It is no longer the case (if, in fact, it ever was the case) that a department can simply write an ad, place it in its professional publication, and wait for the hundreds of qualified candidates to submit applications. Attracting a strong and diverse pool of candidates requires both time and hard work, and the entire department must be engaged in attracting candidates.

Dean in a STEM college

The underrepresentation of women and minority faculty in the science, technology, engineering, and mathematics (STEM) disciplines continues to be a major concern to university leaders, policy makers, and scientists. While a number of complex factors across the entire academic pipeline play significant roles in this problem, important contributing causes of the underrepresentation of women and minorities on the STEM faculty are how recruitment is conducted and how hiring decisions are made.

In the following, we elucidate how universities can systematically transform their conventional recruitment practices to develop a more diverse faculty and a more inclusive faculty climate. First, we describe how conventional recruitment practices contribute to the homogenous replication of the faculty body. Next, we share the results of studies of the nature and consequences of diversity in applicant pools in recent science and engineering searches conducted at our universities. Finally, we provide guidelines and best practices for effective faculty hiring processes.

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ADVANCE is an NSF-sponsored program that supports university-wide efforts to improve the representation, retention, and advancement of women faculty in the STEM disciplines. Since the program began in 2001, it has funded these efforts at over 60 institutions through institutional transformation and partnership awards. In the March/April 2006 issue of Change, Sandra Laursen and Bill Rocque shared lessons learned from the ADVANCE project at the University of Colorado, Boulder. The institutional transformation efforts at UC-Boulder focused on increasing the success of female STEM faculty through faculty-development initiatives.

At Case Western Reserve University (CWRU) and the University of North Carolina at Charlotte (Charlotte), along with a number of transformational strategies, our ADVANCE programs have targeted another lever of institutional change: faculty recruitment. In particular, we have focused on increasing the gender diversity of applicant pools and “short lists” (top candidates invited to campus for interviews) and eliminating unconscious biases in the faculty search process.

Research has shown that women and members of underrepresented minority (URM) groups are judged more fairly when they are at least 30 percent of the applicant pool (Sackett et al. 1991), yet this level of representation is difficult to achieve in academic STEM disciplines, where women represent, on average, less than 20 percent of qualified applicants. Furthermore, research has shown that female applicants for these positions tend to be evaluated less favorably than male applicants with identical qualifications, by both men and women (Steinpres et al., 1999; Wenneras & Wold, 1997). This evaluation bias makes it less likely for female candidates to make it to the short list, which in turn makes it less likely that a woman will ultimately be offered a faculty position.

If, on the other hand, we can change the faculty search process in ways that encourage more diverse applicant pools and ensure that all applicants are evaluated fairly, more women should make it to the short list and be invited to campus. Once on campus, qualified female candidates can challenge implicit assumptions about successful academic scientists, resulting in the formation of new non-gendered schemas, or mental frameworks (Valian, 1999). These new schemas should lead to fairer evaluations of women on the short list, promoting fairer evaluations of future underrepresented candidates.

These relationships between applicant pools, short lists, and the diversity of new faculty hires have informed our ADVANCE recruiting efforts at CWRU and Charlotte. We began with an examination of the faculty search process—how it typically occurs and how it might be revised to promote a more diverse faculty. We then took steps to make the process more proactive, inclusive, and bias-resistant, particularly through search-committee training and education. Next, we undertook a longitudinal study of the composition of applicant pools, short lists, and faculty hires in STEM departments.

Our results suggest that hiring outcomes may be diversified by increasing the range of candidates in the early stages in the faculty search process, since diversity in candidate pools affects the gender and race/ethnicity of the candidate offered a position. We also compared the gender composition of short lists and final STEM hires before and after ADVANCE-supported changes were made to the search process. Early results suggest our changes are increasing the gender composition in both short lists and final hires. Here we report the results of our observations and evaluation and the implications for faculty search processes and outcomes.

**The Traditional Faculty Search Process**

1. Place job ad
2. Accept applications
3. Receive nominations from colleagues at other universities
4. Review and rank candidates
5. Develop short list
6. Interview top candidates
7. Make job offer

This flow chart illustrates the typical faculty search process at most institutions. The process has several characteristics that impede efforts to diversify the faculty. First, it is a passive approach to recruiting: It assumes that appropriate applicants will apply for an advertised position. This passive process of waiting for and receiving applicants is in sharp contrast to a proactive process that aggressively pursues applicants.

The typical faculty search process is also time-limited, beginning when a position announcement is written and advertised and ending when a new faculty member is hired. This is unlike the typical business organization’s recruiting process, which is on-going; firms are always on the hunt for new external talent and always “building the pipeline” by grooming current employees and interns.
Faculty seldom think of themselves as pipeline builders or of their graduate students as “internal talent.” In fact, due to the widespread belief among faculty that graduate students and new faculty must come from institutions other than their own, students are more often deterred from applying for jobs at the institution at which they received their doctorate than sought after.

The typical faculty search process is also non-inclusive, in that only the subset of the faculty who sit on the search committee are actively involved in all steps of the process. This often means that members of the faculty not serving on the search committee do not see themselves as active agents in the search. Thus, while they may contribute to the actual hiring decision, their input, effort, and personal networks are often underutilized as potential recruiting resources. Their superficial exposure to candidate credentials may also make them more prone to evaluation biases and errors, as described below.

The composition of the typical faculty search committee is also non-diverse on an array of dimensions. When search committees are microcosms of the faculty from which they are drawn, they are likely to be homogeneous in terms of gender, race, religion, and ethnicity. Because of our tendency in the academy to clone ourselves, homogeneity based on institutional type, geography, political views, and theoretical orientation is also widespread (Moody, 2005). This tendency toward self-replication (Kanter, 1977) is exacerbated by candidates recommended through the personal (again, usually homogenous) networks of the committee chair and members.

Members of the typical faculty search committee are chosen for their subject-matter expertise in the disciplinary area of the hire. They often lack expertise in basic recruiting and hiring practices and may even have erroneous beliefs about EEO laws, affirmative action, and relevant case law. It is not uncommon to hear members of search committees make comments such as “we have to be color-blind while evaluating candidates.” This unwillingness to acknowledge race, ethnicity, or gender as legitimate and legally defensible considerations in hiring demonstrates a misperception held by some faculty that contributes to tension and potential conflict among search committee members and prevents an open discussion of how the committee should consider candidate diversity.

Moreover, recent research suggests that the typical search committee is alarmingly bias-prone (Moody, 2004; Valian, 1999). This is because both men and women hold unconscious biases and commit cognitive errors that influence how they judge candidates. For example, when evaluating identical application packages, both male and female psychology professors were twice as likely to hire “Brian” over “Karen” as an assistant professor (Steinpreis, Anders, & Ritzke, 1999). In another study, advancement from preliminary rounds and hiring of women U.S. symphony orchestra members increased when blind auditions were conducted (Goldin & Rouse, 2000). Because they are subtle, unintentional, and automatic, these errors are difficult to detect and therefore to control. And because they are pervasive, their presence can have a significant impact on faculty diversity.

**The Study and Key Findings**

At both our universities, we have worked with STEM units and our human resources offices to collect and analyze longitudinal data on all full-time faculty searches in STEM units over the past six years. Searches for part-time and visiting faculty, lecturers, and researchers were excluded from the study. Searches were also excluded if a full search was not done due to promotion of an internal candidate. This yielded 193 eligible STEM faculty searches during academic years 2001–02 to 2006–07 at CWRU and 126 at Charlotte during 2003–04 to 2007–08.

Information collected included the department, year of the search, and gender composition of applicant pools (when available), short list, and final hire. At CWRU, females composed 15.9 percent of the candidate pools, 30.7 percent of the short lists, and 38.7 percent of the hiring offers. At Charlotte, females comprised 28.3 percent of the short lists and 35.5 percent of the final offers; reliable data were not available on composition of the applicant pool. We examined the relationships among the gender composition of applicant pools, short lists, and faculty hires, as well as the impact on hiring outcomes of changes to the faculty search process.

Here is what we found:

- Although female candidates constituted small proportions of the faculty candidate pool in the searches over five years (ranging from 10 to 18 percent), they constituted greater
proportions of the short list (25 to 36 percent) and hires (27 to 46 percent) in those years. Female candidates who enter applicant pools are viable candidates to advance to the short list and be offered faculty positions.

- A statistically significant linear relationship exists between the percent of female and URM applicants in the candidate pool and their degree of inclusion on the short list. This finding represents the strongest evidence to support casting a broad and diverse net when conducting faculty searches and to defer moving the search process to the next stage until a greater proportion of female and URM applicants have been included.

- The level of representation of female and URM applicants on the short list is associated with the likelihood of hiring a female or URM candidate. Female faculty hires occurred more frequently when there were two or more females on the short list, which occurred in 55 percent of searches.

- The majority of Native American, black, and “race-unknown” candidates were hired when there were more females on the short list. This finding illustrates that increasing gender diversity in candidate pools can have broad-ranging, beneficial effects on the hiring of other URM faculty groups at the university.

- While most candidates accepted their offers, female candidates were more than twice as likely to reject them as male candidates. Candidates of most races most commonly accepted their offers, although Hispanic candidates were more likely to reject than to accept them. These rejections may occur for many reasons, including more attractive offers elsewhere, a lack of diversity at the department or school level, perceptions of campus climate, a lack of childcare, or dual-career issues pertaining to a trailing partner or spouse. Improving the acceptance rate of applicants offered faculty positions is a strategic priority for increasing faculty-level diversity.

- Percentages of female faculty on short lists and final hires at Charlotte were averaged for the four years preceding changes made to the search process and compared to the rates following the change. The average percentage of females on the short list prior to the changes was 25.3, and the average percentage of female hires was 24.5 percent. Since making changes to our search process, these percentages have risen to 35.5 and 37.5, respectively.

**A New Model for Faculty Searches**

Institutions committed to diversity must adopt a new approach to faculty recruitment and hiring. The elements of a traditional search reviewed above offer clear direction for change. First, we must move from passive to proactive models of recruitment and aggressively pursue talented and diverse applicants rather than waiting for them to apply. We must recognize that this will require a shift from time-limited searches to ongoing recruitment activities.

The process must be inclusive and involve all faculty, even those not serving on a particular search committee. The composition of each search committee must be as diverse as possible on all dimensions of diversity sought by the institution and the department. If necessary, faculty from outside the department should join the search committee to diversify its composition along relevant dimensions.

**Training** must also be provided to ensure that faculty members involved in the search process have expertise in basic recruiting and hiring practices and to make them bias aware. University administrators must hold all participants in the search process accountable for its outcomes and for the extent to which it is helping the institution demonstrate its commitment to diversity and achieve its faculty diversity goals. For example, deans should resist signing off on a hiring decision if a lack of diversity is evident in an applicant pool. Finally, the new model for faculty searches must be aligned with and supported by other institutional policies and practices.

As described below, ADVANCE recruiting initiatives have attempted to move universities from the traditional model toward the new model for faculty searches by targeting these important actions as levers for institutional change.

**Search Committee Training**

We need to explain better why diversity is a worthy goal—what it brings other than a different composition of the faculty. We need a well-articulated vision for diversity as a goal that facilitates some other desirable outcomes.

Dean in a STEM college

Historically, institutions have not provided training to faculty on how to conduct effective searches, especially those likely to yield diverse pools and outcomes (Turner, 2002). But one of the biggest lessons emerging from the ADVANCE initiatives is that faculty need to be trained in order to be effective agents in the change process (Bilimoria et al., 2008). At Charlotte, participation in such a training is required for all chairs of a faculty search committee. Sessions are about two hours in length and typically occur early in the fall semester as new search committees are formed. Many variations on this approach are described at the ADVANCE portal (http://www.portal.advance.vt.edu/Categories/Initiatives/Recruitment.html).

At both CWRU and Charlotte, as with most other ADVANCE institutions, the training for search committees focuses on three central aspects of the search process:
Institutional commitment to diversity

This portion of the training provides the institutional context for the training and its goals, and we have found that it is most effectively presented by a senior administrator. At Charlotte, for example, the provost begins each session by explaining how a diverse faculty is integral to the attainment of our institutional mission and links that goal to the success of the faculty search committee. We also have asked deans to participate in the workshops and to explain that they will be scrutinizing the composition of the short list produced by each search committee and requesting justifications for those that do not at least mirror the diversity of the available pool.

At CWRU, a faculty diversity specialist attends search committee meetings at the request of the dean or search committee chair to emphasize institutional commitment to the process and to support the committee with resources and hiring-related guidance.

Reducing evaluation errors and biases

This portion of the training is typically conducted by a member of the ADVANCE team, and it draws heavily on recent social science findings that both men and women hold unconscious biases that disadvantage women and minority candidates (Moody, 2004; Valian, 1999). At Charlotte, we have adapted scenario-based training from other ADVANCE institutions that allows faculty to learn experientially about these biases and their potential effects on search-committee processes and outcomes. We supplement this training with pre-training readings, such as the on-line guide developed by the ADVANCE program at the University of Wisconsin (http://wiseli.engr.wisc.edu/docs/BiasBrochure_2ndEd.pdf).

Resources and tools for inclusive searches

The remainder of the training is delivered by Human Resources or the Office of Faculty Diversity staff and is designed to introduce participants to resources and tools that can aid the search committee in conducting effective and inclusive searches. Many ADVANCE institutions have developed search-committee toolkits that contain proven strategies in one easy-to-use online site (good examples are CWRU, UCLA, and Wisconsin). These contain many useful forms, templates, and guidelines for the training.

We have found that sample advertisements are especially helpful to search committees seeking to craft inclusive job advertisements but unsure about potential legal constraints. Again, there are many samples available through the ADVANCE portal, such as the one developed by the University of Washington, which recommends that all departments add a statement such as the following to faculty recruitment advertisements: “The University of Washington is an affirmative action, equal opportunity employer. The University is dedicated to the goal of building a culturally diverse and pluralistic faculty and staff committed to teaching and working in a multicultural environment and strongly encourages applications from women, minorities, individuals with disabilities and covered veterans” (http://www.washington.edu/diversity/avpfa/Recruitment_Toolkit/language.html).

Proactive, on-going, inclusive searches

We need to go beyond the usual search; maybe we need a headhunter approach where we aggressively seek candidates.

Dean in a STEM college

Moving from a time-limited to an on-going faculty recruitment model means that all faculty are always recruiting. As they attend professional conferences and communicate within their professional networks, faculty should always be on the lookout for promising or established scholars, especially those from underrepresented groups. They should also see themselves as builders of the academic pipeline and should adopt innovative “grow-your-own” strategies that contribute to both the quality and diversity of their own faculties. As one dean at Charlotte puts it, “Encourage your students and be nice to them!”

She also recommends that departments create a standard departmental presentation for all faculty to use on visits to other institutions. This ensures that all members of the department convey a consistent message to prospective candidates, one that is aligned with the unit’s commitment to diversity and with the position description.

Another effective practice is the creation of a standing departmental committee charged with thinking about the unit’s strategic plans and directions and identifying potential faculty who can help achieve its goals. Thus when a faculty position does become available, the unit already has a sense of what areas to target and potential candidates to contact (see the University of Washington’s faculty recruitment toolkit; http://www.washington.edu/diversity/avpfa/Recruitment_Toolkit/index.html). This group can also serve to ensure that recruitment efforts are aligned with the institution’s commitment to diversity and its articulated institutional and departmental goals.

We also recommend organizations such as the Compact for Faculty Diversity (http://www.instituteonteachingandmentoring.org/Compact/index.html), which annually hosts the largest gathering of minority doctoral candidates in the nation. Sending institutional representatives to annual meetings like these can be an excellent way to diversify the pool of applicants for open position searches and can also help build the pipeline for future searches through the creation of an institutional presence and relationship building.

At Charlotte, we have learned that follow-up with contacts made at these recruiting events is vital and that it can easily
fall through the cracks between university recruiters and departmental search committees. Therefore, we recommend that a staff member from the institutional diversity or ADVANCE office serve as a liaison between the candidates and the hiring departments. Creating a partnership with this office and the graduate school can synergize faculty recruitment with pipeline-development activities. Other ADVANCE institutions (e.g., the University of California, Irvine) have appointed rotating equity advisors at the school or college level who act as champions of faculty diversity, especially through the hiring process.

ACCOUNTABLE AND ALIGNED SEARCH PROCESSES
Because diversity is an institutional goal, it became my goal, too. As an administrator, I had to align my beliefs because if I’m not convinced, how can I lead?

Dean in a STEM college

It is important that changes to the faculty search process be aligned with the institutional mission and goals, especially as they relate to excellence and diversity, and with other institutional policies and practices. At Charlotte, for instance, we have developed a campus diversity plan that formalizes the importance of gender diversity, and we have created a policy group charged with examining recruitment policies and practices and recommending changes necessary to support our gender-diversity goals. This group has made policy changes that hold all participants in the search process accountable for its outcomes and for the extent to which it is helping the institution demonstrate its commitment to diversity and achieve its faculty-diversity goals.

At CWRU, diversity is a critical element of the university’s new strategic plan, and objectives and actions to create a vibrant and diverse faculty body are being implemented and institutionalized through the provost’s office and at the university level, including the appointment of a new vice president for inclusion, diversity, and equal opportunity.

We have found that accountability depends on good data collection and on-going assessment of the faculty search process and its outcomes. While Human Resources departments typically collect faculty search data, those data are often not used effectively or systematically. Our campuses have improved how we collect and use data to inform our progress and guide improvements in the search and hiring process.

CONCLUSIONS
Diversity within the faculty body is of critical importance to American universities in the 21st century. Gender and racial/ethnic diversity in the faculty body reduces the isolation experienced by women and URM faculty in STEM and other disciplines and gives them a sense of membership in a community, even while it creates a generally more vibrant academic climate. Although central to increasing faculty diversity, the faculty search process has been relatively under-emphasized and under-examined as a means to that end.

Our findings suggest that hiring outcomes may be improved by increasing the diversity of candidates in early stages in the faculty search process, since diversity in candidate pools affects the gender and race/ethnicity of the candidate offered a position. The implications of this finding are that it is important for faculty search committees to deliberately widen their applicant pools and increase the number of women and URM candidates shortlisted and brought to campus for interviews. Our findings further suggest that modifications to the search process such as those undertaken at CWRU, Charlotte, and other ADVANCE universities and described here can reduce unconscious biases and increase the diversity of faculty applicant pools, short lists, and, ultimately, final hires.

Resources