

## **AC 2010-1498: NDSU ADVANCE FORWARD: INSTITUTIONAL TRANSFORMATION AT NORTH DAKOTA STATE UNIVERSITY**

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## **NDSU Advance FORWARD: Institutional Transformation at North Dakota State University**

In fall 2008, the National Science Foundation (NSF) awarded North Dakota State University (NDSU) a \$3.71M ADVANCE grant. The purpose of the institutional transformation grant, now awarded to 41 colleges and universities in the United States, is to recruit and retain more women faculty in Science, Technology, Engineering and Math (STEM) disciplines. This essay describes North Dakota State University's work and preparation for the grant, outlines key components in NDSU's program, and provides initial feedback about some of its initiatives.

### **Background – North Dakota State University's Pursuit of the NSF ADVANCE grant**

In 2002, a group of faculty and administrators, who were concerned about the status of women faculty at North Dakota State University, prepared a proposal for the NSF ADVANCE Institutional Transformation grant<sup>1</sup>. The group, called FORWARD (Focus on Resources for Women's Advancement, Recruitment/Retention, and Development), sought to develop an understanding of the climate for women faculty at North Dakota State University. In order to increase the participation of women at all faculty ranks, by changing institutional culture and practices, this ad hoc committee collected and analyzed institutional data and conducted several surveys to document the present climate and understand institutional barriers to women's success. The committee researched relevant literature and best practices developed and/or adopted by ADVANCE institutions. The committee met monthly to discuss goals and strategies for achieving institutional transformation through recruiting, retaining, and advancing women, particularly in the traditional science and engineering disciplines at North Dakota State University. The group applied for the grant but was unsuccessful in 2005; however, after additional research and honing of project plans, the group re-applied and received the grant in 2008. In the meantime, during the 2002-2008 time period, the FORWARD group also advocated for and succeeded in obtaining additional childcare facilities, lactation rooms, and changing tables on campus.

In this same time frame, North Dakota State University had been poised for change, making it an opportune time to receive an ADVANCE grant. During this time, the university went through dramatic institutional transformation<sup>2</sup>. Then-President Joseph Chapman's goal was to move the campus from a Carnegie-classified Research Intensive University to a Research Extensive University. In order to do so, he argued that the university needed to recruit, retain and advance women and underrepresented faculty and students. To assist with these goals, he created a campus-wide Diversity Council that surveyed the campus and initiated a strategic plan for diversity. His efforts resulted in new doctoral programs, record enrollment of both undergraduate and graduate students, creation of a campus research park, and significantly increased research expenditures. Chapman resigned in fall 2009, leaving issues of momentum up for question.

### **North Dakota State University's Challenges**

FORWARD identified five challenges that North Dakota State University faces in recruiting, retaining, and advancing science and engineering women faculty. These challenges were

identified through a number of climate surveys and analyses of institutional data, and literature in gender and organizational life.<sup>1</sup>

First, North Dakota State University has a chilly climate for women faculty, and there is a significant difference in the climate men and women experience. Williams' findings that systematic gender bias and stereotyping create an unwelcome climate for women, describes the climate for some at North Dakota State University.<sup>3</sup> Women faculty at North Dakota State University are significantly less satisfied than their male counterparts in areas of climate, nature of work, and balance of career and family. Areas associated with greater attrition of women faculty include stress based on subtle or overt discrimination, work-related stress, stress due to time pressure, lack of personal time, difficulties in departmental communication, conflict with a direct supervisor and conflict within the department, and other reasons, including climate-oriented explanations such as isolation and being ignored. Preliminary results from a 2009 work-life survey suggest that these climate challenges persist.

The second challenge the institution faces is that there are too few women in science and engineering applicant pools. Even though NDSU interviews a greater percentage of women faculty applicants than are in initial pools, and generally hires at a higher percentage, the institution still does not approach hiring the percentage of women available in the pipeline.

North Dakota State University's third challenge is that retention of women faculty is low in science and engineering disciplines and overall. Although the numbers of women have increased at the assistant level, North Dakota State University has not consistently retained these women. However, North Dakota State University is poised to promote a large number of women (science and engineering, and all fields) in the next five years if the institution can improve its retention rate. Additionally, there is dramatic imbalance of tenured men to women, which creates gendered departments within a gendered institution and leaves some women feeling isolated and vulnerable.<sup>4</sup>

A fourth challenge is the limited number of women advancing to full professor ranks in the science and engineering disciplines and overall. Despite years of increasing success in hiring women as assistant professors, the number of women full professors has not increased significantly. The over-representation of male faculty at the highest ranks reinforces the concept of a gendered institution and contributes to differences in the perception of climate for women faculty and for women faculty of color.

Finally, there are few women in academic leadership roles at North Dakota State University. The limited number of women in major administrative positions has huge implications because there are few female role models for women faculty interested in career advancement. This lack may contribute to a climate in which talented women faculty leave because they do not see potential for career growth at North Dakota State University.

### **North Dakota State University Advance FORWARD Initiatives**

*Administrative structure.* The FORWARD group is the main decision making body of the grant. NDSU Advance FORWARD has an internal advisory board comprised of administrators and

faculty at North Dakota State University who primarily provide advice on an individual basis. An external advisory board is comprised of academic administrators and personnel from other ADVANCE institutions. The Provost's Commission on the Status of Women Faculty (CSWF) has been created to examine university policies that do not promote gender equity.

*Climate initiatives.* There are four main climate-focused programs in the grant: hiring a faculty recruiter, developing a male faculty Allies/Advocates program, creating gender equity training opportunities for academic administrators and faculty, and awarding climate-specific grants. Each of these programs is outlined below.

The faculty recruiter position, originally maintained in the Equity and Diversity Office and now located in the Provost's office, was designed to assist STEM faculty search committees with recruitment. Establishing the roles and necessary training for this person has taken longer than expected, but ultimately, the recruiter will be responsible for advertising open STEM positions at North Dakota State University in a variety of publications to attract women and other underrepresented groups, training search committee chairs and committee members in effective search practices, developing a handbook for faculty searches, and assisting search committees in recruiting specific job candidates. This position is designed to be institutionalized, with the university paying the recruiter's full salary and benefits after the second year of the grant.

The Allies/Advocates program was designed because there are so few female faculty at North Dakota State University that the FORWARD team determined that having male allies would be helpful. To date, 8 male Advocates, representing most of the colleges on campus, have spent a year undergoing extensive training and preparing their own training for future Allies. The Advocates have read materials about unconscious bias and gender bias; they brought consultant Dr. Mark Chesler from the University of Michigan STRIDE team to campus for their own training as well as for campus gender training; and they are prepared to bring additional supportive male faculty into the group. In fact, in spring 2010, the Advocates added 5 more male faculty to their group. The goal of these individuals is to advocate for the FORWARD program, for women faculty on campus, and for issues of gender equity. In some situations, others might be more open to critique if they hear it from respected male faculty; in those cases, the Advocates and Allies may point out instances of gender bias in an effort to educate. Although development of this program is early, the group of Advocates is enthusiastic; their presence on campus holds much promise.

The third element of the climate program is gender equity training. Before receiving the grant, North Dakota State University had several similar training programs – one related to racism and the other related to sexuality. In a similar vein, the gender equity seminars are designed to educate academic administrators and faculty about gender-related issues. Ultimately, all new faculty will be required to go through gender equity training. Thus far, the training has been presented by a variety of experts, including Dr. Virginia Valian, Dr. Toni Schmader, Dr. Mark Chesler, and Dr. Dana Britton, with the eventual goal of FORWARD personnel doing all of the training. Preliminary assessment results of these workshops are positive, with both men and women indicating they have learned about gender and bias and will use the material in the workplace.

Finally, to encourage faculty to work on climate changing efforts, the FORWARD program offers two types of climate grants. First, the gender/climate grant provides incentive money for interdisciplinary scholars to create projects about issues of gender equity. Participants are awarded up to \$10,000 to launch their research project. Thus far, three projects have been funded through the grant. The second type of climate award is the departmental climate award. These monies are to be awarded to departments to bring in a consultant to assist with climate-related issues. To date, no departments have taken advantage of this award, perhaps due to the stigma attached to asking for such funds. A measure has been developed to assess the impact of the FORWARD climate grants but has not been administered yet.

*Advancement/Leadership initiatives.* There are three programs associated with the Advancement/Leadership goals: midcareer mentoring, cohort mentoring, and professional development grants. Each will be detailed below.

The goal of the midcareer mentoring program is to assist and support associate professors in their efforts to attain full professorship. Although the program is not operational at this time due to focus on other programs, the goal is for interdisciplinary groups to seek funding from FORWARD for research projects or programming. At least twice a year, these midcareer groups will meet with administrators so they become acquainted, and so administrators might learn about what their midcareer faculty are doing (reverse mentoring).

Due to the grant's timing (received in September 2008), FORWARD started its cohort mentoring program for new faculty in fall 2009. This program consists of all new faculty (male/female, STEM/non-STEM) who wish to participate. They are placed in groups with 1-2 other new faculty and 1-2 tenured faculty. There are several formal mentoring workshops throughout the year, and the groups are encouraged to meet on a casual basis according to their schedules. This 3-year program, using cohort groups, is a different approach to mentoring, one which, it is hoped, will work more successfully than one-year mentoring pairs. If female faculty, in particular, have a support network for at least 3 years, perhaps they will be less likely to leave. Assessment measures for cohort mentoring are under development.

FORWARD's professional development grant programs are designed to provide advancement opportunities for STEM women faculty. First, Leap grants are sizeable sums of money (\$30,000) to be used to conduct preliminary research in preparation for a more substantial grant (NSF or NIH, for example). So far, FORWARD has awarded 9 women STEM scholars. Course release grants are used to buy out a course so the faculty member has more time to conduct research; FORWARD has awarded 7 of these grants. Leadership development grants are awarded to female faculty who wish to develop leadership skills; FORWARD has awarded 3 of these grants. Finally, travel grants are meant to bring a faculty member to a conference or university to meet with a mentor, or to bring a mentor to the university. The President was willing last year to provide travel monies to non-STEM female faculty as well; therefore, FORWARD was able to award 36 travel grants last year. As with the climate grants, the FORWARD team will assess the impact of these advancement grants yet this year.

*Research initiatives.* The research program includes a focus on the theoretical model that drives the grant. The premise of this grant is that women faculty tend to occupy positions in the

university that are unrecognized or unstructured. The intention is that some of the programs, such as the CSWF, will become situated within the university structure, thereby making some spaces that women faculty occupy recognized. NDSU Advance FORWARD intends to investigate “how unstructured spaces become authorized and recognized within an institution, and what mechanisms offer marginalized groups greater recognition within institutional settings. By exploring the ways in which women and faculty of color have employed unstructured spaces to gain authorization and recognition within the institution, it will be possible to better understand the opportunities for and constraints upon change that this model has allowed at North Dakota State University”.<sup>1</sup>

The research portion of the grant also includes an investigation into the programs initiated thus far: Research will focus on the following:<sup>1</sup>

- Advocates/Allies program. How does using an Advocates/Allies program involve the campus more widely in the processes of institutional transformation? What role do supportive members of the majority group play in changing a gendered institution, and how does training increase the effectiveness of such Advocates/Allies?
- Administrator training. How does ongoing training for department chairs/heads combine with the reverse mentoring that occurs when these administrators regularly interact in structured settings with women faculty? What is the role of reverse mentoring in achieving institutional transformation? In spring 2010, the team will conduct a baseline survey of academic administrators as an initial guide.
- Role of “critical mass” in climate. Is there a relationship between more women academic administrators and the effectiveness of recruitment and retention of women faculty? How/why do women academic administrators help recruit and retain women, if in fact they do? Do units need a “critical mass” of women/women of color before widespread effective recruitment and retention are possible, and if so, is this process speeded by the presence of women examining the organizational and individual factors associated with North Dakota State University, research will identify those that might have gender-based advantages and lead to gender-linked dissatisfaction.
- Mentoring. Since North Dakota State University women faculty report significantly more dissatisfaction than men in present mentoring programs, do the same gender mentoring cohorts solve these problems? And, if women begin to report more satisfaction with mentoring, does that lead to better recruitment, retention, and promotion of women faculty? If so, what mechanisms in the program lead to success?
- Leadership. Are leadership programs effective in encouraging women faculty to undertake academic leadership roles? If so, how/why?

## **Conclusions**

Nearly 1½ years into the grant, there has been some progress at NDSU. Participants in the various programs report they have learned information that will help in their work on search committees and with issues of climate. The Advocates are an active group whose members, on an individual level, have an opportunity to influence a vast array of university and departmental

committees. The Commission on the Status of Women Faculty has edited a policy to ensure that positions are advertised and searches held for all administrative positions on campus, and they are currently examining the Promotion, Tenure and Evaluation policy. They will be awarding their first departmental equity award in spring 2010.

NSF 12-indicator data suggest that NDSU is making small strides in advancing assistant and associate professor women in STEM; 2010 may be an exceptional year, but the final decisions have not yet been made. The percentage of new hires for tenured and tenure-track positions filled by women in the STEM departments increased from 28.1% in fall 2007 to 40% in fall 2008. The percentage of new hires for tenured and tenure-track positions filled by women in the non-STEM departments increased from 55% in fall 2007 to 69.2% in fall 2008.<sup>5</sup> While it will take many years for this change to impact overall numbers, the most positive change has occurred in hiring.

The North Dakota State University Advance FORWARD grant has an ambitious combination of programs designed to address issues of climate, recruitment, retention, and advancement of women faculty in STEM. This poster and brief essay outlines the work undertaken before receiving the NSF ADVANCE grant, the programming intended toward institutional transformation, and the progress thus far. Although it is a tremendous undertaking, NDSU Advance FORWARD is enthusiastically pursuing this opportunity.

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