

ADVANCE: Institutional Transformations for the Future of the Faculty Annual Report

June 2008-June 2009

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1. PROJECT PARTICIPANTS

PRINCIPAL INVESTIGATOR:

Joan F. Lorden: Provost; Vice Chancellor for Academic Affairs

CO PRINCIPAL INVESTIGATORS:

Yvette M. Huet: Department of Biology: Dr. Huet is the Project Manager to the ADVANCE grant. She has worked 43 months on the ADVANCE grant.

Cann, Arnie: Department of Psychology: Dr. Cann works as an evaluator and works on the project for three months annually.

Mickelson, Roslyn Arlin: Department of Sociology: Dr. Mickelson continued to work as an evaluator until December, 2008. She worked 1 month on the project this year.

ADVANCE STEERING COMMITTEE MEMBERS:

Blat, Catherine: Student Development and Success. Dr. Blat works on the Competitive Awards Program. She receives a time release for 0.5 months.

Buch, Kim: Psychology. Dr. Buch works on the mid-career mentoring initiative and works 0.5 months a year.

Coger Robin: Mechanical Engineering. Dr Coger chairs the Competitive Awards program and works 0.5 months a year.

Gutierrez, Nancy: Dean of the College of Arts and Sciences. She is on the UNC Charlotte Leadership Committee. She has worked 0.5 months for the ADVANCE Grant.

Hilger, Helene: Civil and Environmental Engineering. She sits on the UNC Charlotte Leadership Committee. She has worked 0.5 months for the ADVANCE Grant.

Schmaling, Karen: Dean of the College of Health and Human Services. She chairs the Committee for the Future of the Faculty. She has worked 0.5 months on the project.

Sell Susan. Assistant Dean in the Graduate School. Dr. Sell is on the Future of the Faculty Committee and is part of the team for the Competitive Awards Program. I would take her off the list.

Tong, Rosemarie. Center for Professional and Applied Ethics. Dr Tong is a member of the Women's Academy. She works 0.5 months

Wayland, Coral: Department of Anthropology and Program Director for Women's Studies. She is the chair of the Women's Academy. She works 0.5 months

Peta Katz: Advance Grant Coordinator. She is employed full time and coordinates projects for the ADVANCE grant

STUDENTS:

Neena Banerjee: A graduate student in Sociology. She works 20 hours a week with the evaluation team.

Krupesh Thacker: A graduate student in Public Health Policy. He works 20 hours a week in the ADVANCE Faculty Affairs Office.

2. PARTNERS

We have formed alliances with the UNC Bridges Program, which aims to develop and sharpen the skills of women alumni 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 on to carry out projects, such as the focus groups that address pertinent career issues, and the subsequent follow up meetings with all women faculty and staff. We will continue to work with these groups. Because the UNC Bridges program is a UNC system-wide program, this alliance allows us to bring the work of ADVANCE to our 16 sister institutions.

The ADVANCE Program is located in space that is contiguous with the Office of the Council on University Community. The Chancellor charged the Council, which was 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 comprised 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's 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, to promote equity and inclusiveness in policy and climate.

The ADVANCE Program (Women's Academy) partnered with the Center for Professional and Applied Ethics to host a series of speakers on research on gender and equity. The series also brought to campus leading women academicians to speak on their research and network with women faculty. This collaboration provided several opportunities to raise awareness of the ADVANCE Program's goals and initiatives to students, faculty, and administrators from across the institution.

3. INTRODUCTION

The ADVANCE Institutional Transformation Project was designed to address the specific needs of gender equity at the University of North Carolina at Charlotte. The aims of the grant are to increase the recruitment, retention and promotion of women in the STEM disciplines, notably science, technology, engineering and mathematics.

We report here on project activities occurring since our last annual report, June 1st 2008, which includes the last quarter of project Year Two and three quarters of project Year Three.

During Year 3 of the University of North Carolina Charlotte's NSF ADVANCE Institutional Transformation for the Future of the Faculty Award, we have continued to make strides in the recruitment, retention, and advancement of women in the STEM disciplines.

In the fall of 2006, (the inception of the grant), 27.7% of the Assistant Professors and 33% of the Associate Professors hired were women, for a total of six new STEM women faculty. In 2008-2009, 20% of new tenured/tenure-track positions in STEM were filled by women (12 males and 3 women) including one spousal hire. This is a decrease from the previous year and we are working to understand if this is an aberration or whether new approaches are needed in our recruitment initiatives.

In 2006 all four women who were eligible for tenure and promotion were successful. This number includes one woman in the Social and Behavioral Sciences. In 2007, 5 women were eligible and received tenure. While these nine women have added to the

diversity of their departments, 22 men were promoted and tenured during the same period. Thus, 18.5% of those receiving tenure were women. In contrast, in 2008-2009 one woman was promoted to Full Professor and 5 women received tenure in STEM disciplines. There were no men that were promoted to Full Professor and 11 men received tenure an increase to 45% of faculty receiving tenure being women.

The data on recruitment, promotion and tenure indicate the need for the broad based approach to institutional transformation that we are engaged in with the help of the ADVANCE Program. At this point, our proposed initiatives are in place and we are evaluating their effectiveness. For example, we have conducted recruitment workshops for search committees to emphasize best practices and ways to avoid cognitive biases. More details on evaluation are presented below. The ADVANCE Leadership Team has met to discuss progress and policies. In addition, this committee has guided and implemented the project's initiatives. As of writing this report all of our initiatives are in place and are reaching their target audience.

The NSF 3rd year review team had their site visit at the end of April 2009. They met with every constituency of the ADVANCE program as well as individuals that have not participated in ADVANCE initiatives. To date we have not received the report from the site visit. However, the observations of the site reviewers will be used to guide our future plans for years 4 and 5 and beyond.

4. RECRUITMENT AND RETENTION

Recruitment and Retention of faculty continues its focus in two major areas: A) Faculty recruitment seminars which focus on unconscious bias, university diversity goals, places to seek underrepresented candidates, how to conduct interviews that ensure gender equity, and the hiring process itself. In 2008-2009 we held four such workshops open to anyone but required of at least one member of every search committee. B) The continued efforts of the Committee on the Future of the Faculty to examine policies and procedures in order to recommend changes that would support the recruitment, progression, and retention of women faculty.

POLICY CHANGES

A) Recruitment

We have expanded the training of faculty search committees. The recruitment workshops use an interactive case study format. The discussions have been engaging and have allowed faculty across the campus to share successful approaches to recruitment. The initial intent was that one member of every search committee would attend a workshop. In practice, multiple members have often attended and, in 2008, the department chairs requested that an additional workshop be added to accommodate hiring committees. Feedback from the Program Evaluation Team (PET) has helped structure the workshop to more effectively meet the needs of the faculty. In addition, the PET has recently completed a study of patterns in STEM faculty hiring by gender and rank from 2004 to 2008. The data indicate that the proportion of women hired at the assistant professor level has decreased slightly although the *total number* of women has increased (29% to 25%; n=18 vs. 20). This is of concern, but appears to be a function of a large amount of hiring in fields in which there are relatively few women candidates. Importantly, the percentages of women STEM associate and full professors have increased over the same time period. This appears to be due, in part, to the hiring of relatively more women than men at the associate level. It is also worth noting that before the start of the ADVANCE project, UNC Charlotte had only one female distinguished professor. This year, there are five. Further review of our recruitment program's outcomes is underway. Nonetheless, it is clear that there has been some change in behavior that coincides with attendance at the recruitment workshops and the emphasis placed on fair and effective hiring practices.

On the policy side, the Committee on the Future of the Faculty (CFF) was established for the purpose of identifying barriers and recommending changes where necessary to improve the recruitment, retention, and full professional development of women faculty members, especially those in the STEM disciplines. UNC Charlotte has allowed faculty to stop the tenure clock for family leave for many years. This past year, ideas from the CFF for expansion of family friendly policies included a recommendation that the University add new rationales for the extension of the tenure clock. These were

endorsed by the Faculty Council and are being incorporated into the Academic Policies and Procedures Handbook. Other policy recommendations relevant to the success of women faculty include allowing for multiple pathways for promotion to full professor such as those involving contributions in leadership. This year, a woman faculty member in STEM was promoted in part in recognition of her leadership in graduate education and increasing the diversity of the STEM graduate programs. The work of the CFF was launched early in the project, recognizing that it would take time to deliberate over policies and build support for change. As recommendations have proceeded through the Faculty Council, revisions to policies are drafted and are being implemented. In addition to policy recommendations, the CFF recommended the establishment of an Ombudsman position. This has been approved; a candidate has been selected and is scheduled to undergo training this fall.

High priority items for the next two years that have been generated by our work to date include: improvement in clarity for the standards and criteria around promotion and tenure; improvement in annual evaluations of faculty at both the pre- and post-tenure levels; addressing ways to structure start-ups in STEM areas to better meet the needs of women faculty; refining mentoring and orientation programs; and enhancing our dual career program. Our data indicate that women faculty experience greater degrees of work/life stress. This is an area that we need to explore in more detail to determine whether the policy and other changes we have put in place are having an impact on this dimension of faculty life. Research on our faculty indicates that one of the institution's "effectiveness gaps" was on-campus child care. We have completed a detailed study of faculty needs in this area and it has been presented to the Chancellor's Cabinet. We have been asked to develop a space and financial plan for a child care center for presentation to the Board of Trustees.

We have attempted to bring women of color and issues that are important to them into all our programs. However, we only a few aspects of the project that have been specifically targeted toward women of color:

- In the spring of 2009, ADVANCE sponsored an AAC&U Campus Women Lead workshop that was designed specifically for women of color.

- We have helped to promote a program in cross-racial mentoring of faculty sponsored by the College of Education.
- Our colloquium series has included speakers who have addressed issues of race and ethnicity in academia.
- The University Diversity Plan, which drew heavily on ADVANCE program materials and recommendations, includes key strategies and specific measures of accountability for faculty diversity. The Plan was approved by the Chancellor and Board of Trustees this year.
- The Provost's Office and the College of Liberal Arts and Sciences have supported dual career hires of STEM women; have modified work assignments to accommodate the needs of several underrepresented minority women in STEM in order to promote their retention; and have created new positions to hire underrepresented minority women in STEM.

This is an area in which we still have work to do.

5. FACULTY DEVELOPMENT

There are four major components of the faculty development program: A) The Mentoring Program. B) The Women's Academy. C) Bonnie Cone Fellowships and Solution Team Awards. D) Leadership UNC Charlotte.

A) The Mentoring Program

Currently there are two programs in place, the New Faculty Mentoring Program and the Mid-Career Mentoring Program. The New Faculty Mentoring Program has completed its second year. Early data indicate that when paired with mentors with whom they make a positive connection, new faculty found the program useful. However, the program's impact on retention is difficult to determine after only two years of operation. It is clear that good pairings are extremely important and we continue to make changes to improve the matching process. Anecdotal data on the program derived from the Provost's new faculty luncheons suggests that women often find it helpful to be paired with other women with similar family circumstances, regardless of

discipline. While not part of the mentoring program, the new faculty orientation has been developed and refined continuously. With the mentoring program and the orientation program, first year faculty across the institution report feeling well supported. At the recommendation of our external reviewers, the Mid-Career Mentoring Program began during '08-'09. Monthly meetings have provided opportunities for associate professors across campus to meet to discuss the benefits of and barriers to promotion. Most recently a template for development plans has been circulated to help define goals and ways to meet those goals. In addition, a pilot program is underway in which women associate professors that have been in rank for more than six years are paired with professors for the purpose of reviewing the associate professor's curriculum vitae And development plans to help define steps necessary to achieve both short- and long-term goals.

The fledgling "Focus Energy Friday" coffees are important networking opportunities for faculty. While these coffees were not in the original proposal, we heard of other institutions using such meetings successfully and planned to have them weekly, rotating among different groups. However, the only consistent meetings have been those for the Mid-career Mentoring Program. With added staff, we plan to resume rotating weekly meetings. These will provide regular opportunities to meet and discuss career issues with colleagues in an informal setting.

B) The Women's Academy

The Women's Academy was proposed as a structure to facilitate networking, mentoring, and collaboration and to enhance the visibility of women's contributions to science. The initiative has evolved in two directions. The ADVANCE Faculty Affairs Office has largely subsumed the networking and mentoring functions of the Women's Academy as faculty support programs continue to expand. The speakers program envisioned as part of the Women's Academy has evolved into a co-sponsorship program in which ADVANCE has partnered with centers and departments to bring to campus distinguished scholars to discuss gender issues in academia and to present the research of women in a variety of fields. During the 08-09 academic year, this program has sponsored visits from Deidre Mulligan, and Helen Nissenbaum, among others.

Workshops on gender issues led by several of these speakers have been targeted to department chairs and deans. We have also co-sponsored relevant speakers in departmental colloquium series to increase the numbers of women scientists and engineers included in these programs. This has been an attractive program that has allowed our women faculty opportunities to network with leaders in their fields.

C). Bonnie Cone Fellowship and Solutions Team Awards

The Competitive Awards Program (CAP) includes both individual Bonnie Cone fellowships and unit-based Solutions Team Awards. The Bonnie Cone Fellowship is awarded to individual applicants in one of two categories: young or mid-career. This was the first year that we extended awards specifically for mid-career women as recommended by the external reviewers. This year we received 10 submissions, of which 3 were successful at the young investigator level and 4, at the mid-career level. Awards requested included summer salary, conference attendance, career coaching, graduate student support, and technical assistance. These fellowships have two purposes. First, we want to provide flexible support to women to help them overcome the work/life stresses that we detect in our surveys of faculty. Second, by letting women self-select the kinds of support they need, we will be gathering data on the kinds of interventions they consider most important and that lead to positive outcomes in promotion and tenure.

An evaluation of the Cone program based on individual interviews with 16 of the 18 women awarded fellowships in 06-07 and 07-08 indicated that the program has been effective on a number of levels. The women were able to formulate career development programs that advanced their research careers. In addition, the program has provided insight into the kind of support mechanisms that are most helpful, particularly to beginning women faculty. The funds allowed women to make contact with new mentors and collaborators and to attract students to their labs. The flexibility in when and how the funds could be spent allowed the women to fill gaps in start up packages that may not have been anticipated at the time that they negotiated for their positions. The awards have also helped boost the confidence of the awardees, providing them with a more positive view of the institution.

The Solutions team's awards were proposed to stimulate thinking about the obstacles to the advancement of women at the unit level and to seek creative solutions. While, the number of competitive proposals has not been as robust as we would like, we have funded several. This year, one proposal was funded. Previously, the Department of Psychology received a Solutions Team Grant that resulted in a report on the climate for women and the outcomes of recruitment and retention initiatives for women and women faculty of color. The new award to the department funds work to define solutions for issues raised in the report. At the completion of this award, the department will be in a position to share both the assessment and the solutions with the campus.

D. Leadership UNC Charlotte

In the past six years, 75% of the university's department chairs have turned over. Recognizing the need for support and training for those in this key position, ADVANCE and the Provost's Office in collaboration with the deans has initiated a new chairs orientation to address departmental leadership issues. It is also clear that it is important to expand the number of faculty with skills in inclusive leadership. This is the goal of the Leadership UNC Charlotte Program. Focused on issues at the department level and organized around case studies, leaders (chairs and program coordinators) and emerging leaders from across the institution meet for networking, discussion, and skill development.

This year, the facilitators for Leadership UNC Charlotte were largely internal leaders. However, COACH also facilitated a workshop on "The Power of Strategic Persuasion," which was very well received. We continue to refine the program and tailor it to the needs of the cohort. We have successfully introduced training in the on how to run effective and inclusive meetings. Based on the response to this topic, we will consider developing a meetings workshop similar to our recruitment workshop for committees such as reappointment, promotion, and tenure committees

Of the 24 faculty in the first Leadership cohort, 6 have taken on new administrative duties in positions of chair (3), dean or director of a school (2) and University Ombudsman (1). While careful evaluation is needed, we can at least say that

these individuals had the opportunity for more systematic preparation than is often the case in academia.

6. OUTREACH ACTIVITIES

Outreach activities have been numerous and varied. ADVANCE has supported workshops on publishing, negotiations, and difficult conversations. These have been open to all faculty and attended by both men and women.

We have hosted speakers that include Sue Rosser on gender issues in promotion and tenure as well as patenting of intellectual property; Helen Nissenbaum, on equality, diversity, and creativity; and Deirdre Mulligan on privacy and information technology. These speakers have been available for multiple seminars and luncheons that were open to the broad institutional audience as well as targeted groups. i.e, women faculty in computer science. Other dissemination activities included the following:

- Dr. Lorden, Dr. Yvette Huet and Dr. Peta Katz attended the PI meeting in 2008 and presented a poster.
- The ADVANCE Steering Committee hosted a videoconference on the work of the ADVANCE program for the Faculty Assembly of the 16-campus UNC System.
- Dr. Yvette Huet was interviewed along with other local individuals for our local NPR affiliate, WFAE. The issues discussed pertained to science education.
- The work of Dr. Inna Sokolova (Biology), a Bonnie Cone Fellow, was the subject of a feature article in the Summer issue of UNC Charlotte magazine.
- Dr. Peta Katz presented a paper on her qualitative analysis of the Bonnie Cone program at the “Understanding Interventions that Broaden Participation in Research Careers” sponsored by AAAS, May 2009.

7. PUBLICATIONS AND PRODUCTS

A. Journal Publications (funded by Bonnie Cone Fellowships):

- Hui Chen, Yang Xiao, Xiaoyan Hong, Fei Hu, and **Jiang Xie**, "A Survey of Anonymity in Wireless Communication Systems," to appear in *Security and Communication Networks Journal (Wiley)*, 2009.
- **Jiang Xie** and Xudong Wang, "A Survey of Mobility Management in Hybrid Wireless Mesh Networks," *IEEE Network*, vol. 22, no. 6, pp. 34-40, November/December 2008.

(Ranked 18th of Top 100 Documents Accessed in IEEE Xplore)

https://unccmail.uncc.edu/exchweb/bin/redir.asp?URL=https://unccmail.uncc.edu/exchange/Linda.Xie/Drafts/RE:%2520Articles%2520to%2520date.EML/Top100Articles_Jan2009.pdf > ,

(6th of Ten Most Popular Articles

<https://unccmail.uncc.edu/exchweb/bin/redir.asp?URL=http://www.comsoc.org/livepubs/topten/index.html> >

(Published in IEEE Communications Society periodicals, in January 2009)

- Xiaoyuan Gu, John Strassner, **Jiang Xie**, Lars Wolf, and Tatsuya Suda, "Autonomic Multimedia Communications: Where Are We Now?" *Proceedings of the IEEE*, vol. 96, no. 1, pp. 143-154, January 2008.
- Ruidong Li, Jie Li, Kui Wu, Yang Xiao, and **Jiang Xie**, "An Enhanced Fast Handover with Low Latency for Mobile IPv6," *IEEE Transactions on Wireless Communications*, vol. 7, no. 1, pp. 334-342, January 2008.
- Shantidev Mohanty and **Jiang Xie**, "Performance Analysis of a Novel Architecture to Integrate Heterogeneous Wireless Systems," *Computer Networks Journal (Elsevier)*, vol. 51, no. 4, pp. 1095-1105, March 2007.
- **Gibas, C.** (under review) Genosets: Set-Based Visualization of Genomic Data.
- **Gaultney, J. F. & Collins-McNeil, J. (in press).** Lack of sleep in the workplace: What the psychologist-manager should know about sleep. *The Psychologist-Manager Journal*.

- *Catrett, C. D. & Gaultney, J. F.* (in press). Morning tiredness predicts some risky behaviors among adolescents when controlling for grade, gender, and depressive symptoms. *Journal of Genetic Psychology*.
- **Gaultney, J. F., Merchant, K. & Gingras, J. L.** (in press). **Children with PLMD display more behavioral problems than children with SDB: The importance of using clinical diagnosis to define study groups.** *Behavioral Sleep Medicine*.
- **Gaultney, J. G.** (May 2008). Sleep apnea and learning in children. *Wake Up America Newsletter*, 1(1), linked from front page.

**B. Peer-Reviewed Conference Publications:
(supported by Bonnie Cone Fellowships)**

- Shanjun Cheng, Anita Raja, **Jiang Xie**, and Ivan Howitt, "A Distributed Constraint Optimization Algorithm for Dynamic Load Balancing in WLANs," *Proc. Eleventh International Workshop on Distributed Constraint Reasoning (DCR), in conjunction with International Joint Conference on Artificial Intelligence (IJCAI 2009)*, July 2009.
- Aditya Pathak, Akshay M. Srivatsa, and **Jiang Xie**, "An Analytical Model for Handoff Overhead Analysis in Internet-based Infrastructure Mesh Networks," *Proc. IEEE International Conference on Communications (ICC 2008)*, pp. 2884-2888, May 2008.
- Akshay M. Srivatsa and **Jiang Xie**, "A Performance Study of Mobile Handoff Delay in IEEE 802.11-Based Wireless Mesh Networks," *Proc. IEEE International Conference on Communications (ICC 2008)*, pp. 2485-2489, May 2008.
- Uday Narayanan and **Jiang Xie**, "Signaling Cost Analysis of Handoffs in a Mixed IPv4/IPv6 Mobile Environment," *Proc. IEEE Global Communications Conference (GLOBECOM 2007)*, pp. 1792-1796, 2007.

- **Jiang Xie**, Ivan Howitt, and Izzeldin Shibeika, "IEEE 802.11-based Mobile IP Fast Handoff Latency Analysis," *Proc. IEEE International Conference on Communications (ICC 2007)*, pp. 6055-6060, 2007.
- **Jiang Xie**, Ivan Howitt, and Anita Raja, "Cognitive Radio Resource Management Using Multi-Agent Systems," *Proc. 1st IEEE Workshop on Cognitive Radio Networks (CRN 2007), in conjunction with IEEE Consumer Communications and Networking Conference (CCNC 2007)*, pp. 1123-1127, 2007.
- **Jiang Xie** and Aarthi Balan, "Case Study of Mobility Support for IPv4//IPv6 Transition Mechanisms Over IPv6 Backbone Networks," *Proc. IEEE Consumer Communications and Networking Conference (CCNC 2007)*, pp. 363-367, 2007.
- **Jiang Xie** and Xiaoyuan Gu, "Cellular Networks," Book Chapter of *The Handbook of Technology Management*, Hossein Bidgoli, Eds. John Wiley & Sons, Ltd., 2009.
- **Jiang Xie**, Ivan Howitt, and Anita Raja, "Framework for Decentralized Wireless LAN Resource Management," Book Chapter of *Emerging Wireless LANs, Wireless PANs, and Wireless MANs: IEEE 802.11, IEEE 802.15, 802.16 Wireless Standard Family* <<http://www.wiley.com/WileyCDA/WileyTitle/productCd-0471720690.html>> , Yang Xiao and Yi Pan, Eds. John Wiley & Sons, Ltd., April 2009.
- **Jiang Xie** and Xiaoyuan Gu, "Evolution of Mobile Cellular Networks," Book Chapter of *The Handbook of Computer Networks* <<https://unccmail.uncc.edu/exchweb/bin/redirect.asp?URL=http://www.wiley.com/WileyCDA/Section/id-305686.html>> , Volume II: LANs, MANs, WANs, The Internet, Global, Cellular and Wireless Networks <<https://unccmail.uncc.edu/exchweb/bin/redirect.asp?URL=http://www.wiley.com/WileyCDA/Section/id-305684.html>> , Hossein Bidgoli, Eds. John Wiley & Sons, Ltd., December 2007.
- **Jiang Xie** and Shantidev Mohanty, "Mobility Management in Wireless Systems," in 6.108. Telecommunication Systems and Technologies, edited by Paolo

Bellavista, in *Encyclopedia of Life Support Systems (EOLSS)*
<<https://uncccmail.uncc.edu/exchweb/bin/redirect.asp?URL=http://www.eolss.net/>> ,
developed under the Auspices of the UNESCO, Eolss Publishers, Oxford, UK,
2007.

8. EVALUATION ACTIVITIES

The Evaluation Team, consisting of Dr. Roslyn Mickelson, Dr Arnie Cann, and graduate student Neena Banerjee, have been engaged in three major data collection and analysis activities during the reporting period. First, they have collected data and prepared tables 1-11 of the ADVANCE toolkit. Second, UNC Charlotte has participated in several national surveys of faculty, including the UCLA Higher Education Research Institute (HERI) survey and the COACHE survey. Since we have data from three successive administrations of the UCLA survey, the Evaluation Team has done a longitudinal analysis of questions relevant to climate and experience for the STEM faculty. Finally, the Evaluation Team performed an equity salary study on 2007 salary data.

A) The HERI Data Summary

UNC Charlotte has participated in the Higher Education Research Institute (HERI) survey of faculty every 3 years since 1998. This report examines data from the last three administrations of the survey (2001-2002, 2004-2005, and 2007-2008) and looks only at questions that have potential relevance to issues addressed by the Advance initiatives.

Six themes are considered:

1. Overall Climate
2. Career Choice and Views of the Profession
3. Lifestyle and Personal/Professional Goals Compatibility
4. Perceptions of the University Practices and Priorities
5. Satisfaction with Aspects of One's Job

6. Sources of Stress

For some of the issues concerning general climate, the data were considered from all faculty who responded regardless of their rank. In most other cases, because the questions applied to issues primarily relevant to tenure track faculty, only data from faculty in professorial ranks were considered.

Based on a comparison with the number of faculty identified in the Institutional Research faculty database, the response rate was around 40% for each administration of the HERI survey (2001, 41%; 2004, 40%; 2007, 43%). The distribution of faculty by rank in each sample appears to be comparable to the overall distribution within the entire faculty.

A summary of the findings for each theme is provided with representative data. The actual frequencies of responses to each question, broken down by year, gender, and area (STEM or NonSTEM) are provided in the Appendices. In each section, the specific questions asked are listed, and the pages in the Appendices on which the detailed responses are provided are indicated. Statistical analyses were conducted to identify areas in which there were clear and reliable differences between women's and men's responses. Otherwise, detailed statistical analyses were not conducted. Instead, the percentage of faculty responding positively or negatively to an item was noted as descriptive information and consistent patterns of responses across years were noted. A consistent pattern of differences across years, even when not statistically reliable in any given year, does provide evidence of a reliable finding.

Conclusions: There continue to be gender differences in many areas, especially those dealing with climate issues, perceptions of efforts to insure fairness and diversity, and outside demands on time. In all of these cases, women report having a more negative experience or perception than do men. Furthermore, in a number of instances (e.g. clarity of guidelines for promotion, relationships with colleagues, mentoring) gender differences were more pronounced in STEM departments than in NonSTEM departments. Although the HERI survey does provide data to track these issues, data are available only every 3 years, and the questions of interest are not always included.

It may be desirable to develop an in-house survey that focuses on the specific issues of interest that could be administered every year or every other year. The UCLA HERI data have been presented to the Council on University Community and will be presented to the Chancellor's Cabinet at an upcoming retreat. In the fall, the data will be presented at a meeting of the Faculty Council and Dean's Council.

B) NSF Toolkit Data Summary

Summary of Baseline Data for ADVANCE Evaluation

The attached Tables contain the data that are recommended for evaluations according to the "Toolkit for Reporting Progress Toward NSF ADVANCE Institutional Transformation Goals" (January, 2005). Tables 1 through 8 are numbered to be consistent with the Toolkit examples, and the additional Tables, not specified in the Toolkit, are numbered consecutively beginning with Table 9. The data represent a baseline period of at least 3 years, and in some cases up to 5 years.

The data summarized in Tables 1, 6, & 7 have previously been evaluated in a separate report (Changing Patterns in STEM Faculty by Gender and Rank - Fall 2004 through Fall 2008) prepared in March 2009, so a detailed analysis will not be repeated here. In the summary of the earlier report it was noted that the percentage of women in STEM areas at the assistant professor rank has remained relatively constant since 2004. The increases in the number and percentage of STEM women at the associate and full professor ranks are due to higher rates of hiring women at the associate rank, and higher rates of separation by men at both associate and full ranks. For details, and a comparison of STEM Science to STEM Social Science departments, see the earlier report.

In Table 2, looking at the current numbers of STEM women at each rank, it is clear that there are still very few women at senior ranks (associate or full) in Engineering. Only in the social sciences are there significant numbers of women at the full professor level, and even in these disciplines there is considerable variability across departments. In Sociology (50%), Anthropology (33%), Criminal Justice (25%), and Political Science (22%) over 20% of full professors are women. However, in

Economics, Psychology, and Geography women make up only about 10% or less of full professors. Given the small numbers in some departments, it is worth noting that only Sociology and Political Science have more than one female full professor.

Tables 3 and 4 provide the data on Reappointment, Promotion, and Tenure decisions since the 2002 academic year. There does not appear to be any clear evidence of a gender bias in these data, but women have been denied tenure at a slightly higher rate. Overall, there have been very few negative tenure decisions (8 of 75). For women, 14% (3 of 21) of cases have been denied, and the rate is the same for STEM Sciences and STEM Social Sciences. For men, the overall rate for denial of tenure was 9%, with 13% for STEM Sciences and 0% for STEM Social Sciences. There have been only 2 instances of a negative decision in an evaluation for promotion to full professor, one woman and one man.

The data in Table 5, for time at UNC Charlotte and time in rank, do not suggest any major gender differences. Because women have only recently been promoted to full professor, the time at rank in that category does reflect differences only due to the recent changes. The more important data would be those for associate professors, and here there is no evidence that women, overall, have more years in that rank. Only in the social sciences and psychology have women associates been at that level longer, on average, than men, and the difference is less than two years. It will be important to monitor these data to see if this pattern continues as more and more women are hired and promoted to associate.

In Table 8, the data for Distinguished and Titled Professors indicate no real change in the pattern over the last 5 years. There has been a single female Distinguished or Titled Professor over that time, while the number of men in such positions has ranged from 10-12. These data are consistent with the overall percentage of women at the rank of full professor, around 10%. However, in 08-09, four additional women were appointed to endowed positions. Flexibility in the appointment process allowed us to add two women at the associate professor level as Distinguished Scholars. Upon promotion, they will become Distinguished Professors. The remaining two were appointed at the rank of full professor.

The data in Table 9 on salary will not be interpreted because an extensive Salary Regression analysis was completed during the last year. The results of those analyses, provided in a separate report, indicated small, but consistent gender differences. Details about the variable examined, and the interpretation of the differences identified can be found in that separate report.

In Tables 10 and 11 we have updated the information about Start-up Packages and Space Allocations for new faculty. When the original data were collected covering a 5 year period of hiring, no differences based on gender were identified. The updated data continue to reflect these findings. Although there are differences across disciplines, and some variability within disciplines, probably based on research needs in specialized areas, none of the differences appear to be related to gender.

C) Equity salary study

The following is a summary excerpted from the study:

“The University of North Carolina at Charlotte’s ADVANCE institutional transformation program sponsored by the National Science Foundation promotes the equitable participation of women faculty in science, technology, engineering, and mathematics (STEM). ADVANCE’s goals include the examination of, and possible transformation of, the opportunity structure at UNC Charlotte so that fundamental components of the university’s climate, culture, and organizational structure are equitable with respect to gender, ethnicity, and race. Salary equity is an important dimension supporting faculty participation, and nationwide, studies of salary equity have documented gender disparities in salary. Thus, it is important to know the conditions that exist at UNC Charlotte with respect to salary equity.

This report presents findings of the ADVANCE Evaluation team’s investigation of the factors related to salaries of faculty at University of North Carolina at Charlotte from 2004-5 through 2007-8. Like many other institutions of higher education, UNC Charlotte has struggled with gender-based salary inequities for decades. The purposes of this study are to investigate the various factors that currently predict salaries, to explore whether there is evidence of systemic gender bias in salaries, and to examine if there have been changes in these relationships over the four year period.

Our results indicate three types of factors influence salaries at UNC Charlotte. The first one is market forces. This factor includes rank, discipline, and prior experience. Actions by UNC Charlotte administrators are unlikely to affect these dynamics because they are consistent across the academy. The second factor is internal university operations as captured by salary compression and chair salaries. UNC Charlotte administrators could alter the internal reward structure to compensate for the salary compression that penalizes faculty the longer they serve at this institution. The University may determine that the salary penalty that chairs incur is the result of decreases in their scholarly productivity, and reprioritize contributions based on leadership. The third factor is possible bias as captured by the salary differences associated with gender and disadvantaged minority status. For both factors, the differences consistently appear across the four years examined and require attention to insure that they are addressed. Salary inequities rooted in gender and race erode campus climates and will undermine achieving the goals of the ADVANCE program.”

This salary study replicated an institutional study conducted on 2007 salary data. Evidence of salary compression prompted the Provost’s Office to provide funds to the colleges to address equity issues in 2008. At the request of the ADVANCE program, the Office of Institutional Research repeated the study this spring to determine whether equity issues had been addressed. The principle finding was that for women in tenure track positions, women’s salaries differ from the predicted values by a small (negative) amount. Large differences are seen, however, when lecturers are included, since these positions are held primarily by women. These data have been shared with the deans. Because no increases will be allowed this year, the Provost has discussed with the deans the importance of equity in initial salaries and the way in which small differences are magnified over time.

9. APPENDICES

NSF Toolkit Data

Equity Salary Study