



Getting to the Heart of it All

Connecting Gender Research, WIE Programs, Faculty & Corporate Partners

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From Advancing Women in Science and Engineering to Advancing Diversity at Virginia Tech: *AdvanceVT*'s Annual Workshop

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Introduction

The National Science Foundation (NSF)'s ADVANCE program focuses on institutional transformation to increase the representation and advancement of women in academic science, technology, engineering and mathematics (STEM) careers. Programs designed to increase awareness of unconscious bias in evaluation, warm department climate, and improve transparency of policies and procedures implemented as part of ADVANCE initiatives benefit all faculty by leveling the playing field and lowering the invisible hurdles faced by members of underrepresented groups. This paper describes how a key component of one university's ADVANCE program has been sustained by broadening its focus and aligning with institutional priorities.

Virginia Tech's NSF ADVANCE Institutional Transformation proposal included an annual retreat for science and engineering department heads and academic leaders to build awareness of gender equity issues. That original vision has morphed into an annual workshop for faculty, staff, and administrators addressing issues of diversity across campus. The first "Advancing Women at Virginia Tech" workshop focused on women in academic science and engineering careers and served as an opportunity to educate the university community about the ADVANCE initiative and to begin identifying opportunities for change. After four years, in response to the university community's desire to broaden the focus to address the advancement of all underrepresented groups in academe, the title of the annual workshop changed to the more inclusive "Advancing Diversity at Virginia Tech." Topics discussed include bias literacy, faculty recruitment, inclusive excellence, mentoring, and department climate issues. The program has been supported by the Senior Vice President and Provost and the Vice President for Diversity and Inclusion since the grant funding expired. Workshop participants continue to rate the programs very highly and indicate that they look forward to this annual event.

Background

Women have made significant progress in science and engineering over the past 30 years, but remain underrepresented in both degree attainment and academic careers in many STEM disciplines ("Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering," 2006; Burrelli, 2008; Long, 2001). In 2009, women earned 47.8% of science and engineering doctoral degrees awarded to U.S. citizens and permanent residents, up from 43.8% in 2001 (*Women, Minorities, and Persons with Disabilities in Science and Engineering*, 2011). Women's share of faculty positions has also increased but at a slower rate than degree

production, and representation of women in both degrees earned and academic employment varies widely by field of study. In engineering, women earned 22.9% of PhDs in 2010 and constituted 13.2% of tenured or tenure-track faculty and 8.1% of full professors in the same year (Gibbons, 2010).

In 2001, the National Science Foundation (NSF) introduced the ADVANCE program to address underrepresentation of women in science and engineering. Unlike previous programs that had primarily focused on individual women, ADVANCE addresses the institutional structures and practices that have differential impacts on women pursuing academic careers (Rosser, 2004). According to the program solicitation, “The goal of the ADVANCE program is to develop systemic approaches to increase the representation and advancement of women in academic science, technology, engineering and mathematics (STEM) careers, thereby contributing to the development of a more diverse science and engineering workforce.” (*ADVANCE Program Solicitation (NSF 02-121)*, 2002)

Fifty-three universities received five-year, multi-million dollar ADVANCE Institutional Transformation grants in five rounds of awards through 2010. These institutions have taken a variety of approaches to transformation, from a focus on hiring more women to preparing women for leadership roles, educating department heads, and revising university policies (Bilimoria & Liang, 2012; Stewart, Malley, & LaVaque-Manty, 2007). As grant funding for the awards expires, institutions evaluate the impact of programs and prioritize activities for continuation (Bilimoria, Joy, & Liang, 2008; Bilimoria & Liang, 2012; Frehill, 2007; Zajicek, Rencis, Morimoto, & Hunt, 2010).

Theoretical Framework

Transformational change in complex organizations such as universities must be both wide and deep, extending across the institution and impacting values, beliefs, and practices. Such change cannot be limited to a few departments or even colleges, and must effect how people think as well as how they act. Change must include both structural and cultural elements. Examples of structural changes include changes in policies, changes in budgets, and changes in organizational structure. Cultural changes are indicated by changes in the way individuals and groups interact, changes in the language used and the types of conversations undertaken (Eckel & Kezar, 2003).

Bilimoria and Liang (2012) developed an integrative framework of institutional transformation based on review of the activities of the first two rounds of ADVANCE IT grant recipients. Their framework consists of five categories:

- internal and external facilitating factors including support from senior leadership, widespread participation, and endorsement from an external authority;
- research and evaluation to identify needs and track progress;
- specific initiatives such as improving institutional structures, equipping women for success, and improving climate;
- institutionalization as indicated by new positions, policies, practices, and resources; and
- outcomes of increased participation and success of target groups and a more equitable workplace for everyone.

The workshops described in this paper originated as part of a comprehensive approach to institutional transformation described in [Virginia Tech's ADVANCE proposal](#). While focused initially on science and engineering, the interventions were designed to ultimately reach across the entire institution, impacting structures, policies, and practices. The activities implemented by *AdvanceVT* included review, revision, and expansion of the institution's policies designed to help faculty balance the demands of career and personal life as well as educating faculty and administrators on unconscious bias in evaluation, increasing transparency in the promotion and tenure process, and providing skill building opportunities for women at various stages of faculty careers. As an integral part of this portfolio, the annual workshops provided a venue to introduce and reinforce many of these programs. Support for the workshops has been sustained following the completion of the grant, thus they also serve as an indicator of Virginia Tech's continued commitment to ADVANCE goals.

Workshop Overview

Since its first year, *AdvanceVT* has hosted an annual workshop geared toward advancing gender equity and diversity more broadly at Virginia Tech. Throughout the evolution of this initiative, feedback from participants has been overwhelmingly positive and the annual workshop has become a signature event for *AdvanceVT*. The speakers and breakout sessions inform participants about research and programs related to broadening participation in academic careers, provide examples of successful approaches to institutional change, and both energize and challenge attendees to examine their own biases and consider new ways to engage in diversity work.

"I'm committed to diversity at Virginia Tech and attending such meetings helps to stay focused on our goals and not take our past and even present successes for granted. We can do better." – 2010 workshop participant

The first annual workshop in January 2004 focused on issues related to women in academic science and engineering careers. This event was organized soon after Virginia Tech received an NSF ADVANCE Institutional Transformation grant, and served as an opportunity to educate the university community about the ADVANCE initiative and to begin discussing opportunities for change at Virginia Tech. After the first few years of the *AdvanceVT* initiative, the focus of the annual workshops was expanded to address other underrepresented groups in academe in addition to women.

Since year five, *AdvanceVT* has co-hosted the annual workshops with Virginia Tech's Office for Diversity and Inclusion. In response to the university community's desire to broaden the focus of the annual workshops to address the advancement of all underrepresented groups in academe, the title of the annual workshop was changed to the more inclusive "Advancing Diversity at Virginia Tech". Topics discussed include faculty recruitment, inclusive excellence, mentoring, and department climate issues. The workshops also include status reports from the provost, who was the principal investigator on Virginia Tech's ADVANCE grant, and the vice president for diversity and inclusion. Participation of these senior administrators, as well as deans and department heads, demonstrates the continued commitment of institutional leaders to the goals of the program. Workshop participants have consistently rated the external speakers invited to present at the annual workshops very highly and commented that they appreciate the opportunity

to learn from the successes of other universities and organizations.

“Thank you for continuing to highlight these important topics and make them more accessible on campus. Even more is necessary... but you're doing a great job and making inroads.” – 2009 workshop participant

Participants

Early *AdvanceVT* annual workshops primarily targeted instructional faculty. Programming and participation have gradually broadened to include all members of the university community, including administrators, research faculty, and staff, with no charge to participants. In all years except one, the program has been held between semesters to minimize conflicts with other events. By the sixth year, registration for the annual workshop had grown to almost 300 participants. Approximately 935 members of the Virginia Tech community have attended at least one annual workshop, with 65 individuals attending 4 or more workshops.

While the number of administrative and professional faculty attendees has increased over the past few years, the majority of attendees who have attended four or more annual workshops are instructional faculty, department heads, and senior administrators such as deans, provosts, and vice presidents. An ongoing challenge for the organizers is to provide content that is informative and motivating for repeat participants while also reaching out to and engaging new participants.

Annual Workshop Summaries

Year 1: *AdvanceVT* had greater than expected participation in its inaugural “*AdvanceVT* Workshop”, with over 160 faculty, administrators, graduate students, and guests. NSF administrators described the goals of the ADVANCE program and previous ADVANCE grant recipients discussed their experiences to date. Concurrent sessions provided an opportunity for participants to identify and prioritize issues for *AdvanceVT* to address, and the principle investigators used this input to guide subsequent programming. Feedback on the workshop was very positive, with ninety-seven percent of participants who returned their evaluation forms indicating that the workshop increased their knowledge of issues affecting women in science and engineering somewhat or very much.

Year 2: *AdvanceVT* hosted its 2nd annual campus-wide “Advancing Women at Virginia Tech” workshop with keynote speakers Virginia Valian, distinguished professor of psychology and linguistics at Hunter College, and Denice Denton, dean of engineering at the University of Washington and chancellor designate at the University of California at Santa Cruz. More than 120 faculty members, administrators, and graduate students participated in the workshop. Valian’s presentation was particularly important for audience members who had little knowledge of the literature on unintended bias. In addition to this keynote, Valian met with women faculty members to discuss creating personal advisory committees, and with department heads to discuss their role in encouraging institutional change. Denton’s presentations focused on how to make the faculty search process yield more diverse outcomes and the necessity of changing the climate.

Year 3: The 3rd annual “Advancing Women at Virginia Tech” workshop was held in conjunction with the Mid-Atlantic Conference on the Scholarship of Diversity (MASCD). The aim of the MASCD conference, organized by Virginia Tech’s Office of Multicultural Affairs, was to showcase diversity as a critical and valued area of scholarship and research. Over 100 Virginia Tech faculty members attended. Unlike other years, this event was held during the semester, which appeared to have a negative impact on participation. The workshop included presentations on predictors of faculty job satisfaction from the Virginia Tech Faculty Work-Life Survey conducted in spring 2005 and an overview of keys to success in institutional transformation from other ADVANCE grant recipients. Small group discussions developed college level action plans to address faculty work/life issues identified by the faculty survey.

Year 4: Over 100 Virginia Tech faculty members, department heads, and senior administrators attended the 4th annual “Advancing Women at Virginia Tech” workshop. The program included presentations from members of the University of Michigan STRIDE committee and a panel of new women department heads. Concurrent sessions addressed examples of successful strategies to develop and maintain a positive department climate and keys to successful faculty searches.

Year 5: The 5th annual “Advancing Diversity at Virginia Tech” conference, co-hosted with the Office of Multicultural Affairs, attracted almost 200 registered participants, including administrative and professional faculty for the first time. Keynote speaker Damon Williams, Assistant Vice-Provost for Multi-cultural and International Affairs at the University of Connecticut, discussed an inclusive excellence model for institutional transformation, and Cathy Trower from the Collaborative on Academic Careers in Higher Education (COACHE) addressed the career concerns of pre-tenure faculty. An original interactive theater performance engaged participants in discussion about the faculty search process. Concurrent sessions focused on recruiting a diverse faculty and creating department climates that encourage faculty success. Follow-up sessions held the next day engaged pre-tenure faculty at Virginia Tech and graduate student recruitment coordinators.

Year 6: The 6th annual “Advancing Diversity at Virginia Tech” conference, co-hosted with the Office for Equity and Inclusion (formerly Multicultural Affairs), had almost 300 registered participants, including faculty, staff, and administrators. Featured speaker Alma Clayton-Pedersen, Vice-President for Education and Institutional Renewal at the Association of American Colleges and Universities, addressed building capacity for inclusive excellence. Daryl Chubin and Ruta Sevo of the American Association for the Advancement of Science Center for Advancing Science and Engineering Capacity provided a primer on bias literacy. Breakout sessions included Faculty Mentoring: Perspectives from Mentors and Mentees; Curriculum Transformation; Bias Literacy (continued); Building Capacity (continued); and Staff Perspectives on Diversity. The event concluded with a poster session highlighting the activities of campus diversity committees.

Year 7: The 7th annual “Advancing Diversity at Virginia Tech” workshop, co-hosted with the Office for Equity and Inclusion, again attracted approximately 300 attendees, including faculty, administrators, and staff. The event featured a keynote address on “Creating a Climate of Success for All Students and Faculty” by Freeman A. Hrabowski, III, President of the University of Maryland, Baltimore County (UMBC). Breakout sessions addressed faculty mentoring, the

UMBC Meyerhoff Scholars Program, work-life balance, dealing with differences in the workplace, and results from Virginia Tech's Employment Climate Survey.

Year 8: The 8th annual "Advancing Diversity at Virginia Tech" workshop coincided with a bout of severe winter weather that impacted multiple states, to the extent that the scheduled keynote speaker was not able to participate due to flight cancellations. Closer to home, schools were closed for the day, requiring some members of the community with children to cancel their plans to attend the workshop. Given these events, the workshop schedule was amended so that the opening session began later in the morning. The day began with university status reports by the senior vice president and provost and the vice president for diversity and inclusion. After lunch, participants were invited to attend one of six concurrent sessions on mentoring micro-grants for pre-tenure faculty; promotion from associate professor to professor; uncovering unconscious bias; leadership competencies; dealing with department climate issues; and navigating the instructor career path. The workshop ended with a poster session and coffee break. In spite of the difficulties, approximately 260 people attended.

Year 9: The 9th annual workshop began with brief remarks from the senior vice president and provost and the vice president for diversity and inclusion, followed by a keynote address on "Institutional Change in Higher Education" by Karan Watson, Provost and Executive Vice President for Academic Affairs at Texas A&M University. Following the keynote were interactive table discussions during which participants spoke with fellow members of the university community about diversity and institutional change at Virginia Tech. Participants were invited to discuss changes they would like to see in the next three years surrounding three issues: (1) the recruitment, retention, and success of students from diverse backgrounds; (2) departmental climate; and (3) the recruitment, retention, and success of faculty and staff from diverse backgrounds. Concurrent sessions addressed diversity in the classroom; addressing NSF's "broader impacts" criterion; findings from Virginia Tech's employee climate survey; and responding to bias in the workplace. The workshop ended with a poster session and coffee break. Approximately 300 members of the Virginia Tech community attended the workshop.

Workshop Evaluation

Measuring the impact of events such as the Advancing Diversity workshops is difficult. Do they provide more than just a "feel good" opportunity for individuals who are already committed to increasing equity and diversity? The organizers attempt to collect feedback from participants both to gauge impact and to assist in planning for future programs. Each year, workshop participants are invited to complete a brief evaluation survey, either on paper or online, rating each speaker and breakout session on a five point scale, from not at all valuable to extremely valuable, and answering a few open ended questions, such as:

- Did you learn anything at this workshop that surprised you? If so, what?
- What will you do differently as a result of your participation in this workshop?
- What was the highlight of the workshop for you?
- What could be improved in future workshops?
- What should be the highest priority for *AdvanceVT*?
- What future events would you like to see?

Overall ratings for the workshops have ranged from 3.6 to 4.3, with individual sessions rated from somewhat to extremely valuable. While it is not possible to track changes to individual behavior as a result of the workshops, some of the feedback from participants regarding what they intend to do differently illustrates that the workshop programs successfully challenge existing perceptions and stimulate at least some intent to change, as indicated by the following comments:

- *I will be more conscious of bias when serving on faculty and staff search committees, so that it does not negatively impact hiring decisions.*
- *I, personally, will be more sensitive to my tendency to treat staff and faculty differently. I wasn't aware that staff often felt second class.*
- *Try to play more of a mentor role to new employees.*
- *Write a formal mentorship plan for my unit.*
- *Start a breakfast mentoring group for women in my department.*
- *Start dialogue in the department about excellence in undergraduate education.*
- *Become more involved in the recruiting of underrepresented populations.*
- *I will look at my colleagues differently, and will try to put myself in their shoes.*
- *I've developed a much broader "definition" of diversity, as a cumulative result of the presentations from the day.*
- *Try to build diversity into overall organizational change in our department.*
- *I will commit to more education and discussion on diversity issues in the classroom and beyond.*
- *Speak up in a non-accusatory way – inquire about 'why' when things don't make sense.*
- *Be a more visible advocate for change.*
- *Was reminded of how important it is to interrupt the status quo.*

Outcomes and Significance

AdvanceVT's annual workshop began as an intervention to increase gender equity for women faculty, and can now be considered both an outcome and an indicator of success. The event initially served to educate the Virginia Tech community about challenges faced by women in academic science and engineering careers and the goals of NSF's ADVANCE program. Over the years, invited keynote speakers presented research on unconscious bias, gender schemas, and inclusive excellence and shared experience with diversifying faculty searches and leading institutional change. The event provides a venue to share findings of climate surveys and other quantitative and qualitative indicators of the status of women and other underrepresented groups at Virginia Tech, to communicate new and revised work/life policies, and to provide targeted programming for department heads, search committee members, pre-tenure faculty, associate professors, and other specific constituencies on campus. Some of the speakers and topics have been specifically focused on women, but many are also relevant to other underrepresented groups and some have specifically addressed the needs of students and faculty of color. These workshops and other *AdvanceVT* events serve to encourage and legitimize discussion of gender and other diversity issues on campus and facilitate culture change towards increased equity.

Institutional transformation remains a work in progress at Virginia Tech. The annual workshop is one of the *AdvanceVT* activities prioritized for ongoing university support following conclusion of the ADVANCE grant based on the program's broad impact, and has been institutionalized with both budget and staff. Participation of the senior vice president and provost as well as college deans and department heads indicates the continued commitment of campus leaders to equity and inclusion. Registration in excess of 300 people for several years running and repeat participation by many individuals indicates that the program meets a perceived need for diversity programming on campus. While a program of this scale may not be realistic for all institutions, aspects of the program could be implemented at lower cost for smaller groups using local speakers and on-campus facilities.

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