RECRUITING FEMALE FACULTY MEMBERS IN SCIENCE AND ENGINEERING: PRELIMINARY EVALUATION OF ONE INTERVENTION MODEL

Abigail J. Stewart,* Danielle LaVaque-Manty, and Janet E. Malley
University of Michigan

The representation of female faculty members in science and engineering fields lags behind that of their counterparts in the social sciences and humanities and also fails to keep pace with the production of female science and engineering doctorates. Research has shown that equity cannot be achieved by waiting for women to fill the applicant pool; instead, institutions must intervene by changing hiring practices and retention policies. This article describes and evaluates early results of one intervention at the University of Michigan: the creation of a faculty committee designed to improve the recruitment and hiring of female faculty members through peer education. One hiring cycle after the committee's creation, the authors found (a) reports of changed practices in some search committees and departments, (b) an increase in the number and proportion of new hires who were women, and (c) a substantial increase in the knowledge and motivation of the members of the recruitment committee with respect to improving the climate for female faculty members.

INTRODUCTION

Efforts to recruit, retain, and promote female scientists and engineers on the faculties of research universities have had slow and uneven results (Etzkowitz, Kemelgor, & Uzzi, 2000; Sonnert & Holton, 1996; Zuckerman, Cole, & Bruer, 1991). Increases in the proportion of women on the tenure track in science and engineering fields, both nationally and at the University of Michigan (UM), have not only failed to keep up with increases in the number of women earning Ph.D.'s in science and engineering fields but also lag far behind gains made by women in nonscience fields. The absence of female faculty members in science and engineering reflects inhospitable academic climates and evaluation practices that are unlikely to be transformed until women reach "critical mass," constituting perhaps 30% of the faculty members in these fields (Etzkowitz et al., 2000; Sonnert & Holton, 1996; Valian, 1999). Although not sufficient in itself, establishing critical mass is necessary to ensure equitable access, not only for the benefit of female scientists and engineers who seek academic careers but, given faculty members' key roles as models and mentors, also to expand the talent pool available to science. Thus, it is crucial that universities do their part to increase the numbers of female faculty members in science and engineering.

* Correspondence concerning this article should be addressed to Abigail J. Stewart, Institute for Research on Women and Gender, University of Michigan, 204 S. State St., Ann Arbor, MI 48109-1290; e-mail: abbystew@umich.edu.

We are particularly grateful to the founding members of STRIDE for their amazing dedication and service: Anthony England, Carol Fierke, Melvin Hochster, Sam Mukasa, Martha Pollack, Pamela Raymond, Michael Savageau, and John Vandermeer. We are also grateful to Deans Stephen Director, Allen Lichter, and Terrence McDonald for their support of STRIDE and for their nominations of it for campus recognition and to President Mary Sue Coleman and Provost Paul Courant for their support and recognition of STRIDE in their progress report and more generally on campus. We are grateful to NSF for creating the ADVANCE Institutional Transformation program, and to Alice Hogan for her leadership and support.
Between 1987 and 1997, faculty positions held by women in the social sciences increased from 22% to 38%, whereas in the natural sciences, the increase in the same period was notably smaller, moving from 18% to only 27% (National Science Foundation, 2000). Typically, the proportion of female faculty members in science and engineering departments is even lower at Research I universities, and the pattern at UM follows this national trend, with women holding 35% of the social science faculty slots but only 13% of the natural science positions in the College of Literature, Sciences and Arts in 2001 (Center for the Education of Women, 2003).

Although women have been receiving an increasing proportion of the doctorates in science and engineering fields, earning 44.7% of doctorates in the biological sciences and 17.5% in engineering fields in 2002, the number of women applying for open faculty positions is not proportional to the number completing those doctorates; women are “self-selecting” away from tenure-track faculty positions (Sears, 2003; Xie & Shauman, 2003). Furthermore, once on the tenure track, women advance more slowly and are more likely to exit academia than men (Etzkowitz et al., 2000; Long, 2001; Valian, 1999).

These factors suggest that waiting for more female candidates to apply for open positions is an ineffective strategy and that it is necessary to take a proactive approach to recruiting and retaining women to increase their presence on faculties. A study of multiple interventions conducted over a 5-year period in the Department of Medicine at Johns Hopkins University suggests that “the multifaceted nature of obstacles to women’s careers” (Fried, Francomano, MacDonald, & Wagner, 1996, p. 904), including “reduced access to mentoring... and to rewards, including promotion, salary, and recognition... isolation from colleagues and career-related professional information... fewer resources... and structural, institutional impediments to career for individuals without [unpaid household support]” requires a complex set of responses, sustained over a long period of time, implemented progressively, and actively supported by institutional leadership to succeed (Fried et al., 1996, p. 899).

As one of nine universities to receive 5-year grants in the first round of awards from the National Science Foundation’s (NSF) ADVANCE Project, a new NSF initiative focused on improving recruitment and retention of female science and engineering faculty members at research universities, UM has implemented interventions at several levels (institutional, departmental, and individually targeted).1 Initiatives include the university-wide Network of Women Scientists and Engineers, offering social events, workshops, and other networking opportunities to tenure-track female faculty members in science and engineering, Departmental Transformation Grants to enable individual departments to examine and improve their own climates and practices with respect to gender, Elizabeth C. Crosby Awards to meet career-relevant funding needs that would advance the careers of female science and engineering faculty members, and Women Talking Science and Engineering seminars to help groups of female faculty members strategize about ways to overcome gender discrimination within their departments. Other initiatives include facilitated discussion of a theater sketch depicting a problematic faculty meeting, opportunities for units to do self-studies of their own gender climates, and data-based presentations regarding the gendered landscape of various disciplines.

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This multilevel program is designed to improve the campus environment for female faculty members in science and engineering and as a result to increase the successful recruitment, retention, and promotion of tenure-track female faculty members in those fields. The presence and success of these female faculty members should in turn affect the expectations and attitudes of the many women and men who are graduate and undergraduate students in science and engineering. Many of these individuals will go on to have science and engineering careers themselves; because UM trains so many students, it is anticipated that the impact of this program may reach well beyond this university.

This article focuses on one of UM ADVANCE Project's interventions: the creation of a faculty committee called Science and Technology Recruiting to Improve Diversity and Excellence (STRIDE), which was designed to improve the recruitment and hiring of women through a process of peer education conducted by senior science and engineering faculty members.

Development of STRIDE's Approach

It can be difficult to persuade faculty members that a proactive approach to recruiting women is not only warranted but is not in itself a form of pernicious discrimination against men (Fried et al., 1996). UM's reliance on the STRIDE committee stems from the belief that scientists will be more receptive to hearing about ideas they might otherwise dismiss as unnecessary or "political" if they learn of them through colleagues whom they already respect both as researchers and as individuals. Thus, the STRIDE members are all full professors in science and engineering fields who were nominated by the deans of their colleges to serve on the committee because the deans regarded them as having high credibility with other faculty members and believed that they cared about issues of diversity in science. Because women may be regarded as being "partial" to their own cause when addressing problems specifically confronting women, more than half of the committee members (five of eight) are men. The principal investigator for ADVANCE at UM, who chaired the STRIDE committee, did not know these eight faculty members prior to inviting them to serve on STRIDE, nor did they know one another. Although STRIDE committee members certainly volunteered time and expertise well in excess of what could be offered to them in compensation, all committee members were provided with course release or research support in recognition of their work on behalf of the larger university community.

Harvard University's Committee on Faculty Diversity was an important model for STRIDE. UM's principal investigator met with members of Harvard's committee to learn about what they did before bringing the eight members of STRIDE together for the first time. They recommended a number of valuable practices: ensuring adequate support staff for the committee, regular communication and exchange with deans, sending as many members as possible to meet with search committees, sending both men and women to every meeting if possible, and being ready with data to talk about gender distributions in the fields specific to each department. STRIDE adopted all of these recommendations. Other

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The initial committee included Pamela Raymond and Michael Savageau from the School of Medicine; Anthony England and Martha Pollack from the College of Engineering; and Carol Fierke, Melvin Hochster, Samuel Mukasa, and John Vandermeer from the College of Literature, Science and the Arts. Michael Savageau retired from UM and the committee at the end of the 1st year.

See https://schwinger.harvard.edu/-georgi/women/cfd.html for information about Harvard's committee.
aspects of the Harvard committee’s approach (e.g., a focus on informal meetings outside of official settings) seemed well adapted to Harvard’s local culture but not to UM’s. STRIDE decided early on that it would both build on Harvard’s experience and develop its own practices suited to the UM environment.

Combining science and social science expertise proved crucial to the development of STRIDE’s approach. The principal investigator for ADVANCE at UM is a professor in psychology and women’s studies, familiar with social science research on the psychology and sociology of gender but less familiar with the world of science and engineering. The eight members of STRIDE were drawn from three different colleges: the School of Medicine; the College of Engineering; and the College of Literature, Science and Arts. They had expertise in both the subject matter and cultures of their respective fields—mathematics, geology, cell and developmental biology, computer science, chemistry, ecology and evolutionary biology, electrical engineering, and microbiology and immunology—but were largely unfamiliar with social science literature addressing gender.

The eight members of STRIDE came to their first meeting in April 2002, having read a stack of articles on science and gender and part of Virginia Valian’s (1999) book Why So Slow? The Advancement of Women.4 Together, they watched a videotaped lecture Valian had given at Rice University. Then they began to discuss the central problems involved in hiring and retaining women both in their own experience and as examined in the social science literature, and the best means of communicating this information to their colleagues.

Although the group found many of the articles they read useful, they were particularly impressed with Virginia Valian’s (1999) synthesis of empirical research in experimental psychology and more broadly in the social science literature. STRIDE members found the experimental results Valian reports in her book and lecture persuasive, and they believed that their colleagues would too. Although not neglecting other literature they had read, they began to build a presentation around key concepts presented by Valian; these included critical mass, gender schemas, evaluation bias, and the accumulation of disadvantage. The central points they wanted to convey were that men and women both rely on gender schemas, or hypotheses about what men and women are like, that lead them to undervalue women in science and engineering and other professional settings, and that small disadvantages accrue to women in ways that build over time. Female scientists are often told not to make mountains out of molehills, but as Valian noted in her lecture, mountains are molehills piled one on top of another.

Understanding these concepts was one thing, but figuring out how best to apply them to the academic recruitment process was another. STRIDE members found their discussions of potential recruitment strategies and approaches to persuading their colleagues of these points intellectually invigorating and deeply mobilizing. Having decided that their job was to meet with anyone who had input into hiring, including department chairs, search committees, and entire departmental faculties, they worked with the program manager, who provided staff support to the committee to design the materials they would offer their prospective audiences. This entailed meeting for more than 20 hours over the course of 4 months, with substantial reading and detailed e-mail exchanges taking place between sessions.

STRIDE chose to design a PowerPoint presentation that would serve as a road map for discussions with various audiences. Vast numbers of slides were designed and discarded.

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4See http://www.umich.edu/~advproj/stride.html for further information about these materials.
their own new colleagues. Some departments had more than one STRIDE presentation during the year, and STRIDE presented to some groups that were not search committees (e.g., all of the department chairs in each of the three major colleges, the deans of all of the colleges, and the associate deans and associate provosts university-wide). Thus, the number of departments receiving the survey (14) was smaller than the number of presentations made (26).

The Web survey was sent to all faculty members of the relevant departments via e-mail using department faculty e-mail lists. Recipients were asked to respond even if they had not attended a presentation, with the purpose of ascertaining whether information from the presentations was getting passed on to those not attending. We also wanted to know how the information was perceived by attendees compared with nonattendees (a separate survey was constructed for those who had and had not attended STRIDE presentations and made available to all; respondents selected which survey to complete). Approximately 20% (61) of the faculty members who were contacted completed the survey. It is perhaps surprising that we received a slightly higher number of responses from people who did not attend a STRIDE presentation (33 responses) than from those who did attend (28 responses). This might be accounted for by the fact that in cases in which only search committees attended the presentations, the majority of department members were not invited and did not attend. The surveys were anonymous; thus, we are unable to attach individual responses to departments or the specific presentation each respondent attended.

Here, we present data on respondents who attended STRIDE presentations. The survey asked these respondents to rate the effectiveness of the presentations they attended (on a 5-point, Likert-type scale). Open-ended questions were also asked about what was most and least effective about the presentations and what, if any, effect the presentations had on their respective departments and their processes for carrying out future faculty searches.

Table 1 represents the rating responses from faculty members who did attend at least one STRIDE presentation during 2002 and 2003, on a Likert-type scale ranging from 1 (not at all effective) to 5 (very effective).

Although there was a marked skew toward favorable ratings (17 of 28 giving the top two ratings), it is also noticeable that a nontrivial number gave negative ratings (7 of 28). This is not surprising, because the most motivated audience members—those who very much liked or very much disliked the presentation—were likely to take the time to respond to a Web

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Note. STRIDE = Science and Technology Recruiting to Improve Diversity and Excellence. Responses were scored on a 5-point, Likert-type scale ranging from 1 (not at all effective) to 5 (very effective).
survey. We note that the presentation received more positive ratings than negative ones (over 60% rated the presentation as very effective or effective) and that nobody rated the presentation not at all effective. We also note that 1 respondent explained that the presentation was "excellent" but rated it as not very effective (a rating of 2) because the faculty member thought that it had not had an impact on this individual's department's faculty searches.

Respondents' open-ended comments about the most and least effective aspects of the presentations they attended provided further context for these ratings. Of paramount value of the presentations to several respondents was simply the idea behind the STRIDE committee: that these senior faculty members were taking the time to prepare and present this information, bringing these issues out into the open and allowing for discussion. Their efforts lent credibility to the importance of these issues.

Beyond this, respondents also noted the quality of the presentations: They described them as "excellent," "well-argued," "consistent," and "professional." Two issues appeared to be especially reflected in these comments: STRIDE's thorough discussions of both demographic data about women's training and hiring history in academic science and engineering, and gender bias, including a clear review of important research in this area. Several respondents specifically noted the effectiveness of the demographic data STRIDE presented. They were struck both by the content (that the data showed the "need for changing the demographics") as well as the effectiveness of presenting clear, unassailable data. One respondent commented on the value of "hard numbers for where women are and where they have been." Another noted that "hearing the statistics" and "sticking to the facts" made the STRIDE presentation particularly effective. A different respondent emphasized that "the data presented are extremely important and meaningful."

Respondents were also impressed by STRIDE's very clear review of the research on gender bias and schemas, particularly the discussion and examples illustrating how well intentioned behaviors can unwittingly result in bias. STRIDE often uses video clips from a talk by Virginia Valian that several mentioned as particularly effective in making this point. For many, the information on gender bias presented by STRIDE was new; several respondents indicated that they had become aware (or more aware) of the difficult situation for women as a result of the presentation. One respondent reported that the presentation "highlighted some issues that I was unaware of in terms of biases that are present but not obvious." Another respondent noted, "I learned quite a bit about latent and unwitting barriers to female faculty recruitment and retention."

Despite the obvious quality and value of the STRIDE presentations, some faculty respondents remained concerned that the presentations were not effective in reaching some faculty members, especially those with power to effect change. One respondent noted, "The male faculty weren't very interested." Another commented, "The chairs frequently 'talk a good game' on how 'hard' they are trying to hire women faculty, women chairs, etc., promote women and advance their careers, but do not do so—either before or after the STRIDE presentation." A few respondents themselves suggested that they were not persuaded by the information STRIDE presented. One respondent reported, "I remain unconvinced by the main hypothesis, which I took to be that essentially all groups doing any evaluation are either consciously or unconsciously prejudiced against women."

Some faculty members also reported that they "felt accused of being sexists" and that the STRIDE committee did not recognize "that we are trying to recruit the best possible candidates to fill our positions. It just may turn out that the best possible candidate is not a woman." In contrast, another respondent felt that STRIDE's message was watered down
significantly so that it would not be offensive and as a result was less effective. The truth, as one respondent recognized, may be somewhere in the middle. This respondent explained that the presentation probably had no effect on the people at the extremes—really concerned about the status of women in science to absolutely convinced that there is no problem. I think there may have been an effect on those in the middle. I know it got me to thinking differently about my own career.

Moreover, one respondent was optimistic that the positive impact of STRIDE's presentations may not be immediate. "There was certainly some reaction against the presentation, which would tend to negatively impact us; but I believe there was also some very useful information that my colleagues will have reflected on, as I have."

Of course, of paramount importance for our purposes here is whether the STRIDE presentations had any effect on the departments' subsequent faculty searches. Many of the respondents did indicate that the STRIDE presentations had a direct effect on their departments. Several noted that the presentation made faculty members more aware of the issues. One indicated that it "broadened the perception for gender biases and their origin"; another reported that "it contributed to our increasing awareness of the importance of recruiting women and minority faculty, and of working extra hard to recruit such faculty." Others noted seemingly direct effects of the presentation on department hiring. One commented, "It made the personnel committee, on which I sit, very conscious of the need to increase female representation in the department." Another reported, "Several faculty told me, prior to the presentation, that the reason that we do not hire more women is that women are not interested in faculty positions. Their search committee subsequently identified and hired a woman."

Another concurred: "I am on the search committee, and we have several times referred to points made in the presentation discussion in formulating our own tactics." In all, 11 of the 27 faculty members who responded to this question (41%) indicated that the STRIDE presentation had had some positive effect on their departments and how they conduct searches (3 of these respondents believed that the STRIDE presentation was directly related to their departments hiring women). In contrast, 13 (48%) indicated that there was no clear change in department hiring practices as a result of STRIDE activities; the remaining 3 faculty respondents (11%) reported that they didn't know if STRIDE had had an effect or not.

Thus, there is some evidence here that STRIDE has had an affirmative impact on the recruitment process. Several of the positive responses to the survey indicate that some search committee participants believe that they have improved their recruitment methods on the basis of STRIDE's presentation. However, it is difficult to judge the real impact of STRIDE's presentation, not only because the small sample of respondents is not necessarily representative but also because individual respondents' beliefs about the presentation's utility may not be the best way to gauge the presentation's actual effects.

**Impact on Hiring**

Another aspect of STRIDE's effectiveness can be measured by comparing the proportion of female scientists and engineers hired during the most recent academic year to the proportion hired in the past. Table 2 shows the proportion of men and women hired in each of the three colleges that employed the largest number of scientists and
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Engineers at UM over the past 3 years. Note the marked, and statistically significant, increase in the proportion of women hired during the 1st year of STRIDE's activity on campus ($\chi^2 = 7.76, p < .05$).

During the 2002-2003 recruitment year, the absolute number of women hired in the three colleges employing the largest number of scientists and engineers at UM increased between two- and fourfold (from 8 and 4 to 16); in addition, the proportion of women hired in those colleges more than doubled when compared with either of the two preceding years. Other factors that may have contributed to the increase include substantial university-wide attention to female faculty members in science and engineering generated by the release of a report on the academic climate for women in these fields at UM in September 2002 (Stewart, Stubbs, & Malley, 2002), along with the Departmental Transformation Grant competition mentioned above; the leadership of the deans of the three colleges employing the most scientists and engineers, all three of whom are members of the ADVANCE Project Steering Committee; and the leadership of UM's president and provost, who have lent public support to the issues of improving recruitment, retention, and climate for female faculty members in science and engineering.

Although all of these factors no doubt contributed to departments' motivation and willingness to hire more women, STRIDE is the intervention that most directly provided departments with tools and ideas to aid in the recruitment process. It is reasonable to conclude that STRIDE, having addressed so many audiences and having drawn specific attention to useful university policies and resources, contributed to the increase in the number of women hired. For example, many of the search committees and department members STRIDE met with were unaware that the university has resources available to aid in placing spouses and partners of new faculty members, and some were unaware of university policies regarding maternity and the tenure clock. Further, anecdotal evidence supports the view that at least one department was successful in recruiting a highly regarded female candidate away from strong competitors because of advice it received from STRIDE.

Impact on Committee Members

Seven of the eight members of STRIDE were interviewed in September 2002, shortly after they began making public presentations. They were interviewed again in December 2003, at a point when they had significantly more experience working together as a team.

Table 2. Men and Women Hired in Natural Science and Engineering Departments in Three University of Michigan Colleges

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<td>College of Engineering</td>
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<td>College of Literature, Science and Arts</td>
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<td>Total percentage women</td>
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committee and interacting with departments and search committees. (The eighth member of STRIDE changed in 2002, when an original member of the committee retired from UM. The retired member was not available to be interviewed during the first round, and his replacement was out of the country on sabbatical during the second round.)

In the first round of interviews, all seven STRIDE members indicated that their summer "study sessions" had a strong impact on their understanding of the problems female science and engineering faculty members confront. They were impressed by what social science could tell them. As one of the men on the committee put it,

I was surprised by the number of studies that have been done on the nature of the bias, and where the bias comes from, against women in the sciences...there’s been a lot of really, really good research that’s been done, you know, these studies are fantastic.

The women on the committee found themselves rethinking not only the gendered nature of science and engineering but also the way their own careers had been shaped by dynamics that in the past they may have chosen, in self-defense, not to think about:

I would say the most surprising thing that I've learned was what unconscious bias was, and how prevalent it is, and how it works...I discovered...that really in my own career I had been coping by denying that I had ever had any problems...it turned out to be much more of an emotional voyage than I had ever expected it to be.

In the interviews conducted in December 2003, STRIDE members referred back to their experiences in their study sessions, again describing their conversations during the summer of 2002 as part of a period of discovery or, as one committee member put it, "consciousness-raising." According to another STRIDE member,

The process that we went through worked so well. I don't know whether it was just the chemistry of the particular group, or whether the process could be replicated...the process being to identify a group of senior faculty, both men and women, in the sciences and engineering, who have shown some evidence of being concerned about these issues, but who clearly don't know all the literature. And I think every one of us on the committee now is like that. That is, we all had some previous commitment, but what we realized when we got together and started actually looking at the data and learning together was that we didn't understand, we didn't really know what was going on, we really were quite naïve...that discovery process, I think, was so critical to building the passion that the current group has.

More than a year elapsed between the first set of interviews and the second, and during that time, STRIDE continued to read articles and studies on gender and science and to give presentations throughout the university, gaining increasing confidence in their ability to present this information persuasively. All seven of these STRIDE members now report being not only just as motivated in their mission as before but also more assured in their role as spokespersons, both in the context of giving slide presentations and in dealing with colleagues outside that formal presentation setting. Further, all of them described things they had done or said to intervene in negative gender dynamics in their departments and other settings during the past year that they believed they would not have done prior to their experiences with STRIDE.

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One male committee member said, "You could say, perhaps, that I've become a bit more combative; things that I used to just shy away from, I now feel that, you know, I'm obligated to do something about it." Similarly, one of the women reported,

I think that I am much more willing to discuss these issues with my colleagues and much more willing to intervene in cases where I feel that this [gender bias] is an issue, and to intervene in terms of saying, ok, I think we need to look at x, y, and z, and the literature says these things, and I just want us to consider that.

Another of the women said,

I use that knowledge to enrich my discussions with my colleagues in other contexts, when I'm involved in making decisions on committees...or at faculty meetings...I find myself able to draw on a much larger wealth of information about gender-related issues...that I think is directly a result of being a member of STRIDE and learning what we did in that process.

The same woman reported successfully encouraging department chairs in her college to take advantage of other ADVANCE initiatives, such as the Departmental Transformation Grants: "That's an example of something I would not previously have had the motivation, nor the...kind of a sense of responsibility, I guess, that allowed me to say [what I said] to these chairs." One of the men pointed to the importance of not only the information he had learned since becoming a member of STRIDE but also of being able to think of his fellow committee members as an alternative set of peers that exists outside of his department:

One of the big values in STRIDE for me has been just knowing that other people feel the same way, and they're struggling with the same issues. When you're isolated, as you would be in a department, it isn't normal to talk about these things.

One question the STRIDE members were asked during their first interview in 2002 was whether they could sustain their current pace for the remaining 4 years of the ADVANCE Project. More than one of them suggested that the long time horizon was helpful rather than damaging to their motivation. The longer term enabled them to think more expansively about what it would be possible for them to do and to believe that there was enough time to accomplish something.

In fact, between September 2002 and December 2003, the group expanded its own mandate rather than cutting back on its time. During the course of the year, STRIDE developed a relationship with another group working under ADVANCE Project auspices, the Center for Research on Learning and Teaching (CRLT) Players. It also decided to introduce itself to incoming female faculty members who might want to turn to its members for advice in the future. Finally, it decided to cultivate a group of allies, in part by replicating as much of its own early study and discussion experience as possible.

CRLT Players, the interactive theater group, usually specializes in depicting teacher-student interactions but has developed a sketch for ADVANCE portraying a faculty meeting in an engineering department. It was designed to reveal problematic dynamics in departments in which women are a small minority of the faculty members, and the topic at hand during the "meeting" portrayed has to do with a hiring decision in which one candidate
is a woman. The sketch is too complex to summarize here, but it is a rich source of material for discussion when it is performed for science and engineering faculty members. CRLT Players has highly skilled facilitators of its own; however, it depends on its audiences to ask good questions to get discussion started. STRIDE realized that it could play a role in those discussions by sending some of its members to attend performances to ask key questions if the audiences don’t come up with them on their own.

In May 2003, STRIDE invited faculty members, including some from departments that do not already have STRIDE representatives in them, to attend a set of sessions similar to those STRIDE had attended in April 2002. Ideally, STRIDE hoped to replicate its own experiences of the previous year, to cultivate an expanded group of activists similar to those already involved with STRIDE. Fifteen faculty members from various departments agreed to attend 6 hours of discussions with STRIDE. Because STRIDE’s members realized that having problems to solve (a presentation to design and a handbook to write) had given them concrete ways to start applying their new theoretical insights, they gave their colleagues something to work on as well: They asked them to help improve STRIDE’s approach to interacting with departments and search committees. The new, larger group named itself Friends and Allies of Science and Technology Equity in Recruiting (FASTER). Members of FASTER have themselves been working on problems of gender and science since they were defined as a group. One member of STRIDE reported finding members of FASTER extremely helpful in the context of a university-wide committee on science and gender, while another reported that the member of FASTER who has subsequently become his own department’s chair pays consistent attention to gender issues in that department, particularly those involving graduate students.

As noted above, STRIDE members themselves not only continue to be committed to their collective project of educating search committees about evaluation bias and recruitment strategies, they have also become more likely to speak out about gender issues on their own in other contexts. One of the men noted that since he has demonstrated an interest in diversity issues through his participation on STRIDE, the university’s administration has taken notice and has tapped him to participate on three other diversity-related committees. He also found himself advising colleagues at other universities about applying for ADVANCE grants. A woman on the committee reported that she is now much more willing to mentor other women with respect to gender issues than she had been in the past. Another one of the men made women in science (in his own field, in particular) the subject of a public lecture associated with an award he has recently won. In the past, he said, it would never have occurred to him to talk about women in science rather than some aspect of his own research. All of the committee members interviewed described a consistent level of activism motivated by their greater empirical knowledge of problems confronting women in science, as well as tools for addressing them.

CONCLUSIONS AND RECOMMENDATIONS

STRIDE is a work in progress. At the time of this writing, the committee has existed for less than 2 years. However, its impressive early success in improving the recruitment and hiring of female science and engineering faculty members at UM leads us to recommend the STRIDE committee as a model that might be adopted by other institutions. We believe that the long-term effects of the mobilization of these highly respected scientists can only be
positive for female faculty members at UM. These faculty members constitute a core group of advocates who are not only well-intentioned and strongly motivated but also unusually well informed. They bring expertise in science and engineering together with a solid understanding of social science literature on gender, a rare combination.

We would be remiss if we did not offer some specific recommendations along with our general exhortation to follow STRIDE’s model. We have incorporated here not only our own observations about factors that may have made an important difference in STRIDE’s formation and practice but also those that STRIDE committee members offered. These include the following:

1. The request to serve on STRIDE came from a campus-wide project thoroughly legitimated by the central administration and associated with an institutional commitment to a long-term process of change. The committee knew that it was part of a larger effort.
2. Concrete resources were provided to compensate for time spent on the committee. Not only did this actually provide enabling conditions to faculty members, but it also communicated the seriousness of the institutional commitment.
3. The commitment to serve on STRIDE extended over several years. This persuaded many committee members that the duration of the planned effort matched the kind of duration needed to create and sustain change.
4. The committee had ready access to someone it viewed as an “expert” on the social science literature, about which its members felt little confidence.
5. The committee had ready access to a support staff member with substantial relevant competence to help it find the empirical and theoretical literature it was interested in and to help it implement its ideas.
6. The committee worked together over an extended period defining and redefining its own message and strategy.
7. The committee included participants from each of the most significant relevant environments (the three large colleges), which meant that it had considerable relevant experience and examples to draw on once it had tools to analyze that experience.
8. The committee’s composition was crucial. All of the committee members were respected scientists and engineers in their own fields, both men and women.
9. Across their differences, committee members spent a lot of time together thrashing out hard issues they disagreed on (e.g., recruiting women as scientists vs. as women), thereby building trust in one another and confidence in their message.
10. The committee met to process its experiences in presentations and discussions on a frequent and regular basis.

The members of STRIDE are the first to admit that it will not be possible to persuade everyone to care about questions of gender equity or to believe that an equitable system and culture are not already in place. However, starting a conversation about the issues involved has to be the first step. The deans of the three large colleges jointly nominated STRIDE for a campus award for efforts toward diversity at the end of their 1st year of work. Their comments are a powerful indication of the contribution STRIDE made to that conversation at UM in its very active 1st year. One dean noted that STRIDE had a substantial impact on the departments via both chairs and search committees.
I invited the committee to make its presentation to the first meeting of all of the chairs and directors of all departments [in the college] last fall, and to distribute their handbook. As a result of that presentation, all of the departments invited STRIDE to meet with their whole department, a search committee, or some other departmental body. The resulting discussions were lively and generated ideas about specific solutions to the particular issues in different departments. Moreover, because the handbooks were always also distributed, they remained a lasting resource for departmental use. Just this week I met with an incoming chair of a department to discuss his goals for the department next year; he spontaneously mentioned key points from the recruitment handbook that will guide his efforts.

A second dean commented particularly on the efficacy of STRIDE's presentation:

I have worked closely with this committee since its inception last year and I know of no other group that has spent as much time as they have to promote gender diversity. The presentation they put together to highlight gender related myths is extremely impressive and persuasive. Further, the campus was extremely well served by the extra effort the committee took to make sure that this presentation was seen by as many groups as possible. Frankly, I cannot think of any other activity that is likely to have as much impact as the efforts of this committee.

The third dean echoed these points and also noted the impact of the committee's work on his own personal views:

Since its establishment...the committee has taken on the important role of educating the University community about promoting gender equity and recruiting and retaining women and minority faculty members. In a very short timeframe this group has already made a significant impact....They provide many valuable resources to a wide variety of groups and they do it with great dedication and creativity. They have been able to substantially influence my thinking, and that is no small task.

In conclusion, we note that the NSF regards the projects funded under its ADVANCE initiative as a series of concurrent experiments. Although it is not yet clear what the results of all of UM's ADVANCE experiments will be, STRIDE seems to be succeeding in more ways than we predicted.

REFERENCES


Recruiting Female Faculty Members


