0
Mathematical and Computer Sciences	0	1	0	1	0	0	0	1
Biological/Agricultural Sciences	0	0	0	0	0	0	0	0
ADVANCE Year 1: 2006-2007								
Engineering	1	1	1	1	0	0	0	1
Physical Sciences	0	0	0	0	0	0	0	0
Earth Atmospheric, and Ocean Science	0	0	0	0	0	0	0	0
Mathematical and Computer Sciences	0	0	0	0	0	0	0	0
Biological/Agricultural Sciences	0	0	0	0	0	0	0	0
ADVANCE Year 2: 2007-2008								
Engineering	0	1	0	1	0	0	0	0
Physical Sciences	0	0	0	0	0	0	0	0
Earth Atmospheric, and Ocean Science	0	0	0	0	0	0	0	0
Mathematical and Computer Sciences	0	0	0	0	0	0	0	0
Biological/Agricultural Sciences	0	1	0	1	0	0	0	1
ADVANCE Year 3: 2008-2009								
Engineering	0	0	0	0	0	0	0	0
Physical Sciences	0	0	0	0	0	0	0	0
Earth Atmospheric, and Ocean Science	0	0	0	0	0	0	0	0
Mathematical and Computer Sciences	2	0	2	0	0	0	1	0
Biological/Agricultural Sciences	0	0	0	0	0	0	0	0

Table 4b: Promotion Review Outcomes by Gender: Associate to Full 2005-2009 - SBS Fields

	# of Reviews		# of Approvals		# of Denials		Unscheduled Promotion	
Pre-ADVANCE Year: 2005-2006	Women	Men	Women	Men	Women	Men	Women	Men
Psychology	0	1	0	1	0	0	0	1
Social Science	0	1	0	1	0	0	0	1
ADVANCE Year 1: 2006-2007								
Psychology	0	0	0	0	0	0	0	0
Social Science	0	0	0	0	0	0	0	0
ADVANCE Year 2: 2007-2008								
Psychology	0	0	0	0	0	0	0	0
Social Science	1	1	0	1	1	0	1	0
ADVANCE Year 3: 2008-2009								
Psychology	0	0	0	0	0	0	0	0
Social Science	0	2	0	2	0	0	0	2

Table 5ab displays the years in rank at the associate level by gender. The pattern for women in STEM is slightly different from that of men, in that a greater proportion of women spend 0-5 years in rank than do males. This may be an indicator that women are being newly hired or that males are getting promoted faster than females. When considering that the percentage of new faculty hires who are women is roughly one-third of male faculty hires (between 2004-05 and 2008-09), it may be that the latter explanation is likely. It should be noted that UNC Charlotte only recently became a research intensive university, prior to which a teaching track option existed for faculty. This could explain a large proportion of the faculty in 15 or more years in rank and the large proportions of both women and men with 6 or more years in rank at the associate level, especially for male faculty who likely made up a much higher proportion of those hired when the university was a teaching university.

Table 5. Years in Rank at the Associate Professor Level for STEM and SBS Faculty Hired as Assistant Professor and Associate, 2008-2009

	STEM				SBS			
	Women		Men		Women		Men	
Years in Rank	Number	% of Women	Number	% of Men	Number	% of Women	Number	% of Men
0-2	9	52.94%	26	37.68%	6	23.08%	10	32.26%
3-5	4	23.53%	8	11.59%	6	23.08%	8	25.81%
6-8	1	5.88%	16	23.19%	1	3.85%	3	9.68%
9-11	0	0.00%	6	8.70%	4	15.38%	3	9.68%
12-14	1	12.50%	2	2.90%	2	7.69%	2	6.45%
15 or more	2	11.76%	11	15.94%	7	26.92%	5	16.13%

	STEM		SBS	
	Women	Men	Women	Men
Range	5.00	15.00	10.00	11.00
Mean	20.50	22.00	18.71	23.80

Standard Deviation	3.54	6.36	4.07	4.55
Median	20.50	20.00	19.00	22.00
N	2	11	7	5

Note: Percents in columns refer to the percentage of men out of total men at each category of rank, so the percentage of men with years in rank of 0-2 is 32.26% out of the total of 100% of men in all rank categories.

Table 6 shows the faculty attrition by rank and gender for 2008-09, the most recent academic year available. Voluntary leave for all levels is comparable between women and men. However, when considered in conjunction with the lower representation of women in STEM, the attrition of even 1 woman has a greater impact on gender disparity than does 3 men.

Table 6. Voluntary, Non-Retirement Attrition, by Rank and Gender, 2008-2009

	Assistant		Associate		Full	
STEM	Women	Men	Women	Men	Women	Men
Engineering						
Engineering						
Civil Engineering		1				
Electrical and Comp.						
Engineering Technology						
Mechanical Engineering						
Physical Sciences						
Chemistry	1					
Physics and Optical Science						

Mathematics and Statistics					
Computer Sciences					
Computer Science					
Software and Information Systems					
Life Sciences					
Biology		1			
Bioinformatics					
Geography and Earth Science		1			
SBS					
Psychology					
Social Sciences					
Criminal Justice		1			
Economics					
Political Science					
Sociology					
Anthropology	1				

Table 7 displays new faculty STEM hires in 2008-09 by gender. Men were hired twice as often as women were for STEM faculty positions (2 to 1 ratio).

Table 7. New Hires in STEM and SBS, 2008-2009

	Assistant			Associate			Full		
STEM	Men	Women	%Women	Men	Women	%Women	Men	Women	%Women
Engineering									
Engineering									
Civil Engineering									
Electrical and Comp.	1		0.00%						
Engineering Technology	1	1	50.00%						
Mechanical Engineering				2		0.00%			
Physical Sciences									
Chemistry									
Physics and Optical Science									
Mathematics and Statistics	2	1	33.33%						
Computer Sciences									
Computer Science	1		0.00%	1		0.00%			
Software and Information Systems									
Life Sciences									

Biology	1		0.00%			1	100.00%		
Bioinformatics		1	100.00%						
Geography and Earth Science	1	1	50.00%						
SBS									
Psychology	1		0.00%						
Social Sciences									
Criminal Justice									
Economics									
Political Science	2	2	50.00%						
Sociology									
Anthropology									

Table 8 shows the faculty leadership gender distribution, and indicates that women are less represented than men. However, it should be noted that female leadership has continued to increase since baseline year, a positive force for the campus gender equity initiative.

Table 8. Faculty Leadership Positions

<div align="center">Number of Women Faculty</div>

	All Faculty	All	STEM	SBS
Tenured Full Professors	206	37	6	8
Full Professors	227	42	6	9
STEM Department Heads	10	na	1	na
SBS Department Heads	7	na	na	3
Deans	9	3	0	0
Associate/Assistant Deans	24	12	3	1
Center Directors	9	5	0	0
President, Vice-Presidents, Provost, Vice-Provosts	9	4	0	1
Endowed/Named Chairs				
Promotion and Tenure Committees	4	1	0	0

Appendix C: List of STEM and SBS Departments

Science, Technology, Engineering, and Mathematics Departments

Engineering: Civil Engineering, Engineering, Electrical and Computer Engineering, Engineering Technology, Mechanical Engineering

Physical Sciences: Chemistry, Physics and Optical Science

Mathematics and Statistics

Computer Science: Computer Science, Software and Information Systems

Life Sciences: Biology, Bioinformatics

Geography and Earth Science: At UNC Charlotte Geography and Earth Science is one department, so these are included as a STEM field.

Social and Behavioral Sciences

Psychology

Social Sciences: Criminal Justice, Economics, Political Science, Sociology, Anthropology

Appendix D: Publications 2008-2009

Bilimoria, D., & Buch, K. (in press). Engendering faculty diversity through more effective search and recruitment. *Change: The Magazine of Higher Learning*.

Cain, A., Kosara, R., and Gibas, C. J. (2008). A data warehouse for collection and visual analysis of genomic data. *13th institute of Biological Engineering Meeting (IBE 2008*), Sheraton Chapel Hill, Chapel Hill, NC, Mar 6-9, 2008.

Johnson, B. G., Eppes, M.C., Diemer, J.A., (in press). Surficial geologic map of the Upper Conejos River drainage, southeastern San Juan Mountains, southern Colorad*o. Journal of Maps*.

Johnson, B., Jiminez-Moreno, G., Eppes, M., Diemer, J., and Felts, M. (2009). Preliminary paleoclimate implications from a 7 meter sub-alpine bog core in southern Colorado, USA. *Geological Society of America Abstracts with Programs,* v. 41, No. 7, 275, Portland, Oregon, October 2009.

Layzell, A.L., Eppes, M.C., and Johnson, B.G. (2009). Soil geomorphology of the central Conejos River Valley, Colorado: Fluvial response to post-Last Glacial Maximum (LGM) climates and sediment supply. *Geological Society of America Abstracts with Programs*, Vol. 41, No. 7, 249-6.

Lee, J. A. (in press). Students' perceptions of and satisfaction with faculty diversity. *College Student Journal.*

Lee, J. A. (2009). *Student diversity campus climate survey*. Paper presented at the 2009 Summer Diversity Institute. Charlotte, NC, May 2009.

Lee, J. A.,Campbell-Whatley, G. D., & Toms, O. (in review). *Student perceptions of diversity and campus climate: When students speak.*

Lee, J. A., Foos, P. W., Clow, C. L. (2010). Caring for one's elders and family-to-work conflict. *The Psychologist Manager Journal, 13,* 15-39.

Lu, N., Swan, R., and Wang, L. (2010). Mechanical properties of hemp fiber reinforced polymeric composite with reclaimed HPDE. Proceeding of *American Society of Composite 2010, Dayton, OH, September 2010.*

Lu, N. and Wang, L. (in press). Effects of surface treatment of hemp fiber on mechanical properties of hemp reinforced HDPE composite. *Journal of Composite Material.*

McMillan, S. K. (in press). Ecosystem restoration through integration of ecological modeling with experimental research. *To be published in the journal WATER.*

Pathak, A., Srivatsa, A. and Xie, J. (2008). An analytical model for handoff overhead analysis in internet-based infrastructure mesh networks. *Proceedings of IEEE International Conference on Communications (ICC 2008)*, pp. 2884-2888, May 2008.

Sokolova I.M. (2009). Apoptosis in molluscan immune defense. *Invertebrate Survival Journal 6*: 49-58. Available: http://www.isj.unimo.it/articoli/ISJ183.pdf.

Srivatsa, A. and Xie, J. (2008). A performance study of mobile handoff delay in IEEE 802.11-based Wireless Mesh Networks. *Proceedings of IEEE International Conference on Communications (ICC 2008)*, pp. 2485-2489, May 2008.

Stearns, E. (2009). Perpetuating segregation? High school racial composition and its Influence on civic-related behaviors. Presented at the *Southern Sociological Society Annual Meeting*, New Orleans, LA, April 2009.

Tsivitse, S. T., Peters, M. G., Stoy, A. L., Mundy, J. A., and Bowen, R. S. (2009).   The effect of downhill running on Notch signaling in regenerating skeletal muscle. *European Journal of Applied Physiology*, 106:759–767, May 2009.

Zeidan, F., Johnson, S.K., Diamond, B., David, Z.*, Goolkasian, P. (in press). Mindfulness meditation improves cognition: Evidence of brief mental training. *Consciousness and Cognition*, in press.

Zeidan, F., Johnson, S.K., Diamond, B.J., David, Z., Goolkasian, P. (2010). Mindfulness meditation improves cognition: Evidence of brief mental training. Presented *at Cognitive Neuroscience Society*, Montreal, Canada, April 2010.

Zeidan, F., Johnson, S.K., Goolkasian, P. (in press). The effects of brief and sham meditation on mood and cardiovascular variables. *Journal of Complementary and Alternative Medicine*, in press.

Zhao, W. and Xie, J. (2009). Inter-gateway cross-layer handoffs in wireless mesh networks. *Proceedings of IEEE Global Telecommunications Conference* (GLOBECOM, 2009), Honolulu, HI, December 2009.