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THE ARCHITECTURE OF INCLUSION: ADVANCING WORKPLACE EQUITY IN HIGHER EDUCATION

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The Architecture of Inclusion: Advancing Workplace Equity in Higher Education

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INTRODUCTION

The path to workplace equality has become a difficult one to navigate. No one can safely rely upon the strategies developed in the sixties and seventies to integrate workplaces. Employers face legal and political challenges both for failing to diversify their workplaces and for diversity efforts to overcome that failure. Civil rights and women's rights advocates battle to hold on to the litigation victories of the past,¹ even as they acknowledge judicial remedies' shrinking availability and limited efficacy in addressing many aspects of current-day equality. Anti-discrimination regulators contend with inadequate resources to carry out their traditional enforcement activities, as well as uncertainty about their appropriate role in addressing "second generation" forms of bias. Affirmative action is under attack from all sides, as simultaneously polarizing and ineffectual. Courts now convey mixed messages about the necessity and even the legality of employment programs that explicitly take race or gender into account.

Employers, advocates, and regulators are struggling to find a way forward amidst this uncertainty. Educational institutions are a focal point for this struggle. Because of their importance as gateways to citizenship and economic opportunity, they are at the center of controversy over the pursuit of racial and gender equity. Schools and universities have been involved in highly visible legal and political battles about discrimination and affirmative action. University administrators and faculty "change agents" face the daunting task of shepherding an institutional change process. Lawyers representing both universities and faculty have been called upon to guide diversity initiatives through this legal thicket. Advocates and legislators are looking for ways to improve public agencies' effectiveness in prompting universities to diversify their faculties.

Those on the front line must figure out how to achieve inclusive institutions when the problems causing racial and gender under-participation are structural, and they must do this under conditions of considerable legal ambiguity. They have learned that studies alone do not produce significant change, nor does providing support or legal protection for individual women and people of color. Workplace equality is achieved by connecting inclusiveness to core institutional values and practices. This is a process of ongoing institutional change. It involves identifying the barriers to full participation and the pivot points for removing those barriers and increasing participation. Those involved in this work must be able to

¹ See, e.g., The Civil Rights Coalition for the 21st Century, <http://www.civilrights.org/campaigns/index.html> (last visited Apr. 19, 2006) (documenting the campaigns and publications mobilizing efforts to restore civil rights).

articulate why under-participation is a problem that warrants sustained public attention. They must also find ways to locate responsibility for achieving inclusiveness with those in a position to have an impact.

This challenge calls for new normative frameworks to orient and justify diversity initiatives. These frameworks have to be sufficiently capacious to involve crucial stakeholders and encourage experimentation. Their implementation requires creative strategies, tools, and even new institutions that can jumpstart and sustain meaningful reform. To survive and thrive, these frameworks and strategies must also avoid the legal vulnerability plaguing racial or gender exclusive programs. Achieving workplace equality requires expanding beyond the anti-discrimination paradigm that has shaped intervention over the last thirty years.

This Article develops a framework and methodology for pursuing inclusive institutions and for building the architecture to sustain the practice of inclusiveness. A crucial step in this work is the move to institutions as the focus of analysis and intervention (as compared to the more conventional emphasis on individuals, groups, or policy). Interventions aimed at institutional practice have traction to improve the conditions shaping individuals' experiences and to connect local experimentation to national networks. Institutions, such as universities and their constituent departments, organize individuals' decision making and activities. They shape how individuals participate in their workplace, and they manage the relationship of individuals to the broader profession and society. They often operate within a network of similar institutions, such as other universities, disciplines, and professional associations. Institutions are both lasting and permeable. They mediate how norms and policies are translated into practice. They are an important location for cultural meaning-making and for producing sustainable change.

This Article offers three related ideas in service of advancing workplace equity through institutional transformation. First, it develops the norm of institutional citizenship as a justification and goal for diversity initiatives. The project of achieving inclusive institutions is not only about eliminating discrimination or even increasing the representation of previously excluded groups. It is about creating the conditions enabling people of all races and genders to realize their capabilities as they understand them. All institutional citizens should be able to realize their potential and participate fully in the life of the institution. In addition, universities are themselves institutional citizens of a broader polity, occupying a crucial location where public citizenship is expressed and playing a central role in advancing important social values and achieving institutional legitimacy. The idea of institutional citizenship knits together the aspiration of individuals' full participation within their institutional environments and institutions' engagement with a larger array of

democratic and social values.

Race and gender analysis comes into play in advancing both senses of institutional citizenship. The goal of full institutional citizenship entails identifying and removing institutional barriers that arbitrarily thwart the participation of women, people of color, and other excluded groups. Taking steps to eliminate those institutional barriers often advances the more general goal of enabling full and fair participation, even as it also focuses attention on the circumstances particular to racial or gender exclusion. This process entails assessing university practices that determine who participates in the work of the institution. This inquiry in turn fosters consideration of whether and how these decisions advance core institutional goals and values. Democratic legitimacy and demographics of the labor market require that women and people of color participate in framing the university's definition of its mission and in its provision of future researchers, leaders, and citizens. The pursuit of full institutional citizenship connects the project of inclusiveness to universities' core mission of advancing knowledge and preparing the future citizens and leaders of a diverse polity to address complex problems and entrenched injustices. This framework also connects the goal of inclusiveness with overarching values of the institution and thus mainstreams gender and racial inclusion as a value. It offers an equality framework that can withstand legal scrutiny and gives institutional meaning to the Supreme Court's embrace of citizenship and democratic legitimacy values as justifications for pursuing diversity in *Grutter v. Bollinger*.²

Second, the Article develops new institutional roles to energize the pursuit of institutional citizenship. I call these actors "organizational catalysts." Organizational catalysts act as information entrepreneurs and bridge builders at pivot points that can leverage change. The need for their role stems from the institutional underpinnings of persistent bias. Disparities are the result of cumulative disadvantage in everyday interactions operating across the spectrum of institutional life. Women and people of color face cognitive biases in evaluation, exclusion from informal networks, and under-inclusive definitions of success. Participants in decision making are often unaware of these dynamics. Full participation in the academy requires a process of institutional attentiveness across the spectrum of decisions that ultimately determine whether women and men of all races will have the opportunity to thrive, succeed, and advance. This institutional attentiveness can be developed by building the organizational catalyst role into the architecture of a change initiative. This is achieved by creating institutional roles that place people with knowledge, influence, and credibility in positions to influence practice at pivotal locations where

² 539 U.S. 306, 331 (2003).

gender and racial biases operate.

Finally, the Article illustrates the role of institutional intermediaries in sustaining and providing accountability for this institutional change process. Institutional intermediaries are public or quasi-public organizations that leverage their position within preexisting communities of practice to foster change and provide meaningful accountability. Instead of relying on the direct threat of judicial sanctions, institutional intermediaries use their ongoing capacity-building role within a particular occupational sector to build knowledge (through establishing common metrics, information pooling, and networking), introduce incentives (such as competition, institutional improvement, and potential impact on funding), and provide accountability (including grass roots participation and self-, peer- and external evaluation).

The springboard for this new paradigm is a case study of an innovative public initiative designed to increase the participation of women in academic science. The case study features the interrelationships of three key stakeholders in these change initiatives: university change agents, public agencies, and lawyers. The National Science Foundation (“NSF”) is the central public intermediary in this case study, and its strategy demonstrates a new form of effective public regulatory activity. NSF is an independent federal agency that “promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.”³ It uses its granting power to foster the development of linked communities of practice that are experimenting with ways to bring about institutional change. First, NSF mainstreams diversity as a value for all grant applicants by including the “broader impacts of a proposed activity” as one of its two merit criteria for evaluating grant proposals, including how well the proposed activity “broaden[s] the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.).”⁴ Second, NSF oversees a program called ADVANCE, a

³ Nat’l Sci. Found., NSF 05-584, ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers, Program Solicitation 15 (2005), available at <http://www.nsf.gov/pubs/2005/nsf05584/nsf05584.pdf> [hereinafter 2005 Program Solicitation]. The National Science Foundation was created by the National Science Foundation Act of 1950 to “promote the progress of science” and “advance the national health, prosperity, and welfare.” 42 U.S.C. §§ 1861 – 1887 (2000) (amended 2002). About the National Science Foundation, <http://www.nsf.gov/od/lpa/news/publicat/nsf04009/intro/start.htm> (last visited Apr. 19, 2006). NSF funds research and education through grants and cooperative agreements with universities and colleges, school systems, business, informal science associations, and other research organizations. For a description of NSF, see *id.* NSF’s website reports that the agency has an annual budget of about 5.5 billion dollars and funds approximately 20 percent of all federally supported basic research conducted by America’s colleges and universities. NSF At A Glance, <http://www.nsf.gov/about/glance.jsp> (last visited Feb. 26, 2006) (“In many fields such as mathematics, computer science and the social sciences, NSF is the major source of federal backing.”).

⁴ Notice from Rita R. Colwell, Director, National Science Foundation, to Presidents of Universities and

foundation-wide effort to increase the participation and advancement of women in academic science and engineering careers.⁵ Through ADVANCE, NSF provides Institutional Transformation Awards to institutions submitting innovative and comprehensive proposals “to catalyze change that will transform academic environments in ways that enhance the participation and advancement of women in science.”⁶ Third, NSF coordinates and stimulates knowledge sharing about institutional transformation among ADVANCE grantees and their peer institutions. NSF represents a different model of public regulation, one that targets a particular occupational sector and that emphasizes capacity building rather than compliance.

The University of Michigan (“UM”) provides the context for analyzing the mechanisms fostering institutional inclusiveness. UM is one of nineteen institutions currently funded by NSF to pursue institutional transformation under ADVANCE. It is worth studying because its approach emphasizes systemic change and has already produced meaningful and measurable outcomes. Through its ADVANCE grant, UM has developed a series of initiatives that remove barriers to participation at key decision points (both individual and institutional) in order to increase women’s inclusion and advancement as faculty. UM also developed an ongoing learning and change process by cultivating “organizational catalysts.” Its initiative institutionalized new roles to harness the knowledge and social capital of individuals with a track record for effective problem solving.⁷

Various quantitative and qualitative measures indicate that UM ADVANCE has already produced significant positive effects for women scientists and for their departments. These effects are seen in the form of hiring and demographic shifts; process, policy, and role changes; and increased awareness, understanding, and commitment at multiple levels of the institution. The percentage of women in engineering, the medical school, and the natural sciences division of arts and sciences increased from thirteen percent in 2001 to thirty-nine percent in 2004. An NSF review panel of six external auditors reported an “increased hiring of women scientists and engineers in a number of departments, with some hiring women for the first time in many years.”⁸ The result is an increase

Colleges and Heads of Other National Science Foundation Grantee Organizations, Merit Review Criteria (Sept. 20, 1999), available at <http://www.nsf.gov/pubs/1999/iin125/iin125.html> [hereinafter Merit Review Criteria].

⁵ 2005 PROGRAM SOLICITATION, *supra* note 3, at 1.

⁶ *Id.* at 5.

⁷ See *infra* Part III.A.

⁸ LOTTE BAILYN ET AL., UNIVERSITY OF MICHIGAN, NSF ADVANCE PROGRAM SITE VISIT SEPT. 19 - 24, 2004 1 (2004), available at <http://sitemaker.umich.edu/advance/files/sitevisit.pdf> [hereinafter SITE VISIT REPORT].

in the number of departments moving from “token” representation of women (defined as less than eighteen percent of tenure track faculty) to “minority” representation (eighteen to thirty-six percent), and the NSF review panel noted that this shift “may be of significant impact in improving the climate for women in those departments.”⁹

Finally, lawyers and other compliance actors are facilitating the implementation of faculty diversity programs that operate within the parameters set forth in *Grutter v. Bollinger* and *Gratz v. Bollinger*.¹⁰ NSF’s general counsel and other lawyers are involved in helping design programs that offer alternative ways of addressing structural exclusion and promoting diversity. Some of these programs may not even trigger strict scrutiny because they make structural improvements that benefit everyone or that boost overall recruitment and retention. Some lawyers are redefining their role as more “constitutional”: helping universities establish processes and governance systems that are accountable and principled in the way they pursue inclusiveness. Some advocates and affirmative action officers are helping to design and disseminate successful initiatives as policy. These roles for law and lawyers avoid some of the pitfalls constraining law’s effectiveness under more traditional anti-discrimination and affirmative action approaches.

Documenting experiments that institutionalize ongoing learning and change provides a small but significant response to skeptics who question the efficacy of data-based collaboration and problem solving. If meaningful change has happened, that shows that such change *can* happen. Case study analysis also permits a critical assessment of whether and when institutional transformation operates as intended. Close examination of an ongoing initiative offers an opportunity to observe and theorize about the mechanisms that enable or discourage learning, empowerment, participation, and accountability.¹¹

Finally, this study provides a response to the criticisms prompted by my earlier work, which proposed structural approaches to second generation employment discrimination. Scholars have argued that judicially-induced problem solving would produce purely symbolic efforts

⁹ *Id.* at 6.

¹⁰ In *Grutter v. Bollinger*, 539 U.S. 306 (2003), the Supreme Court determined that the admissions plan of the University of Michigan Law School did not violate equal protection, based on a holding that diversity is a compelling interest that can justify the narrowly tailored use of race in selecting applicants for admission to public universities. In *Gratz v. Bollinger*, 539 U.S. 244 (2003), the Court held that a policy automatically distributing points to applicants from underrepresented groups does not provide adequately individualized consideration, and thus is not narrowly tailored to achieving a compelling interest in diversity.

¹¹ For an overview of the value of case studies as a methodology, see generally WHAT IS A CASE? EXPLORING THE FOUNDATIONS OF SOCIAL INQUIRY (Charles C. Ragin & Howard S. Becker eds., 1992).

to avoid liability without making meaningful change.¹² They have questioned whether courts are willing to hold employers accountable for implementing effective, internally-managed problem solving.¹³ This Article offers a response to these criticisms of court-centered approaches. It documents how new public intermediaries are in fact providing meaningful accountability, prompting institutional transformation, and producing measurable results. It analyzes the mechanisms by which accountable change can occur and takes fuller account of the role of mobilization in stimulating ongoing change. It also presents an effective and legitimate role for administrative agencies as public intermediaries in race and gender policy.

Part I sketches the three dilemmas facing institutional change participants, lawyers, and regulators involved in gender equity projects. Part II provides an overview of NSF ADVANCE as a public intervention and the institutional transformation it has spawned, using UM as a case study. Part III analyzes the mechanisms at work in this innovative scheme, showing how they solve the three remedial dilemmas described in Part I. Part IV considers the implications of this analysis for workplace equity and for designing public interventions to address complex problems.

I. THE DILEMMAS OF UNIVERSITY DIVERSITY INITIATIVES¹⁴

Hundreds of studies have documented women's under-participation in university faculties.¹⁵ The problem is most dramatic in the sciences. "Despite advances made in the proportion of women choosing to pursue science and engineering careers, women continue to be significantly underrepresented in almost all science and engineering fields, and constitute only approximately 22% of the science and engineering workforce at large . . . [and] less than 20% of science and engineering faculty in 4-year colleges and universities."¹⁶ Women's under-participation

¹² See, e.g., Kimberly D. Krawiec, *Cosmetic Compliance and the Failure of Negotiated Governance*, 81 WASH. U. L.Q. 487 (2003); William S. Laufer, *Corporate Liability, Risk Shifting, and the Paradox of Compliance*, 52 VAND. L. REV. 1343 (1999); Michael Selmi, *The Price of Discrimination: The Nature of Class Action Employment Discrimination Litigation and its Effects*, 81 TEX. L. REV. 1249 (2003).

¹³ See Samuel R. Bagenstos, *The Structural Turn and the Limits of Antidiscrimination Law*, 94 CAL. L. REV. (forthcoming 2006) (on file with the Harvard Journal of Law & Gender).

¹⁴ Much of the research summarized in this section focuses on gender, largely due to NSF ADVANCE's gender focus, which in turn determined the parameters of this study. However, other groups face similar (though not identical) problems of under-participation, and many of the institutional remedies discussed here in the context of gender apply to addressing racial under-participation.

¹⁵ See National Academy of Science, *Gender Differences in Careers of Science, Engineering, and Mathematics Faculty*, http://www7.nationalacademies.org/cwse/gender_faculty_links.html (last visited Apr. 19, 2006) [hereinafter *Gender Differences*] (providing links to numerous institutional reports on gender equity and climate within the university setting).

¹⁶ Nat'l Sci. Found., NSF 02-121, *ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers*, Program Solicitation 1 (2002), available at

has persisted in the face of periodic efforts by faculty to mobilize change and despite an elaborate system of public regulations and laws aimed at eliminating discrimination and under-utilization.¹⁷ This section explains the dilemmas that have limited the efficacy of these prior diversity initiatives.

A. Dilemma 1 -- Sustaining an Effective Faculty Diversity Initiative

Consider the following: A prominent university has just issued a report documenting chronic under-participation of women and people of color on its faculty.¹⁸ In response to the faculty's collective call for action, the university's president appoints a respected professor to lead a faculty diversity initiative. The diversity leader convenes a meeting of deans and department chairs to get their reactions to the report and to plan a course of action. The ensuing discussion is fraught with tension. Every speaker expresses support for the goal of diversifying the faculty, but when faced with the question of how to reach that goal, many throw up their hands in frustration. Some chairs say that they have been trying for years to hire women and people of color, and they do not know what else to do. Their search processes have not produced a diverse pool of candidates, and when they do make offers to women and people of color, those candidates often turn them down. Others question the level of diversity commitment at the top, as well as their own department's willingness to take the steps necessary to attract successful diverse faculty or to fully integrate incumbent women and people of color into the department. A third group focuses on the arguments made by powerful members within their department that the diversity initiative will inevitably operate at the expense of high academic standards. They argue that diversity appointments which are perceived as the result of de facto quotas produce

<http://www.nsf.gov/pubs/2002/nsf02121/nsf02121.pdf> [hereinafter 2002 Program Solicitation]. At MIT, for example, the small number of women faculty in the School of Science (fifteen tenured women vs. 197 tenured men in 1994) had remained unchanged for at least ten and possibly twenty years. Nancy Hopkins et al., *The Status of Women Faculty at MIT: An Overview of Reports from the Schools of Architecture and Planning; Engineering; Humanities, Arts, and Social Sciences; and the Sloan School of Management* (2002), available at <http://web.mit.edu/faculty/reports/overview.html> [hereinafter MIT Overview].

¹⁷ See *infra* Part I.B.

¹⁸ See, e.g., Duke University: STEERING COMMITTEE FOR THE WOMEN'S INITIATIVE, *WOMEN'S INITIATIVE REPORT* (2003), available at http://www.duke.edu/womens_initiative/docs/Womens_Initiative_Report.pdf [hereinafter DUKE REPORT]; Princeton University: VIRGINIA ZAKIAN ET AL., *REPORT OF THE TASK FORCE ON THE STATUS OF WOMEN FACULTY IN THE NATURAL SCIENCES AND ENGINEERING AT PRINCETON* (2003), available at <http://www.princeton.edu/pr/reports/sciencetf/sciencetf-9-19-03.pdf>; Columbia University: COMMISSION ON THE STATUS OF WOMEN, *ADVANCEMENT OF WOMEN THROUGH THE ACADEMIC RANKS AT THE COLUMBIA UNIVERSITY GRADUATE SCHOOL OF ARTS AND SCIENCES: WHERE ARE THE LEAKS IN THE PIPELINE?* (2001), available at http://www.columbia.edu/cu/senate/annual_reports/01-02/Pipeline2a_as_dist.doc.pdf [hereinafter COLUMBIA COMMISSION].

resistance and backlash. Those comments in turn prompt a heated discussion about the adequacy of current selection processes and criteria.

This scenario, which is occurring in many universities around the country, highlights the challenges facing those on the front lines of institutional change around issues of gender and racial equity.¹⁹ They must figure out how to achieve inclusive institutions when the problems causing racial and gender under-participation are not amenable to change by fiat. Much of this persistent inequality is structural in nature; it results from institutional and cultural dynamics that reproduce patterns of under-participation and exclusion.²⁰ Research shows that the “glass ceiling” in academia is kept in place by everyday interactions occurring across the entire spectrum of faculty life.²¹ At each step of the continuum from graduate student to full professor, women face small differences in treatment, and these small disadvantages accumulate to produce large disparities in status and opportunity.²² These differences in treatment often go unnoticed. They reflect unconscious biases reinforced by cultural patterns and shared by men and women alike.²³ Within highly informal, unexamined, and poorly managed decision making processes, these biases operate unchecked at many pivotal points of academic advancement.²⁴ Women also face structural barriers to full participation, such as work-family policies, under-inclusive social networks, and narrow indicators of academic promise.²⁵ Organizational culture preserves these exclusionary

¹⁹ For example, Columbia, MIT, and Harvard have recently conducted studies documenting the status of faculty women, and have appointed faculty to oversee diversity initiatives. COLUMBIA COMMISSION, *supra* note 18; MIT OVERVIEW, *supra* note **Error! Bookmark not defined.**; Harvard University: TASK FORCE ON WOMEN FACULTY, REPORT OF THE TASK FORCE ON WOMEN FACULTY 1, 11 - 12 (2005), available at <http://www.news.harvard.edu/gazette/daily/2005/05/women-faculty.pdf> (providing a list and description of university change agents appointed to oversee faculty) [hereinafter HARVARD TASK FORCE REPORT]. See also Gender Differences, *supra* note **Error! Bookmark not defined.** (linking to various gender faculty studies in Research I universities).

²⁰ See Susan Sturm, Second Generation Employment Discrimination: A Structural Approach, 101 COLUM. L. REV. 458, 460 (2001).

²¹ For an excellent synthesis of the literature, see VIRGINIA VALIAN, WHY SO SLOW? THE ADVANCEMENT OF WOMEN (1999).

²² *Id.* at 3 - 6; Jonathan R. Cole & Burton Singer, *A Theory of Limited Differences: Explaining the Productivity Puzzle in Science*, in THE OUTER CIRCLE: WOMEN IN THE SCIENTIFIC COMMUNITY 277 (Harriet Zuckerman, Johnathan R. Cole & John T. Bruer eds., 1991).

²³ See VALIAN, *supra* note 21, at 103 - 07. These studies and others have also been synthesized in a PowerPoint presentation by scientists and mathematicians in STRIDE, which is posted on the University of Michigan's ADVANCE website. See STRIDE Presentation 2004, http://www.umich.edu/~advproj/stridepresents_files/frame.htm (last visited Feb. 26, 2006).

²⁴ See, e.g., HENRY ETZKOWITZ, CAROL KEMELGOR & BRIAN UZZI, ATHENA UNBOUND: THE ADVANCEMENT OF WOMEN IN SCIENCE AND TECHNOLOGY (2000); Cara C. Bauer & Boris B. Baltes, *Reducing the Effects of Gender Stereotypes on Performance Evaluations*, 47 SEX ROLES 465 (2002).

²⁵ See Gerhard Sonnert & Gerald Holton, *Career Patterns of Women and Men in the Sciences*, 84 Am. Sci. 63, 66 - 70 (1996). See also Comm. on Women in Sci. and Eng'g et al., From Scarcity to Visibility: Gender Differences in the Careers of Doctoral Scientists and Engineers 218 - 219 (J. Scott Long ed., 2001) (referring to the hidden structural elements producing gender inequality). For a discussion of the

dynamics, without ever inviting scrutiny of their validity.²⁶

Women's full participation in the academy cannot be achieved without examining these multi-level decisions, cultural norms, and underlying structures.²⁷ Change thus requires a process of institutional mindfulness. This means enabling careful attention to decisions that ultimately determine whether women and men of all races will have the opportunity to thrive, succeed, and advance. Research shows that self-consciousness about the processes, criteria, and justifications for employment decision making minimizes the expression of cognitive bias.²⁸ Institutional mindfulness also requires the capacity for ongoing learning -- about problems revealed by examining patterns of decision making over time, as well as about creative ways of addressing those problems, advancing participation, and improving academic quality. Finally, it entails introducing incentives for improving inclusiveness and excellence into ongoing governance systems.²⁹

Universities' decentralized administrative structure complicates efforts to achieve institutional mindfulness. Power is highly distributed in academia, and change is often difficult to achieve. Decision making power resides in departments with considerable autonomy and weak performance metrics.³⁰ This fragmented authority structure limits the power of any one

role of structural dynamics and culture in sustaining gender inequality, see generally Joyce Fletcher & Robin Ely, *Introducing Gender: Overview*, in *Reader in Gender, Work and Organization* 3 (Robin J. Ely, Erica Gabrielle Foldy & Maureen A. Scully eds., 2003).

²⁶ Lotte Bailyn, *Academic Careers and Gender Equity: Lessons Learned from MIT*, 10 *GENDER WORK & ORG.* 137, 143 - 45 (2003); Cathy A. Trower, Presentation at the NSF ADVANCE National Conference: Assessing & Evaluating Impact (Apr. 20, 2004), available at http://www.advance.gatech.edu/2004conf/3a_trower.ppt. The absence of systematic inquiry to identify recurring problems is not unique to gender issues. Organizational and legal theorists have written extensively about the tendencies in organizations not to reveal or analyze problems, particularly those involving underlying assumptions or entrenched interests. See CHRIS ARGYRIS & DONALD A. SCHÖN, *ORGANIZATIONAL LEARNING: A THEORY OF ACTION PERSPECTIVE* 46 - 47 (1978) (describing the organizational dynamics that produce limited learning systems); KARL E. WEICK, *MAKING SENSE OF THE ORGANIZATION* 44 (2001) (describing superstitious learning, distorted communications, delayed feedback, and difficulties in learning from prior actions); Kenneth Bamberger, *Blurring Boundaries: Regulated Firms, Discretion, and Accountability in the Administrative State* (2004) (unpublished manuscript, on file with the Harvard Journal of Law & Gender) (summarizing the organizational theory literature on the dynamics producing failures of information flow and accountability).

²⁷ Robin J. Ely & Debra E. Meyerson, *Theories of Gender in Organizations: A New Approach to Organizational Analysis and Change*, 22 *RES. IN ORG. BEHAV.* 103, 135 - 37 (2000).

²⁸ William T. Bielby, *Minimizing Workplace Gender and Racial Bias*, 29 *CONTEMP. SOC.* 120, 123 - 24 (2000); Susan T. Fiske, *Intent and Ordinary Bias: Unintended Thought and Social Motivation Create Casual Prejudice*, 17 *SOC. JUST. RES.* 117 (2004).

²⁹ Sturm, *supra* note 20, at 519 (noting the importance of functionally integrated problem solving regimes).

³⁰ ROBERT BIRNBAUM, *HOW COLLEGES WORK: THE CYBERNETICS OF ACADEMIC ORGANIZATION AND LEADERSHIP* 16 - 17 (1988); Trower, *supra* note 26. Universities have been described by organizational theorists as "loosely coupled" in the sense that they consist of "distinct bundles of knowledge that have their own internal logics and an inherent bent toward autonomy." J. Douglas Orton & Karl E. Weick, *Loosely Coupled Systems: A Reconceptualization*, 15 *ACAD. MGMT. REV.* 203, 206 - 07 (1990) (quoting

level or actor to accomplish institutional change, including those at the top.³¹ It also contributes to the perception of powerlessness to bring about change:

The Provost says: I don't have the power. It's the Deans.

The deans say: I don't have the power. It's the chairs.

The chairs say: I don't have the power. It's the faculty.

The faculty says: There is no leadership on this issue!³²

For decades, universities have produced reports documenting women's under-participation and proposing solutions, but the data show limited progress even at universities that have conducted these studies.³³ The information revealed through these reports has not produced a dramatic institutional response.

University change agents occupy a difficult and pivotal position. They must figure out how to use information to promote change and to motivate diverse constituencies to assume responsibility for addressing the barriers to women's participation within their own domain. In short, they need, but often lack, conceptual frameworks, roles, and strategies for institutional learning and change.

B. Dilemma 2 -- Walking the Legal Tightrope

Flash forward six months from the meeting announcing the university diversity initiative. A task force of faculty and administrators has been hard at work developing programs designed to increase the participation of diverse faculty at all levels of the university. Several task force members have asked the university general counsel for her blessing of their proposals. The general counsel knows that the university faces

B.R. CLARK, *THE HIGHER EDUCATION SYSTEM: ACADEMIC ORGANIZATION IN CROSS-NATIONAL PERSPECTIVE* 16 (1983).

³¹ The words of one dean interviewed for this study sum up this feeling of individual powerlessness: "There is a variety of procedures for producing the status quo. It is frustrating to sit [where you have formal power] and feel disempowered to intervene." Interview with Senior Academic Officer, in New York, N.Y. (Dec. 8, 2004). Furthermore, Lawrence Mitchell uses the university context to illustrate the operation of "structural holes." Structural holes occur because people are socially organized into distinct networks. "When two networks are distinct and lack ties to each other, the gap between them is a structural hole." Mitchell describes how these structural holes can create strategic opportunities to block or enable change. Lawrence E. Mitchell, *Structural Holes, CEOs, and the Missing Link in Corporate Governance* 11 Pub. Law & Legal Theory, Working Paper No. 77, 2003), available at <http://ssrn.com/abstract=467980> (scroll down to download a free copy of the paper from the SSRN Electronic Paper Collection).

³² Virginia Valian, Remarks at the NSF ADVANCE National Conference (Apr. 19, 2004).

³³ See UNIVERSITY OF MICHIGAN, NSF-ADVANCE PROPOSAL SUMMARY (2002) C-2 to C-4, available at <http://www.umich.edu/~advproj/proposal.pdf> [hereinafter PROPOSAL SUMMARY] (documenting the slow rate of change, notwithstanding numerous prior studies of climate, work-family issues, and other gender issues).

simultaneous pressure from opposite directions. Faculty and students have taken collective action to obtain institutional diversity commitments from the leadership. This mobilization has been fueled by the recent study documenting the university's lack of progress. The president has also felt competitive pressure from peer institutions that have already undertaken ambitious initiatives to attract a more diverse faculty. At the same time, conservative legal organizations have seized on the political vulnerability and legal uncertainty surrounding affirmative action to threaten legal action against universities with racial- or gender-exclusive programs.

This scenario exemplifies the dilemma facing university general counsel attempting to translate the Supreme Court's recent affirmative action decisions into working principles and parameters of lawful diversity practice. In *Grutter v. Bollinger*, the Supreme Court gave its imprimatur to "student body diversity [as] a compelling interest that can justify the use of race in university admissions."³⁴ The case advances principles of citizenship and democratic legitimacy as a basis for pursuing institutional inclusiveness.³⁵ But universities face considerable uncertainty in *Grutter's* wake. The Court has yet to clarify the applicability of the diversity justification to employment decisions.³⁶ The *Grutter* opinion also requires universities to consider "workable race-neutral alternatives that will achieve the diversity the university seeks," but it does not define what "race neutral" means in this context.³⁷ As Reva Siegel has shown, "color blindness discourse cannot itself generate a positive account of what race-neutrality would look like in practice."³⁸ In addition, the Supreme Court has yet to clarify the relationship between *Grutter* and its companion case, *Gratz v. Bollinger*, which reasserts the principle that equal protection and anti-discrimination laws limit the use of racial and gender classifications in admissions decision making.³⁹ In *Gratz*, the Supreme Court invalidated

³⁴ 539 U.S. 306, 325 (2003).

³⁵ *Id.* at 332 ("Effective participation by members of all racial and ethnic groups in the civic life of our Nation is essential if the dream of one Nation, indivisible, is to be realized.").

³⁶ Some lower courts have applied *Grutter* in the employment context to uphold race-conscious affirmative action. See *Petit v. City of Chicago*, 352 F.3d 1111, 1114 (7th Cir. 2003), *cert. denied*, 541 U.S. 1074 (2004). Prior to *Grutter*, the Third Circuit held that diversity was not a compelling interest justifying the adoption of an affirmative action plan. *Bd. of Educ. of the Twp. of Piscataway v. Taxman*, 91 F.3d 1547, 1567 (1996). However, the reasoning of that decision was subsequently rejected in *Grutter*.

³⁷ *Grutter*, 539 U.S. at 339.

³⁸ Reva B. Siegal, *Discrimination in the Eyes of the Law: How "Color Blindness" Discourse Disrupts and Rationalizes Social Stratification*, 88 CAL. L. REV. 77, 78 (2000).

³⁹ *Gratz v. Bollinger*, 539 U.S. 244, 270 (2003). The Equal Protection Clause of the Fourteenth Amendment provides that "no State shall . . . deny to any person within its jurisdiction the equal protection of the laws." U.S. CONST. amend. XIV, § 1. Racial classifications are subject to strict scrutiny; they may be used only if they employ "narrowly tailored measures that further compelling governmental interests." *Adarand Constr., Inc. v. Pena*, 515 U.S. 200, 227 (1995). Gender classifications are subject to intermediate scrutiny; they must "serve[] important governmental

UM's undergraduate admissions program because the automatic assignment of points to members of particular racial groups failed to provide for the individualized consideration of each applicant, made race a dispositive factor in every case, and thus was not narrowly tailored to achieve the asserted compelling interest in diversity.⁴⁰ Programs that limit participation only to women or people of color are thus legally vulnerable. Conservative legal advocacy groups and the United States Justice Department have challenged university fellowship programs reserved for minority group members or women, some of which receive support from NSF, and many universities have responded by discontinuing race- or gender-exclusive programs.⁴¹ Yet, lower courts have upheld plans that take race and gender into account to eliminate bias, broaden the applicant pool, and provide incentives to hire faculty who will contribute to overall diversity.⁴²

Some general counsel have advised extreme caution in the wake of this legal uncertainty.⁴³ "Do not even mention the word 'race' or 'gender' in your programs," they tell their clients.⁴⁴ Any mention of race may invite a legal challenge, which is likely to trigger strict scrutiny of their programs, which in turn can be difficult to satisfy. As one former senior university administrator put it, "The lawyers took the stance that you can't do many things, throttle this, don't mention this. The word got out to the grassroots

objectives," and "the discriminatory means employed [must be] substantially related to the achievement of those objectives." *United States v. Virginia*, 518 U.S. 515, 533 (1996) (quoting *Miss. Univ. for Women v. Hogan*, 458 U.S. 718, 724 (1982)).

⁴⁰ See *Gratz*, 539 U.S. at 272. For a discussion of the state of the law governing the use of race and gender in faculty employment discrimination, see Jonathan R. Alger, *As the Workplace Turns: Affirmative Action in Employment*, Fall 2005, at 8, available at http://generalcounsel.rutgers.edu/documents/facultydiversity.outline.oct2005_001.doc.

⁴¹ See Peter Schmidt, *Southern Illinois U. Agrees to Justice Department Demands to Open Programs to All Races*, CHRON. HIGHER EDUC., Feb. 9, 2005, available at <http://chronicle.com/daily/2006/02/2006020901n.htm> (last visited Mar. 1, 2006) (subscription required; copy on file with the Harvard Journal of Law & Gender); Peter Schmidt, *Justice Department Is Expected to Sue Southern Illinois U. Over Minority Fellowships*, CHRON. HIGHER EDUC. (Wash., D.C.), Nov. 25, 2005, at A34.

⁴² *McHenry v. Pa. State Sys. of Higher Educ.*, 50 F. Supp. 2d 401, 411 (E.D. Pa. 1999) (finding that the involvement of a state university's Social Equity Office in the hiring process did not violate Title VII, where the office was involved in recruiting a diverse pool of a candidates and encouraging search committees to consider those candidates, but the committee retained the authority to hire the candidate of its choice); *Honadle v. Univ. of Vt. and State Agric. Coll.*, 56 F. Supp. 2d 419, 425 (D. Vt. 1999) ("[A] manifest imbalance that reflects under-representation of women or minorities in traditionally segregated job categories would justify a sex or race-conscious plan."), cited in Alger, *supra* note 40, at 9.

⁴³ Jeffrey Selingo, *Michigan: Who Really Won?*, CHRON. HIGHER EDUC. (Wash., D.C.), Jan. 14, 2005, at A21 ("Colleges' cautious reaction to the Supreme Court's affirmative action decisions may have snatched defeat from the jaws of victory.").

⁴⁴ I have been at several meetings where a general counsel has advised leaders of diversity initiatives to abandon any programs that explicitly address race.

level that everything would stop being implemented.”⁴⁵

This defensive tack puts legal counsel on a collision course with any initiative that explicitly addresses gender and racial under-participation. Such advice would effectively shut down programs that university faculty and administrators view as essential to their mission and that *Grutter* took pains to validate.⁴⁶ Lawyers would prevent the experimentation needed to get at the institutional roots of racial and gender disparities and to create the conditions for full institutional citizenship.

Some lawyers (and their university clients) are searching for norms and strategies that give concrete meaning to the quest for “alternative practices” and still follow through on the commitment to diversifying higher education. They have begun exploring ways to increase diversity through improving the institution’s governance capacity, as well as ways to figure out when race and gender can lawfully factor into decision making. They need equality frameworks that will support the development of inclusive institutions without making race or gender a fixed and exclusive selection criterion.⁴⁷

C. Dilemma 3 – Developing Effective Public Accountability

Consider a third scenario: A group of faculty, experts, advocates, and legislators has begun to strategize about how to increase the effectiveness of public agencies in advancing gender and racial equity in academic science.⁴⁸ Diversity proponents agree that stronger public intervention is needed to sustain commitment to addressing persistent inequality, to develop knowledge about gender bias and its remediation, and to pressure resistant institutions to take the problem seriously. Some argue that increased threats of sanctions will “spur university administrators into action,” and they advocate stepped-up enforcement of Title IX as the best available hammer.⁴⁹ Others, particularly faculty who have been active in gender equity initiatives within their own institutions, have less confidence in coercive enforcement methods to remedy inequality

⁴⁵ Interview with Senior Administrator (June 2, 2004).

⁴⁶ See *Grutter*, 539 U.S. at 332.

⁴⁷ See *Gratz*, 539 U.S. at 270; Alger, *supra* note 40, at 3.

⁴⁸ E-mail to Susan Sturm, Professor of Law and Social Responsibility, Columbia Law School (Dec. 9, 2005, 14:42 EST) (on file with the Harvard Journal of Law & Gender) (concerning a closed-door workshop centered around such equity issues) (specific citation information removed for confidentiality purposes).

⁴⁹ Jeffrey Mervis, *Can Equality in Sports Be Repeated in the Lab?*, 298 SCIENCE 356, 356 (Oct. 11, 2002). Title IX of the Education Amendments of 1972 provides that “no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance.” 20 U.S.C. § 1681(a) (2000).

in academic science.⁵⁰ They worry that an over-emphasis on enforcement will backfire and discourage institutions from identifying problems and experimenting with creative solutions.⁵¹ There is also a substantial question as to whether the subtle and structural dynamics producing women's under-participation satisfy current judicial and administrative definitions of discrimination, particularly in those areas with low female representation in the applicant pool.⁵² Some scientists argue that more collaborative and capacity-building forms of public intervention must form the centerpiece of public regulatory strategy. Advocates and faculty whose gender equity projects have been repeatedly thwarted by institutionalized resistance counter that, without some form of coercive accountability, only the best institutions will improve. They argue that change will be difficult to sustain over time unless universities are accountable in relation to public norms.

The push to rethink public involvement grows out of dissatisfaction with the current regulatory regime's effectiveness in addressing persistent inequality. Title IX compliance efforts have come under increased scrutiny as the result of a Government Accounting Office ("GAO") report prepared at the request of Senators Ron Wyden and Barbara Boxer.⁵³ This report was spurred by a Massachusetts Institute of Technology ("MIT") study documenting persistent disparities and marginalization of women in the sciences and by the significant media coverage that followed in its wake.⁵⁴ The GAO investigation analyzed "what is being done to ensure compliance with Title IX in regard to the sciences."⁵⁵ The report concluded that, among four major agencies responsible for Title IX compliance in the sciences, three agencies reported no compliance review activity. The Department of Education, the agency bearing primary responsibility for Title IX enforcement, had conducted only three compliance reviews

⁵⁰ Mervis, *supra* note 49 (quoting scientists questioning Title IX's effectiveness as a way to diversify academic science).

⁵¹ For a more general discussion of how threats of legal sanctions can discourage efforts to identify problems, see Sturm, *supra* note 20, at 475 - 78.

⁵² See *infra* notes 55 - 59.

⁵³ Senator Ron Wyden, *Title IX and Women in Academics* 15 COMPUTING RES. NEWS 1, 8 (Sept. 2003), available at <http://www.its.caltech.edu/~westclub/TITLEIX.pdf>. For a discussion of the media's role in mobilizing change at MIT, see Bailyn, *supra* note 26.

⁵⁴ *A Study on the Status of Women Faculty in the Sciences at MIT*, THE MIT FACULTY NEWSLETTER (Comm. on Women Faculty in the Sch. of Sci., Cambridge, Mass.), Mar. 1999, available at <http://web.mit.edu/fnl/women/fnl114x.pdf> [hereinafter *MIT Report 1999*].

⁵⁵ Gov't Accountability Office, *Women's Participation in the Sciences has Increased, but Agencies Need to Do More to Ensure Compliance with Title IX* 1 (2004), available at <http://www.gao.gov/new.items/d04639.pdf> [hereinafter GAO Report]. Every federal agency providing financial assistance for educational programs or activities has Title IX compliance responsibilities; the Department of Education's Office of Civil Rights ("OCR") plays a key role because it bears primary responsibility for investigating complaints at educational institutions, including those referred by other federal agencies. *Id.* at 6.

involving the sciences since 1993.⁵⁶

Private lawsuits—the primary mechanism for challenging violations of employment discrimination laws—also have not filled the enforcement gap.⁵⁷ The GAO report found that many women are reluctant to file Title IX complaints.⁵⁸ Studies have shown that many women faculty members are reluctant to initiate discrimination lawsuits against their universities.⁵⁹ They worry about being labeled a whiner, and many are unwilling to risk provoking retaliation or avoidance by their colleagues.⁶⁰ Many women scientists do not even describe the barriers to their success in terms of gender discrimination.⁶¹

In addition, Title VII suits challenging gender disparities in faculty hiring and promotion face serious obstacles.⁶² Both disparate impact

⁵⁶ *Id.* at 11.

⁵⁷ Employment discrimination complaints brought under Title IX grievance procedures are referred to the Equal Employment Opportunity Commission, which does not have authority to enforce Title IX. The EEOC reviews these complaints to see if Title VII applies.

⁵⁸ *Id.* at 10.

⁵⁹ AAUW EDUC. FOUND. & AAUW LEGAL ADVOCACY FUND, *TENURE DENIED: CASES OF SEX DISCRIMINATION IN ACADEMIA* 65 - 66 (2004) [hereinafter *TENURE DENIED*]. This reluctance to bring discrimination complaints has been documented as a more general pattern. See Kristin Bumiller, *Victims in the Shadow of the Law: A Critique of the Model of Legal Protection*, 12 SIGNS 421 (1987); Patricia A. Gwartney-Gibbs & Denise H. Lach, *Workplace Dispute Resolution and Gender Inequality*, 7 NEGOTIATION J. 187, 198 (1991).

⁶⁰ Many plaintiffs report that the professional and personal risks of bringing a lawsuit are equally daunting. Hiring litigation is particularly rare in the academic context because of the fear that bringing a lawsuit will destroy any chance of finding a position in another university. Women who have been denied promotion or tenure, for example, are already in a vulnerable position with respect to a career in academia, and they report that initiating a lawsuit further decreases their possibility of succeeding as a professor in any university. According to plaintiffs in sex discrimination actions, being labeled a “troublemaker” “taints all levels of your professional life” and “makes getting other academic appointments more difficult” because “it’s understood that deans won’t trust you.” *TENURE DENIED*, *supra* note 59, at 68.

⁶¹ *MIT Report 1999*, *supra* note 54, at 10 (“But we, including for a long time, the women faculty themselves, were slow to recognize this [as discrimination]. . . . It did not look like what we thought discrimination looked like.”) Cf. Beth A. Quinn, *The Paradox of Complaining: Law, Humor, and Harassment in the Everyday Work World*, 25 LAW & SOC. INQUIRY 1151 (2000); DAVID M. ENGEL & FRANK W. MUNGER, *RIGHTS OF INCLUSION: LAW AND IDENTITY IN THE LIFE STORIES OF AMERICANS WITH DISABILITIES* 249 - 53 (2003) (arguing that rights are rarely activated through formal claims). Women scientists’ discomfort with labels associating them with gender, discrimination, or feminism could be seen as an example of post feminist consciousness: “the simultaneous incorporation, revision, and depoliticization of many of the central goals of second wave feminism.” Judith Stacey, as quoted in Mary Fainsod Katzenstein, *Feminism Within American Institutions: Unobtrusive Mobilization in the 1980s*, 16 SIGNS 27, 32 (1990).

⁶² 42 U.S.C. § 2000(e) (2000). See generally *TENURE DENIED*, *supra* note 59, at 65 - 66; Elizabeth Bartholet, *Application of Title VII to Jobs in High Places*, 95 HARV. L. REV. 945, 958 - 59 (1982); Susan L. Pacholski, *Title VII in the University: The Difference Academic Freedom Makes*, 59 U. CHI. L. REV. 1317 (1992). Title VII is enforced largely through employees’ private actions. The EEOC lacks independent enforcement or rule making authority. It can mediate and conciliate complaints, initiate enforcement litigation, promulgate guidelines, and provide technical assistance. The EEOC does not currently track its cases by industry, so there is no data on the number of charges filed or processed involving university faculty. GAO REPORT, *supra* note 55, at 10.

(discrimination consisting of using practices or criteria that disproportionately exclude women without a showing of business necessity) and systemic disparate treatment (discrimination involving a pattern and practice of gender based disparate treatment) require a showing of statistically significant disparities based on gender.⁶³ Academia is characterized by small departments, infrequent hires, and specialized faculty who may not be sufficiently comparable to be aggregated into a common pool.⁶⁴ Additionally, employment decisions tend to be decentralized to the department level and are based on a complex and variable set of criteria that seem to call for a tailored decision making process. Finally, courts often defer to the expertise and judgments of academic decision makers.⁶⁵

These factors make it difficult for faculty plaintiffs to prevail using the statistical analyses necessary to establish hiring and promotion discrimination under systemic disparate treatment or disparate impact analysis.⁶⁶ Litigation challenging patterns of decision making within universities primarily involves individual plaintiffs rather than systemic or class litigation, and successful claims generally target well-documented and blatant discrimination.⁶⁷

Affirmative action regulation of faculty hiring has not fared much better. Although most universities have affirmative action officers with responsibility for overseeing compliance with federal anti-discrimination and affirmative action requirements, gender equity proponents have not generally looked to affirmative action administration for leadership in diversifying faculties. It is true that most universities operate under affirmative action requirements for institutions receiving federal funds, established by Executive Order 11246 and enforced by the Office of

⁶³ To establish disparate impact liability, a plaintiff must show that a practice that appears neutral on its face disproportionately excludes protected group members and the defendant has failed to show business necessity for those practices. *Griggs v. Duke Power Co.*, 401 U.S. 424 (1971); Civil Rights Act of 1991, 42 U.S.C. § 1981 (2000). Under *Teamsters v. United States*, a class of plaintiffs may establish a prima facie case of systemic disparate treatment using statistical evidence instead of comparative evidence pertaining to each class member. 431 U.S. 324 (1977).

⁶⁴ See Terry L. Leap, *Tenure, Discrimination, and the Courts* 3 - 4 (1993).

⁶⁵ Courts have been reluctant to place much emphasis on such comparisons because different professors may play distinct roles in a department and because tenure decisions and other employment evaluations in the university context are notoriously complex and subjective. *TENURE DENIED*, *supra* note 59, at 20 - 24; David Y. Loh, Note, *A Critical Analysis of Academic Tenure Decisions: The Disparate Treatment Model Under Title VII Examined*, 12 B.C. THIRD WORLD L.J. 389, 398 - 400 (1992) (discussing the complexity of criteria used to make tenure decisions).

⁶⁶ For an explanation of some of the problems with statistical procedures or assumptions when plaintiffs attempt to demonstrate bias in salaries or promotion rates, see LEAP, *supra* note 64, at 119 - 35.

⁶⁷ See, e.g., *Donnelly v. R. I. Bd. of Governors for Higher Educ.*, 110 F.3d 2 (1st Cir. 1997); *Lipsett v. Univ. of P.R.*, 759 F. Supp. 40 (D.P.R. 1991); *Jew v. Univ. of Iowa*, 749 F. Supp. 946 (S.D. Iowa 1990); *Rosenberg v. Univ. of Cincinnati*, 118 F.R.D. 591 (S.D. Ohio 1987).

Federal Contract Compliance Programs (“OFCCP”) within the Department of Labor.⁶⁸ Universities are required to prepare annual affirmative action reports that provide aggregate demographic data on faculty hiring and promotion, along with every other job group.⁶⁹

However, affirmative action has been defined and implemented in ways that limit its impact on the faculty hiring and promotion process.⁷⁰ One limitation concerns the power of the officials charged with implementing affirmative action requirements. Many universities have appointed professional administrators to carry out their legal obligations. These administrators typically meet reporting requirements, handle discrimination grievances, and conduct training. Frequently, affirmative action officers have backgrounds in law or human resource management and are not members of the faculty or senior administrators with high-level authority to review faculty appointments.⁷¹ Because hiring and promotion decisions rest with the tenured and tenure-track faculty in the relevant department, affirmative action officers are not viewed by faculty as legitimate participants in the faculty appointments process.⁷²

⁶⁸ Executive Order 11246 requires all federal contractors to take “affirmative action” to end discrimination in employment. 30 Fed. Reg. 12,319 (Sept. 24, 1965). Executive Order 11375 expanded the affirmative action requirements to include women. 32 Fed. Reg. 14,303 (Oct. 17, 1967). The OFCCP is charged with enforcing these executive orders by requiring employer reporting, self-analysis, and affirmative action plans and by conducting compliance reviews.

⁶⁹ The principle components of an acceptable Affirmative Action Plan (“AAP”) are: (1) a workforce analysis; (2) a utilization analysis that, in turn, includes a definition of job groups and an availability analysis; (3) problem identification; and (4) a plan for implementation of pro-active measures to remedy identified problems. U.S. DEP’T OF LABOR, EMPLOYEE STANDARDS ADMIN., OFFICE OF FED. CONTRACT COMPLIANCE PROGRAMS, FEDERAL CONTRACT COMPLIANCE MANUAL (FCCM) 78 (1998) [hereinafter FCCM].

⁷⁰ Stewart Macaulay, *Private Government*, in LAW AND THE SOCIAL SCIENCES 445, 461 (Leon Lipson & Stanton Wheeler eds., 1986) (using the example of affirmative action for women in universities to show how “the structure of a large private government and the existence of social networks cutting across formal boundaries can work together to blunt the effectiveness of regulation.”).

⁷¹ For example, Anthony Walesby, the affirmative action officer at the University of Michigan “spent nearly 10 years as a federal investigator for the U.S. Department of Education’s Office for Civil Rights and the U.S. Equal Employment Opportunity Commission in Chicago and Washington, D.C.” Laurel Thomas Gnagny, *New Office of Institutional Equity Gets an Experienced Leader*, THE UNIV. REC. ONLINE, Oct. 27, 2003, available at http://www.umich.edu/~urecord/0304/Oct27_03/02.shtml. Valerie Hayes, the affirmative action officer at Yale, is trained as a lawyer and social worker and came to the position with prior experience as an equal employment officer. *New Director of Equal Opportunity Office Named*, YALE BULL. & CALENDAR, Feb. 21, 2003, available at <http://www.yale.edu/opa/v31.n19/story1.html>. James Hoyt, an Assistant to the President responsible for developing an effective affirmative action plan at Harvard, is also trained as a lawyer. Profile of James Hoyt at Harvard University, http://ksgfaculty.harvard.edu/james_hoyte (last visited Mar. 16, 2006).

⁷² See Interview with Affirmative Action Officer, (Dec. 8, 2004) (“Affirmative-action offices normally lack influence with the faculty.”); Interview with Affirmative Action Officer (June 3, 2004) (“This can be challenging, because the Dean says, ‘This is mine.’ Offices like mine get marginalized because they don’t have support and sometimes the director is perceived to be an advocate for a particular race, gender, et cetera.”); Clarence G. Williams, *The MIT Experience: Personal Perspectives on Race in a Predominantly White University*, in WHAT MAKES RACIAL DIVERSITY WORK IN HIGHER EDUCATION

Another limitation stems from misalignment of the data reporting mandated by affirmative action regulations with actual hiring and promotion practices. For example, as instructed by federal regulation, universities rely on national census data to define the “Percentage of Minorities and Women Among Those Having Requisite Skills in a Reasonable Recruitment Area,” based on the rationale that faculty searches unfold in a national arena. However, national census data do not usually reflect the subset of the national pool from which most departments actually draw their candidates.⁷³ In addition, information gathered solely for reporting purposes is often unreliable.⁷⁴ Researchers report that data specifically gathered to comply with government requirements is often constructed after the fact and is not regularly updated.⁷⁵ Results are also easily manipulated to show adequate utilization by strategies such as redefining titles to increase the percentage of women or people of color on staff or counting visitors and contract positions.⁷⁶ In the words of one affirmative action official, “the purpose of affirmative action is to avoid an audit by the Government. It is for affirmative action officers and lawyers.”⁷⁷

The quality of the information going to the OFCCP obviously affects the agency’s effectiveness in monitoring compliance with its regulations.⁷⁸ Compliance reviews begin with an examination of the

75, 86 (Frank W. Hale ed., 2004) (“[T]he structure of the operation never seemed right to me—this idea of an assistant who happened to be black, with little if any authority reporting to the vice president in the president’s office.”).

⁷³ UM relies on data from NORC’s “Doctorate Recipients from U.S. Universities” for this analysis. UM Affirmative Action Report at 31.

⁷⁴ Cathy A. Trower, *Assessing and Evaluating Impact*, Remarks at the NSF ADVANCE National Conference (Apr. 20, 2004) (stating that it is “difficult to get the ‘right’ data into play in the ‘right’ venue”); Virginia Valian & Vita Rabinowitz, *Benchmarks: How? Which? Who? Why?*, PowerPoint Presentation at the NSF National Conference, slide 4 (Apr. 20, 2004), available at http://www.advance.gatech.edu/2004conf/2a_valian.ppt (describing the problem of “antiquated, inadequate, and decentralized data bases”, including time-limited computerized data bases and idiosyncratic school-based data bases).

⁷⁵ Interview with Affirmative Action Officer, (Apr. 26, 2004) (“Another problem is the records are not good -- the lists of people in the departments are not up to date. I get a list and come to the manager to speak to him and he says -- this is not the list of our people.”); Janet E. Malley, *ADVANCE Institutional Data*, PowerPoint Presentation at the NSF National Conference, slide 16 (Apr. 20, 2004), available at http://www.advance.gatech.edu/2004conf/2a_malley.ppt (summarizing the experience of ADVANCE institutions with delayed updated of institutional data). See also Macaulay, *supra* note 70.

⁷⁶ E-mail from Ann Bartow, Professor of Law, University of South Carolina School of Law, to Susan Sturm, Professor of Law and Social Responsibility, Columbia Law School (Sept. 27, 2004, 12:25 EST) (on file with the Harvard Journal of Law & Gender) (“AALS is allowing law schools to designate status themselves, so a bunch of them started calling *non-tenure track* hires “Assistant Prof,” “Associate Prof” and even “Professor” and the AALS is counting them in its stats! Half of all Asst Profs are women because law schools are calling e.g. nontenure track Legal Writing instructors “Assistant Professor” so they help make up that 50% year after year, permanent female junior faculty!”).

⁷⁷ Interview with Affirmative Action Officer, (Dec. 8, 2004). See also Macaulay, *supra* note 70.

⁷⁸ The problem of obtaining accurate and relevant information about compliance is a more general one

reports and documentation provided by the university, and they sometimes consist entirely of a “desk audit” of those materials.⁷⁹ Even on-site compliance reviews are usually one-shot and short term. Affirmative action audits of universities by the OFCCP are relatively rare.⁸⁰ Outside auditors who are unfamiliar with academic and departmental culture can find it difficult to know the right questions to ask, or how to get access to information about dynamics, pools, and barriers.⁸¹ Substantive problems may elude disclosure unless the problems are serious and pervasive or there are sympathetic insiders who want to use the compliance review process to promote change. Organizational reporting often proceeds with the goal of minimizing problems to avoid triggering increased monitoring activity by government regulators. Institutions can and do game the data to produce the appearance of compliance without making substantial changes in their practices.⁸²

Thus, conventional administrative and judicial responses to persistent inequality in faculty hiring have not been proven to work. One emerging response to this regulatory failure has been to propose new forms of public intervention. Proceeding under different names and with different

confronting regulatory agencies and courts engaged in monitoring the activities of firms. See Bamberger, *supra* note 26 (citing Donald Langevoort, *Organized Illusions: A Behavioral Theory of Why Corporations Mislead Stock Market Investors (and Cause Other Social Harms)*, 146 U. PA. L. REV. 101 (1997)); Susan Sturm, *Resolving the Remedial Dilemma: Strategies of Judicial Intervention in Prisons*, 138 U. PA. L. REV. 805, 835 - 37 (1990) (“Prison systems generally lack mechanisms for gathering information about daily activities and communicating it to those in policymaking positions.”); Diane Vaughan, *The Dark Side of Organizations: Mistake, Misconduct, and Disaster*, 25 ANN. REV. SOCIOLOGY 271 (1999).

⁷⁹ OFCCP Affirmative Action Compliance Reviews: Are You Ready?, GOV’T CONTRACTS ISSUE UPDATE (Wiley Rein & Fielding LLP, Washington D.C.), Winter/Spring 2002, available at http://www.wrf.com/publication_newsletters.cfm?sp=newsletter&publication_ID=10251.

⁸⁰ JOHN DAVID SKENTNY, THE IRONIES OF AFFIRMATIVE ACTION: POLITICS, CULTURE, AND JUSTICE IN AMERICA (1996); Bernard E. Anderson, *The Ebb and Flow of Enforcing Executive Order 11246*, 86 AMER. ECON. REV. 298 - 301 (1996); Erin Kelly & Frank Dobbin, *How Affirmative Action Became Diversity Management: Employer Response to Anti-Discrimination Law 1961 - 1996*, 41 AM. BEHAV. SCI. 960, 964 - 65 (1998). For example, the OFCCP conducted a series of compliance reviews of Harvard’s hiring and promotion practices, beginning in 1975. The most recent audit, conducted in 1990, produced a conciliation agreement with OFCCP that cited ten school- or department-specific violations. Harvard was found to be in compliance.

⁸¹ See Williams, *supra* note 72, at 88 (“The U.S. Department of Labor bureaucracy is cumbersome and ill-equipped to monitor progress in affirmative action; its compliance staff tends to be unfamiliar with the way a university operates and, therefore, makes unfounded judgments.”); Interview with Affirmative Action Officer (Apr. 24, 2004) (reporting that the government officials performing a recent audit did not know what questions to ask and basically produced make-work rather than a meaningful inquiry); Bamberger, *supra* note 26, at 66 (“... external observers necessarily unfamiliar with internal company workings lack the means to delve beyond formally rational structures . . . and the ability to identify - let alone monitor — decisions buried deep in the firm.”).

⁸² These challenges have been documented in many other sectors as well. See, e.g., Charles Sable, *A Measure of Federalism: Assessing Manufacturing Technology Centers*, 25 RES. POL’Y 281, 283 (1996) (“As in many organizations, MTC managers commonly speak of keeping two sets of books—one, pro forma, to comply with headquarters’ reporting requirements, and the other to register the information actually useful in their decision making.”).

points of emphasis,⁸³ this approach places a focus on regulation through centrally coordinated local problem solving. Public agencies encourage local institutions to solve problems by examining their own practices in relation to common metrics and by comparing themselves to their most successful peers.⁸⁴ Problem solving operates through direct involvement of affected and responsible individuals.⁸⁵ Information about performance drives this process. Its production and disclosure enable problems to be identified, performance to be compared, pressure for change to mount, and the rules themselves to be revised. Public bodies coordinate, encourage, and hold accountable these participatory, data-driven problem solving processes.⁸⁶ My own work arguing for a structural approach to second-generation employment discrimination shares many of these features.⁸⁷

New governance has provoked skepticism about its feasibility and legitimacy. Skeptics legitimately question whether organizations will have the capacity to sustain institutional learning and problem solving. The scholarly literature shows that many organizational environments discourage this form of institutional learning.⁸⁸ Many organizations are not set up to prompt critical assessment of day-to-day performance. Employees operate within organizational routines, which limit their perception of problems.⁸⁹ The triggers for detecting and acting on problems do not exist in many organizations. Scholars also question whether public institutions, particularly the lower courts, actually assess the adequacy of problem solving processes, or whether they defer to the decisions of the institutions they are supposed to monitor, thereby legitimizing purely symbolic processes.⁹⁰

⁸³ The language of “new governance” scholars includes democratic experimentalism, empowered participatory governance, a structural approach, legal pragmatism, reflexive law, and open method of coordination. For a comprehensive overview of new governance scholarship, see generally LAW AND NEW APPROACHES TO GOVERNANCE IN THE EU AND US (Grainne de Burca & Joanne Scott eds., 2006); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342 (2004).

⁸⁴ See Michael C. Dorf & Charles F. Sabel, A Constitution of Democratic Experimentalism, 98 COLUM. L. REV. 267, 314 (1998); William Simon, Solving Problems v. Claiming Rights: The Pragmatist Challenge to Legal Liberalism, 46 WM. & MARY L. REV. 127, 181 - 86 (2004); Sturm, *supra* note 20, at 523 - 24, 566.

⁸⁵ See Archon Fung, Empowered Participation: Reinventing Urban Democracy 3 - 4 (2004).

⁸⁶ *Id.* at 6-8; Dorf and Sabel, *supra* note 84, at 316; Lobel, *supra* note 83, at 400 - 02; Simon, *supra* note 84, at 184 - 85.

⁸⁷ Sturm, *supra* note 20, at 523 - 24.

⁸⁸ ARGYRIS & SCHÖN, *supra* note 26; Langevoort, *supra* note 78.

⁸⁹ For a review of the literature, see Bamberger, *supra* note 26.

⁹⁰ This is a criticism leveled at the structural approach to second generation employment discrimination by new institutionalists. See, e.g., Lauren B. Edelman, Howard S. Erlanger, and John Lande, *Internal Dispute Resolution: The Transformation of Civil Rights in the Workplace*, 27 L. & SOC'Y REV. 497, 500 (1993)(showing how symbolic legitimation can occur through developing rituals of legality that do not in fact influence practices); Krawiec, *supra* note 12.

Skeptics have also expressed doubt about the legitimacy and feasibility of grass roots participation in new governance deliberations. New governance scholarship is at best vague about the processes for developing outsider groups' capacity to engage effectively and thus participate as "equals" in the deliberative process.⁹¹ This literature has yet to grapple fully with the challenge of constructing effective processes that also enable meaningful participation by disempowered groups, and that do not simply privilege experts.⁹² Proposals to rely on grass roots organizations in third party monitoring have not offered strategies for enabling these groups to participate effectively.⁹³ The evidence suggests that, without attention to these questions, grass roots organizations find it difficult to sustain their involvement over time.⁹⁴ They also are limited to the relatively rare situations where outsiders have already organized sufficiently to engage in effective collective action.

Public regulatory agencies face serious challenges in obtaining necessary information, building cooperative relationships, and developing communities of practice among peer institutions. Local organizations may not produce reliable information, particularly about the cultural and institutional dynamics that prevent change. Centralized organizations may lack sufficient cultural fluency to decipher the adequacy and reliability of the information they do receive. They may also face resistance to any external oversight of local decision making by those who are not involved in the direct work of local organizations.⁹⁵ To facilitate a learning community, public agencies must be viewed as legitimate conveners of peer interaction. Interventions in the name of legal compliance may thwart the openness and engagement necessary for collaborative problem solving to work.⁹⁶

Public agencies also face considerable obstacles in developing common performance metrics that will simultaneously prompt local experimentation and provide accountability. New governance's potential as a form of public normative elaboration hinges on the efficacy of these performance metrics. It is crucial that they measure what is actually valued, and generate information revealing where the problems lie and why

⁹¹ Archon Fung & Erik Olin Wright, *Thinking About Empowered Participatory Governance*, in DEEPENING DEMOCRACY: INSTITUTIONAL INNOVATIONS IN EMPOWERED PARTICIPATORY GOVERNANCE 3 (Archon Fung and Erik Olin Wright eds., 2003).

⁹² See Helen Hershkoff & Bennett Kingsbury, *Crisis, Community, and Courts in Network Governance*, 28 N.Y.U. REV. L. & SOC. CHANGE 322 (2003).

⁹³ See Cynthia Estlund, *Rebuilding the Law of the Workplace in an Era of Self Regulation*, 105 Colum. L. Rev. 319, 397 (2005).

⁹⁴ See FUNG & WRIGHT, *supra* note 91.

⁹⁵ See ARGYRIS & SCHÖN, *supra* note 26; Bamberger, *supra* note 26, at 57 - 66.

⁹⁶ See Sturm, *supra* note 20, at 543 - 45.

they persist. But the relationship of these metrics to desired practice and local innovation often remains ambiguous at best. One concern is that the aspects of performance most amenable to quantitative metrics may not be those most important to learning but will nonetheless assume priority simply because they are measured.⁹⁷ Quantitative metrics often point to where problems are occurring, but not why they are occurring. In a context of mobilized public engagement and ongoing problem solving, these measures can prompt further investigation into the root causes. Without the infrastructure and activism needed to contextualize quantitative metrics so that they trigger self-diagnosis and remediation, however, performance standards can operate like rigid rules.⁹⁸ The localities most in need of improvement may be most vulnerable to this dynamic.

New governance's traction depends upon strategically located actors engaged in ongoing questioning about the adequacy of the status quo and efforts to reform it. Sustaining this mobilization in turn requires leadership, not only at the top but also at crucial everyday decision points. New governance theory must explicitly focus on developing the culture and political economy for sustaining institutional change. It must also account for how public norms will be advanced when circumstances do not independently produce robust public problem solving.

Viewed in light of this overview revealing the limitations of the current regulatory landscape, recent interest in ratcheting up public agency oversight of university employment decisions is understandable. This survey reveals the need for effective public intervention strategies to jumpstart and maintain institutional change.

The three workplace equity dilemmas described in this section in fact interrelate with each other. Equity initiatives will be difficult to sustain if the law prevents experimentation and if public agencies fail to provide needed support and accountability. Yet, courts' and public agencies' capacity to intervene depends upon local institutions to identify problems and craft workable solutions. The question is how public intervention can stimulate a broader group of institutions to learn about and change exclusionary gender and racial dynamics, and in the process hold institutions accountable, comply with the law, generate new public norms and knowledge, and sustain this process over time. The next section documents a public initiative that undertakes this challenge.

⁹⁷ This is a recurring criticism of the No Child Left Behind Act, as implemented in states that lack the institutional intermediaries and public engagement at work in Texas and Kentucky. See Richard F. Elmore, *Details, Details, Details*, 29 N.Y.U. REV. L. & SOC. CHANGE 315, 316 - 18 (2003).

⁹⁸ See Gordon Whitman, *Making Accountability Work*, 28 N.Y.U. REV. L. & SOC. CHANGE 361 (2003).

II. THE ADVANCE STORY: A CASE STUDY OF GENDER EQUITY THROUGH INSTITUTIONAL TRANSFORMATION

NSF's ADVANCE program exemplifies a methodology for addressing each of the three dilemmas described in the previous section; it shows how to (1) sustain institutional learning and change, (2) find normative and legal frameworks that uphold these efforts, and (3) develop a public intermediary role that offers effective external accountability. The program uses public agency resources to promote women's advancement through institutional transformation at the university level, to develop public knowledge about effective strategies for institutional change, and to increase incentives for universities to use that knowledge to advance women in science. Although it has not been uniformly successful at each funded institution, many ADVANCE institutions have produced tangible institutional change.

Before analyzing ADVANCE as a methodology, it is necessary to understand its origins and operation, both nationally and at the university level. This section provides that overview. It describes the evolution of ADVANCE at NSF and UM. This case study is based on interviews of NSF personnel involved in ADVANCE, including the program officer, senior administrators, and the general counsel.⁹⁹ In addition, a research team interviewed UM faculty, department chairs, deans, administrators, and key participants in UM's ADVANCE initiative.¹⁰⁰ They were asked to describe their experience with ADVANCE over time, including important turning points in the initiative and the programs and interventions that were most and least successful. I interviewed affirmative action officers at three other research universities.¹⁰¹ Research also included an analysis of websites, reports and other documents produced by ADVANCE participants, including grant proposals, climate studies, program descriptions, activity updates, public presentations, site visit reports, newspaper reports, and program requirements.¹⁰² I attended and documented the proceedings at two national ADVANCE conferences and facilitated group discussions at NSF and UM designed to identify participants' working assumptions and strategies.

⁹⁹ All interviews of NSF personnel, other than telephone interviews, took place at NSF's offices in Arlington, Virginia. To preserve confidentiality, I refer to interviewees by role, rather than by name.

¹⁰⁰ Kati Daffan, a law student with whom I worked extensively on this article, played an invaluable role in conducting this field research. With the exception of telephone interviews, all interviews of UM faculty, staff and administration took place in Ann Arbor, Michigan.

¹⁰¹ To preserve the confidentiality of these affirmative action officers, I refer to their interviews only by date and role.

¹⁰² Most of these documents are accessible on the ADVANCE websites of each of the ADVANCE grantees, which are linked by a national ADVANCE portal website, <http://research.cs.vt.edu/advance/tiki/tiki-index.php> (last visited Apr. 17, 2006).

This research methodology is an example of micro-institutional analysis.¹⁰³ It starts with an intervention in a particular context or problem, and follows the web of relationships, processes, and structures that interact to shape institutional outcomes.¹⁰⁴ It focuses on identifying institutions undergoing a change process, locating the energy and momentum generated through that process, and tracing the roles, strategies, structures, and decisions that influence the trajectory of those initiatives. It examines this change initiative within its larger institutional environment, and documents the interactions across organizational boundaries. This method is particularly important as a way to study and theorize about innovation in methods of promoting institutional change. By focusing on a setting in the midst of a reform initiative, the case study allows examination of the interactions of interdependent but distinct institutional actors (such as faculties, lawyers, and government officials) as a way of developing new paradigms for public intervention.

A. *The Origins of NSF ADVANCE*

NSF's involvement with workplace equity issues can be traced to its mission of supporting scientific research and the skills necessary to make that research possible. Congress created NSF in 1950 as an independent federal agency that awards competitive grants and cooperative agreements for research and education in science, mathematics, and engineering in order to stimulate scientific advancement.¹⁰⁵ NSF was a product of the post-World War II commitment to maintain the United States's military and economic edge by devoting public resources to increasing workforce capacity for scientific research.¹⁰⁶ Since its creation, NSF has had responsibility for developing the scientific and engineering workforce to ensure that "there will always be plenty of skilled people available to work in new and emerging scientific, engineering and technological fields, and plenty of capable teachers to educate the next generation."¹⁰⁷

As part of this professional development strategy, Congress authorized NSF to undertake a comprehensive program to increase the

¹⁰³ For a further discussion of micro-institutional analysis as a methodology, see Joel Handler et al., A Roundtable on New Legal Realism, Microanalysis of Institutions, and the New Governance: Exploring Convergences and Differences, 2005 WIS. L. REV. 335, 489 - 91 (2005) (discussing remarks of Edward Rubin).

¹⁰⁴ See Edward L. Rubin, The New Legal Process, The Synthesis of Discourse, and the Microanalysis of Institutions, 109 HARV. L. REV. 1393, 1424 - 37 (1996).

¹⁰⁵ 2005 PROGRAM SOLICITATION, *supra* note 3.

¹⁰⁶ See generally G. Paschal Zachary, Endless Frontier: Vannevar Bush, Engineer of the American Century (1999).

¹⁰⁷ NSF At A Glance, *supra* note 3.

participation of women and minorities in science and engineering.¹⁰⁸ The legislature identified gender and racial under-participation in academic science as a pervasive and pressing problem¹⁰⁹ and passed the Science and Engineering Equal Opportunities Act, which provided that “it is in the national interest to promote the full use of human resources in science and engineering and to insure the full development and use of the scientific and engineering talents and skills of men and women, equally, of all ethnic, racial, and economic backgrounds, including persons with disabilities.”¹¹⁰ Through the spending power, Congress enlisted NSF in promoting the advancement of women and people of color as part of the overall mission to build scientific capacity and address labor shortages.

For years, NSF fulfilled this mandate by funding a variety of grant programs providing career support to individual women and people of color at pivotal stages of their careers. Programs specifically targeted women for fellowships, travel and research support, and other awards.¹¹¹ This approach reflected an understanding that under-participation resulted primarily from lack of representation in the pool of qualified candidates, often referred to as “the pipeline problem.”¹¹² By developing the interest and credentials of women and people of color, these interventions would increase their ability to compete successfully for positions in academic science.

In the 1990s, several factors converged to prompt rethinking of this individualized approach. Legal concerns played some role. In the 1990’s, courts and legislatures began to invalidate affirmative action and set-aside programs for minority students and other groups.¹¹³ A white student sued NSF, challenging the constitutionality of an NSF program reserving a portion of its prestigious graduate research fellowships for minority students seeking to launch a career in science.¹¹⁴ NSF settled the lawsuit

¹⁰⁸ Science and Engineering Equal Opportunities Act, 42 U.S.C. § 1885(a) (2000).

¹⁰⁹ See Gender Differences, *supra* note **Error! Bookmark not defined.** (providing links to gender faculty studies in research universities, sorted by state).

¹¹⁰ 42 U.S.C. § 1885(a).

¹¹¹ Interview with Joseph Bordogna, former Deputy Director of NSF, in Arlington, Va. (Mar. 17, 2005).

¹¹² See ALISON WYLIE, *The Contexts of Activism on “Climate” Issues*, in BREAKING ANONYMITY: THE CHILLY CLIMATE FOR WOMEN FACULTY 29 (The Chilly Collective eds., 1995); DUKE REPORT, *supra* note 18, at 6 (concluding that evidence does not support the pipeline hypothesis).

¹¹³ See, e.g., *Hopwood v. Texas*, 78 F.3d 932 (5th Cir. 1996) (holding that a law school may not use diversity as a basis for taking race into account in law school admissions), *cert. denied*, 518 U.S. 1033 (1996); *Taxman v. Board of Educ.*, 91 F.3d 1547 (3d Cir. 1996)(en banc)(rejecting diversity as a basis for affirmative action in hiring teachers); CAL. CONST. art. I, § 31 (barring “preferential treatment” based on race or gender).

¹¹⁴ Jeffrey Mervis, Wanted — A Better Way to Boost Numbers of Minority P.h.D.s, 281 SCIENCE 1268 (Aug. 28, 1998).

and discontinued the minority set-aside in its fellowship program.¹¹⁵ This lawsuit signaled the possibility of future legal challenges to other NSF programs. Although the threat of litigation did not dictate NSF's programmatic direction, it underscored the need to develop new strategies. Joe Bordogna, a deputy director of NSF and one of the principal champions of ADVANCE, wanted to "make sure that we had programs that would allow us to do what we want to do and insulate us as much as possible from this evolving legal challenge."¹¹⁶

One significant step was for NSF to incorporate consideration of the "broader impacts of a proposed activity" as one of its two merit criteria for evaluating grant proposals. For every grant application submitted to NSF, the agency asks itself: "[H]ow well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?"¹¹⁷ Any department that seeks NSF funding must at least be able to demonstrate that they are aware of under-participation issues and are taking steps to address them.

NSF also undertook a systematic program review as part of the effort to develop new strategies for diversifying science. This work proceeded on two separate planning and funding tracks, one for women and the other for minorities. The decision to focus on gender in ADVANCE was based on the analysis that the issues facing the two groups are somewhat different: "women are in the academic pipeline, for example, in numbers large enough to expect to see them more highly represented at the faculty level. That is not the case for underrepresented populations in general."¹¹⁸ This analysis led NSF to limit the scope of the ADVANCE program to women and to address race by giving special emphasis to programs advancing women of color.¹¹⁹ Because ADVANCE did not specifically focus on race, this Article documents a change process which emphasized gender, and which has been attempting to connect its work with minority advancement ever since its inception. The barriers identified through ADVANCE as limiting women's participation in the academy also affect people of color. Even if the problems differ, the same processes

¹¹⁵ "At the urging of the Justice Department, which wanted to avoid a politically charged trial and a possible precedent-setting defeat, NSF officials settled the case for \$95,400--paying \$14,400 to the student, Travis Kidd, and \$81,000 to his lawyers." *Id.* at 1269.

¹¹⁶ Interview with Joseph Bordogna, *supra* note 111.

¹¹⁷ Merit Review Criteria, *supra* note 4.

¹¹⁸ E-mail from Alice Hogan, ADVANCE Program Director, National Science Foundation, to Susan Sturm, Professor of Law and Social Responsibility, Columbia Law School (Jan. 24, 2006, 11:34 EST) (on file with the Harvard Journal of Law & Gender).

¹¹⁹ Gender and minority initiatives are funded by separate programs with distinct program directors. One example of programs addressing minority advancement is Integrative Graduate Education and Research Training ("IGERT"). Integrative Graduate Education and Research Training, http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12759 (last visited Feb. 26, 2006).

often determine access and advancement for faculty of color and women. Efforts have been made in some institutions to link ADVANCE with other initiatives aimed at increasing participation of faculty of color. However, implementation challenges resulting from this separation of gender and race initiatives remain.

Bordogna convened a working group to assess the impact of NSF's gender programs.¹²⁰ This review was triggered by Bordogna's experience at a workshop attended by women who had received grants for women at NSF:

The majority of people in that room were young women who got grants to help them go through the glass ceiling. We noticed that people were getting grants renewed and renewed. We had a cacophony of programs for women. We were not getting any critical mass. We were having a small impact.¹²¹

In July of 1999, Bordogna put together a group called the ADVANCE Coordinating Committee, chaired by Alice Hogan, who would become the ADVANCE program director and principal architect.¹²² The committee's evaluation showed that NSF's current strategy was not making a dent in the problem. Analysis of the demographic data reinforced the conclusion that limited progress had been made in the effort to advance women. "Despite advances made in the proportion of women choosing to pursue science and engineering careers, women continue to be significantly underrepresented in almost all science and engineering fields."¹²³ As of 2001, "[w]omen make up less than 20% of science and engineering faculty."¹²⁴ They hold an even smaller percentage of high-ranked positions. The problem is worse for faculty of color in the academy. Many disciplines and departments do not have any faculty of color in tenure track

¹²⁰ The process began with the Human Resources Task Force, which included NSF's general counsel and other senior leadership at NSF and which functioned as an internal think tank for the "broadening participation" goals at NSF. Interview with Joseph Bordogna, *supra* note 111; E-mail from Alice Hogan to Susan Sturm, *supra* note 118.

¹²¹ Interview with Joseph Bordogna, *supra* note 111.

¹²² In addition to the chair, the committee included a representative from each NSF directorate, appointed by the NSF assistant director, and a representative from the general counsel's office. *Id.*; E-mail from Alice Hogan to Susan Sturm, *supra* note 118.

¹²³ 2002 PROGRAM SOLICITATION, *supra* note **Error! Bookmark not defined.**, at i. The average percentage of women faculty among Ivy universities is seventeen percent in the natural sciences and ten percent in engineering; the average for universities in the Consortium on Financing Higher Education is sixteen percent for the sciences and ten percent in engineering. Source: Consortium on Financing Higher Education, Faculty Counts Survey 2001 - 2002.

¹²⁴ Nat'l Sci. Found., NSF 01-69, Advance: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers, Program Solicitation 8 (2001), available at <http://www.nsf.gov/pubs/2001/nsf0169/nsf0169.htm> [hereinafter 2001 Program Solicitation].

positions. “Women from minority groups underrepresented in science and engineering constitute only about 2% of science and engineering faculty in 4-year colleges and universities.”¹²⁵

The data also showed that the problem existed notwithstanding increased numbers of women Ph.D.s.¹²⁶ Women were not going into academic science in proportion to their representation in the Ph.D. pool, and were not advancing within their departments in proportion to their numbers.¹²⁷ NSF concluded that women’s under-participation was not simply a “pipeline problem.”

NSF’s program review pushed the agency’s leadership to reassess the causes of women’s persistent under-participation. The publication of the Massachusetts Institute of Technology (“MIT”) *Report on the Status of Women Faculty in the School of Science* provided further impetus for a data-driven reassessment.¹²⁸ The MIT study, which resulted from the collective action of 16 of the 17 tenured faculty members in the sciences at MIT, explicitly identified institutional practices and culture as a significant cause of persistent inequality.¹²⁹ The study found that many tenured women experienced professional marginalization. Women faculty received lower salaries, less space, and fewer resources than male colleagues.¹³⁰ Charles Vest, then President of MIT, publicly acknowledged the findings of gender bias and assumed responsibility for fixing the problem.¹³¹

Around the same time, academic research accumulated to produce a shared understanding of gender bias’s structural and cultural underpinnings. Based on its analysis of available data, the NSF working group, under Alice Hogan’s leadership, concluded that it would be difficult to enable women to advance without changing the institutional

¹²⁵ 2002 PROGRAM SOLICITATION, *supra* note **Error! Bookmark not defined.**, at i.

¹²⁶ *Id.* See also Dr. Donna J. Nelson and Diana C. Rogers, A National Analysis of Diversity in Science and Engineering Faculties at Research Universities 1 (2005).

¹²⁷ See, e.g., PROPOSAL SUMMARY, *supra* note 33, at C-2; COLUMBIA COMMISSION, *supra* note 18, at 1; DUKE REPORT, *supra* note 18, at 6.

¹²⁸ For a thoughtful account of the gender equity initiative at MIT, see Bailyn, *supra* note 26.

¹²⁹ This mobilization was ignited by Nancy Hopkins, a professor of biology at MIT, who resolved to seek redress for her own experience of gender bias. *Id.* As of 1994, when three tenured women in the school of science began to examine the quality of their own professional lives at MIT, women comprised of 15 out of 212 tenured faculty, and this number had remained unchanged for at least 10, and probably 20 years. MASS. INST. OF TECH., REPORTS OF THE COMMITTEES ON THE STATUS OF WOMEN FACULTY AT MIT 3 (2002), <http://web.mit.edu/faculty/reports/pdf/overview.pdf> [hereinafter MIT REPORT 2002].

¹³⁰ MIT REPORT 2002, *supra* note 129.

¹³¹ As Nancy Hopkins put it, “The women who write these reports tell the same story over and over again. When an individual person tries to raise this issue, people don’t hear them. Each woman [who faces marginalization] is trapped alone, living in a state of suspended misery. There have been hundreds of reports just like MIT’s, collecting dust. When the president says ‘it’s true,’ then it’s true.” MIT News Office, Leaders of 9 Universities and 25 Women Faculty Meet at MIT, Agree to Equity Reviews (Jan. 30, 2001), <http://web.mit.edu/newsoffice/2001/gender.html>.

environments that shaped their interests and opportunities.¹³² This analysis led NSF to adopt ADVANCE:

There is increasing recognition that the lack of women's full participation at the senior level of academe is often a systemic consequence of academic culture. To catalyze change that will transform academic environments in ways that enhance the participation and advancement of women in science and engineering, NSF seeks proposals for institutional transformation.¹³³

B. An Overview of NSF ADVANCE

ADVANCE is a relatively new and evolving program. It awarded its first round of institutional transformation grants in 2001 and has conducted two funding cycles since then, with the most recent grants awarded in 2006. ADVANCE includes a funding program with substantive and process requirements for grant applicants, an oversight process establishing ongoing relationships among grantees and NSF, and a knowledge-building network of continuing interactions between NSF and the larger university community around issues of gender equity in science and engineering.

1. ADVANCE's Funding Program

The goal of ADVANCE is “to increase the participation of women in the scientific and engineering workforce through the increased representation and advancement of women in academic science and engineering careers.”¹³⁴ Institutional transformation grants make up the core of the ADVANCE programs.¹³⁵ “By supporting the groundwork necessary to transform institutional practices systemically, the Institutional Transformation Awards seek to create positive, sustainable, and permanent change in academic climates.”¹³⁶ The awards “are designed to support several stages of institutional transformation, including data collection, analysis, and self-study necessary to identify the problems and define solutions; and implementation of initiatives that bring about sustainable

¹³² 2005 PROGRAM SOLICITATION, *supra* note 3, at 4.

¹³³ *Id.* at 5.

¹³⁴ 2001 PROGRAM SOLICITATION, *supra* note 124.

¹³⁵ In the earlier rounds, NSF also offered Fellows Awards to “enable promising individuals to establish or reestablish full-time independent academic research and education careers in institutions of higher learning.” *Id.* at 3. In the later rounds, those individual awards have been discontinued, based on NSF’s assessment that individual support awards have their greatest impact when they are integrated into an institutional transformation initiative. See 2005 PROGRAM SOLICITATION, *supra* note 3 (bearing no mention of individual awards); Interview with Alice Hogan, ADVANCE Program Director, National Science Foundation, in Arlington, Va. (Mar. 17, 2005).

¹³⁶ 2005 PROGRAM SOLICITATION, *supra* note 3, at 6.

organizational change contributing to the advancement of women in science and engineering.”¹³⁷ The initiatives are to develop integrated strategies focused on reducing the “barriers to women’s advancement” that operate along the spectrum of institutional and professional life.¹³⁸ The solicitation specifically encourages creative and experimental approaches.

The program solicitations set out several key components of a proposal: First, the proposal must explicitly undertake *institutional transformation*, which may be directed at the departmental, school, or institutional level.¹³⁹ Proposals must “provide a clear and concise plan to enable effective and sustainable institutional transformation designed to increase the participation and advancement of women in academic science and engineering careers.”¹⁴⁰

Second, grantees commit to *data-based decision making* as their methodology for each phase of the grant process. Data collection is required at the outset of the process to establish baselines, to figure out where the barriers are, and to design strategies to reduce or eliminate those barriers.¹⁴¹ NSF provides “general guidelines for the collection of data in order to provide coordination across ADVANCE Institutional Transformation projects and to establish the basis for the evaluation of the ADVANCE program.”¹⁴² The grant proposals must also show how data will be used as part of the ongoing change process.

ADVANCE’s emphasis on data gathering is the hallmark of NSF, which is, after all, an agency committed to scientific research. The creators

¹³⁷ 2002 PROGRAM SOLICITATION, *supra* note **Error! Bookmark not defined.**, at 3.

¹³⁸ 2005 PROGRAM SOLICITATION, *supra* note 3, at 9.

¹³⁹ *Id.* at 5.

¹⁴⁰ *Id.* at 9.

¹⁴¹ *Id.*

¹⁴² Through a deliberative process involving the first round of grantees, NSF developed the following twelve outcome indicators that are now included in ADVANCE Cooperative Agreements and used by all ADVANCE projects:

- a. Number and percent of women faculty in science/engineering by department
 - b. Number and percent of women in tenure-line positions by rank and department
 - c. Tenure promotion outcome by gender
 - d. Years in rank by gender
 - e. Time at institution and attrition by gender
 - f. Number of women in S&E who are in non-tenure-track positions (teaching and research)
 - g. Number and percent of women scientists and engineers in administrative positions
 - h. Number and percent of women S&E faculty in endowed/named chairs
 - i. Number and percent of women S&E faculty on promotion and tenure committees
 - j. Salary of S&E faculty by gender (controlling for department, rank, and years in rank)
 - k. Space allocation of S&E faculty by gender (with additional controls such as dept., etc.): baseline and year 5
 - l. Start-up packages of newly hired S&E faculty by gender (with additional controls such as field/department, rank, etc.).
- Draft Collaboration Agreement (2004) (specific citation information removed for confidentiality purposes) (unpublished, on file with the Harvard Journal of Law & Gender).

of ADVANCE also concluded that data gathering is a crucial part of institutional change.¹⁴³ Used properly, it makes visible the aggregate impact of small decisions and locates the points where intervention is most needed. NSF also viewed the process of collecting the data as a communication tool used to generate interest in addressing problems revealed through objective inquiry. Finally, the ADVANCE planners figured out that the information necessary to understand the source of identified problems often does not exist or is extremely difficult to obtain.¹⁴⁴ They wanted to use NSF's auspices to facilitate the often difficult and time consuming data gathering process.

Third, research-based proposals must “clearly *state the conceptual framework* for the proposed project, identify relevant research findings, and build on existing research and practice.” In the third round, the program solicitation requires proposals to include reference “to publicly available findings from earlier ADVANCE Program awards” and to “clarify the connection between the conceptual framework, the issues identified through analysis of institutional data, and the proposed plan.”¹⁴⁵

Fourth, NSF requires grant applicants to demonstrate that they have put together the *infrastructure* necessary to implement the proposed plan. The proposal must “define a management plan that details how project activities will be organized.”¹⁴⁶ The plan should “describe leadership, participants and partners” and identify “their expertise, roles and level of effort on the project.”¹⁴⁷

Fifth, ADVANCE requires *ongoing monitoring and assessment* of program progress and impact. “It is expected that each project will complement its efforts with formative evaluation. This evaluation should be the basis for strengthening implementation over the course of the project and for annual reporting to NSF.”¹⁴⁸ This assessment should involve “evaluators who are external to the project, who can render an objective evaluation, and whose expertise is relevant to the issues affecting the participation and advancement of women in science and engineering.”¹⁴⁹ In addition, applicants are to suggest “objectives, benchmarks, and indicators of progress that will inform reviewers of the proposers' understanding of essential factors for judging accountability” that are “both quantitative (indicators of women's representation at various academic ranks, in

¹⁴³ Interview with Alice Hogan, *supra* note 135; Interview with Joseph Bordogna, *supra* note 111.

¹⁴⁴ See Interview with Alice Hogan, *supra* note 135; Malley, *supra* note 75.

¹⁴⁵ 2005 PROGRAM SOLICITATION, *supra* note 3, at 12.

¹⁴⁶ *Id.* at 9.

¹⁴⁷ *Id.* at 5.

¹⁴⁸ *Id.*

¹⁴⁹ *Id.* at 9.

recruitment and promotion pools, for example) and qualitative (the process of change in organizational culture, experiences of academic climate).¹⁵⁰

Finally, NSF requires proposals to “detail plans for *sharing best practices* during and at the end of the award period.”¹⁵¹ NSF defines the goal of the program as contributing to a national knowledge base and takes into account the investigators’ commitment and capacity to contribute to the field and to benefit peers in the academic community. In the most recent funding cycle, NSF has funded an experiment called Partnerships for Adaptation, Implementation and Dissemination. These awards “support the analysis, adaptation, dissemination and use of existing innovative materials and practices that have been demonstrated to be effective in increasing representation and participation of women in academic science and engineering careers.”¹⁵² ADVANCE provides some funding either to “partner with an Advance school or to bundle a smaller group of schools of like kind together and to work on bringing [in] the techniques, knowledge, maybe even the people.”¹⁵³

2. NSF as National Institutional Intermediary

NSF uses its position as a funding agency to facilitate experimentation, accountability, and information sharing. It performs the functions of what I have referred to in my recent work as an institutional intermediary: (1) structuring a collaborative relationship among grantees and the ADVANCE program director,¹⁵⁴ (2) developing a system of accountability that includes peer review and metrics revised in light of experience, (3) pooling knowledge, and (4) developing a community of practice to sustain this inquiry and learning.

NSF structures its relationships with ADVANCE award recipients through the use of collaborative agreements. These are negotiated agreements that operate like a constitution for the interactions between NSF and its grantees and among the grantees themselves. NSF and grantees commit to shared goals and mutual responsibilities for information gathering, standard setting, evaluation and monitoring, and sharing knowledge within the field. In a typical agreement, grantees agree to submit a plan with timelines, set up the institutional infrastructure needed

¹⁵⁰ *Id.* at 5.

¹⁵¹ *Id.* at 9. Investigators are expected to disseminate their findings in specific peer-reviewed journals, publications, web sites, and professional association conferences and are “committed (including allocating resources) to make sure that the investment in the project leads to this contribution and that peers in the community will benefit.” *Id.* at 6.

¹⁵² *Id.* at 2.

¹⁵³ Interview with Alice Hogan, *supra* note 135.

¹⁵⁴ NSF ADVANCE is overseen by a project director, Alice Hogan, who has been central in developing the concept of ADVANCE and overseeing its implementation.

to accomplish their proposed programs, create a faculty working group, gather necessary data, evaluate their progress, work cooperatively with evaluators and monitors, work closely with NSF and other grantees, and disseminate their results and best practices. NSF assumes “major responsibility for providing the Awardee general oversight and monitoring to help assure effective performance and administration, as well as coordination of all the ADVANCE Institutional Transformation Programs as part of an initiative designed to achieve national science and engineering workforce goals.”¹⁵⁵

The collaboration agreement builds in feedback and accountability. The program director, Alice Hogan, is the linchpin of this collaborative process. The program director is responsible for assembling outside review panels to evaluate grant proposals, recommending the portfolio of grant awards, troubleshooting over the life of the grant, planning and convening gatherings of grantees and others in the field, coordinating outside reviews, and revising the program in light of new knowledge and experience. Beginning with the grant application period, the program director interacts regularly with grant applicants, and this informal interaction continues into the funding relationship.¹⁵⁶ She provides hands-on support and pressure to the funded sites.

In addition, the collaboration agreement requires annual reports, which include:

A description of the value added by the ADVANCE project to date, the vision, progress and plans of the ADVANCE initiatives, difficulties in implementing proposed activities and approaches to address the difficulties, and any preliminary evaluation findings. The report will also include a description of the ADVANCE project's management system and infrastructure.¹⁵⁷

The report must include “data for one entire reporting year” based on the qualitative and quantitative indicators.¹⁵⁸ NSF also conducts a third year review based on a site visit by independent evaluators and receives a “written report of accomplishments” from awardees prior to the site visit or

¹⁵⁵ Draft Collaboration Agreement, *supra* note 142. These responsibilities include holding ADVANCE meetings, coordinating pertinent information regularly among grantees, offering technical advice and guidance, and providing feedback to awardees based on reports, periodic site visits, and “the many contacts and interchanges involved in the monitoring.” *Id.*

¹⁵⁶ The NSF program officer offers “participation in resolution of governance, programmatic, technical, managerial, and/or scheduling concerns” as well as “technical guidance and/or advice, especially with regard to the integration, collaboration, and coordination with other ADVANCE projects funded by NSF.” *Id.*

¹⁵⁷ *Id.* at 8.

¹⁵⁸ *Id.*

reverse site visit performed as part of that review.¹⁵⁹ “The purpose of the review is to conduct an in depth evaluation of performance, assess progress towards goals, and to provide advice.”¹⁶⁰ Continuation of NSF support “depend[s] upon an annual review of accomplishments, availability of funds, and progress toward goals.”¹⁶¹

Peer review plays an important role in ADVANCE’s selection, feedback, monitoring, and evaluation process. Grantees are expected to provide for third party consultation and evaluation as part of their grant applications. Experts in the field, including other ADVANCE principal investigators, participate in evaluating grant proposals and in performing site visits. Grant recipients agree to participate in reverse site visits and to collaborate with others as part of their institutional transformation grants.¹⁶²

The program staff is held accountable to NSF by the same processes of peer review and independent evaluation, and the program itself was recently reviewed by an external committee of visitors.¹⁶³

NSF also assumes responsibility for sharing and disseminating knowledge developed through the ADVANCE grants and in developing a network among science and technology faculty at universities around the country. It holds annual grantee meetings, funds regional workshops and consultation among grantees, includes plans for dissemination in the program requirements, and has supported the publication of research findings in books and journals. It has included non-ADVANCE institutions in its annual meetings and has encouraged ADVANCE principal investigators to play a national leadership role in assisting institutions involved in gender equity projects. It has, in consultation with ADVANCE recipients, revised the program solicitation to avoid reinventing the wheel, to consolidate and build on current knowledge, and

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *Id.* at 7.

¹⁶² In the first round of ADVANCE, NSF received seventy-two institutional transformation proposals. It convened three review panels, with eight or nine people on each panel, which represent a range of relevant disciplinary and practical backgrounds. The review panel reads the grant applications, writes reviews, meets and deliberates about each proposal, and recommends appropriate action. Hogan described the factors taken into account in selecting the panels:

We spent a lot of time as a committee, defining potential lists of reviewers. We were trying to bring all the disciplinary perspectives into this pool initially. We also thought about people who had been involved in programs that were similar, people who ran these programs in private foundations, in industry who were working in broadening participation, people who had studied the issues ... affecting women’s participation. The precise identity of reviewers remains confidential.

Interview with Alice Hogan, *supra* note 135.

¹⁶³ NSF “relies on the judgment of external experts to maintain high standards of program management, to provide advice for continuous improvement of NSF performance, and to insure openness to the research and education community served by the Foundation.” NAT’L SCI. FOUND., FY 2005 NSF COMMITTEE OF VISITOR (COV) REVIEWS 1 (2005), *available at* <http://www.nsf.gov/od/oia/activities/cov/cross/2005/ADVANCEcov.pdf> [hereinafter COV REVIEW].

to use the ADVANCE network to enable new institutions to act upon the knowledge and norms developed through the institutional transformation grants.

C. Institutional Transformation at the University of Michigan

The UM was one of nine institutions to receive an institutional transformation grant in the first round of ADVANCE. UM was involved in efforts to create a diverse faculty long before ADVANCE.¹⁶⁴ Many individuals and groups had conducted studies of the status of faculty women at UM and had made efforts to recruit, retain, and promote tenure-track women in basic science. But these efforts had not significantly increased the participation of female tenure track faculty in the basic sciences and engineering.¹⁶⁵

UM was prompted to take a hard look at its track record as a result of its participation in a meeting organized by Charles Vest, the President of MIT, in the wake of the MIT report. Vest invited the presidents of eight major research universities, along with their provosts and two women faculty members from each university, to come to MIT for a day's discussion on women in academic science and engineering.¹⁶⁶ Lee Bollinger, then the president of UM, and Abby Stewart, a psychology professor and director of the Institute for Research on Women and Gender ("IRWG"), participated in that meeting, along with two other senior women scientists at UM.¹⁶⁷ The meeting produced a public commitment by the participating presidents to increase the participation of women in science at their institutions.¹⁶⁸ It also created the impetus for a more ambitious reform effort at UM. As a follow-up to the MIT meeting, Bollinger established a Gender in Science and Engineering Committee,¹⁶⁹ which then asked Stewart to lead a team that prepared and submitted a proposal for an Institutional Transformation Grant to NSF.

¹⁶⁴ Michigan took a leadership role in defending affirmative action in admissions, most notably through its role as defendant in *Grutter v. Bollinger*. 539 U.S. 306 (2003).

¹⁶⁵ See ADVANCING SCIENCE AND ENGINEERING AT THE UNIVERSITY OF MICHIGAN: A REPORT AT THE MIDPOINT OF THE NSF PROJECT 2 (September 2004), available at <http://www.umich.edu/~advproj/midtermreport.pdf> [hereinafter MIDPOINT REPORT]; PROPOSAL SUMMARY, *supra* note 33, at C-3 to C-5 (documenting past and recent efforts to address issues facing women faculty).

¹⁶⁶ "This meeting brought together the presidents of Cal Tech, Stanford, Berkeley, the University of Michigan, Harvard, Yale, Princeton, and Penn, along with their "delegations," to meet with the MIT group for a Sunday dinner and an all day discussion on Monday." Bailyn, *supra* note 26, at 141.

¹⁶⁷ ADVANCE: Assessing the Academic Work Environment for Women Scientists and Engineers 12 (2002), available at <http://www.umich.edu/~advproj/climatereport.pdf> [hereinafter Baseline Study].

¹⁶⁸ MIT News Office, Statement on Gender Equity in Academic Science and Engineering (Jan. 30, 2001), <http://web.mit.edu/newsoffice/2001/genderstatement.html>.

¹⁶⁹ This committee included the president; provost; dean of engineering; dean of medicine; dean of literature, science and the arts; associate provost; and Abby Stewart.

At UM, a group of five people took responsibility for assembling individuals and institutions that had been involved in promoting gender and racial equity, as well as leaders identified as crucial participants in an effort to institutionalize change.¹⁷⁰ In addition to Stewart, who serves as project director and principal investigator (“PI”), the team included the deans of the three colleges employing the largest number of science and engineering faculty and an associate provost, who serve as co-PIs. All held administrative roles that would allow them to make an impact. These five became the project’s steering committee. The project’s administrative staff also pulled together studies documenting what was already known about the status of women and women of color at the institution and undertook additional preliminary studies to provide information necessary to prepare a proposal. They canvassed the available research on the barriers to women’s advancement and effective strategies for addressing those barriers, as well as the voluminous reports from other institutions that had conducted gender and racial analyses.

The team determined that the overall proportion of women who are tenure-track faculty in science and engineering was nine percent in Literature, Science and the Arts (“LSA”), eleven percent in engineering, and twenty-five percent in medicine, and those percentages had not changed dramatically over the last ten years.¹⁷¹ “Moreover, the representation of women faculty in these fields is far below the rate of women achieving the doctorate in these same fields.¹⁷² The grant was set up to identify the specific barriers contributing to these persistent disparities at both the university and departmental level, to develop a multi-level intervention strategy to address these barriers, to evaluate the results of these interventions and revise strategies in light of these evaluations, and to disseminate data about their efforts.

During the first phase of the project, which began before UM actually received funding, the project team conducted a baseline climate survey of the entire campus to “enable the project to target areas for change.”¹⁷³ The survey findings revealed that “women scientists and engineers experience a more negative work environment than do men scientists and engineers or women social scientists.”¹⁷⁴ The study also

¹⁷⁰ Case studies and reports of other institutions suggest that organizational catalysts are playing an important role in other ADVANCE programs as well. See Idalia Ramos & Sara Benítez, *Advancing Women Science Faculty in a Small Hispanic Undergraduate Institution*, in *ADVANCING WOMEN IN SCIENCE AND ENGINEERING: LESSONS FOR INSTITUTIONAL TRANSFORMATION* (Abigail Stewart, Janet Malley & Danielle LaVaque-Manty eds.) (forthcoming 2006).

¹⁷¹ PROPOSAL SUMMARY, *supra* note 33, at C-2.

¹⁷² *Id.* (“For example, 23% of the science doctorates in LSA in 1999 were earned by women while only 9% of the science faculty were women.”)

¹⁷³ BASELINE STUDY, *supra* note 167, at 5.

¹⁷⁴ *Id.* at 45.

concluded that “the mentoring of female assistant professors in science is inadequate in most areas, and the departmental climate is chilly for women in them.”¹⁷⁵ Women reported a higher level of formal and informal committee service, without a proportional representation in leadership positions.¹⁷⁶ In addition, department chairs’ fairness and ability to create a positive atmosphere emerged as a serious concern. “Discussions with faculty in focus groups and interviews suggest[ed] that these problems may stem, in part, from an autocratic or oligarchic departmental culture, which is characterized by the uneven socialization of new faculty, secrecy regarding policies and procedures, and the placement of decision making authority in the hands of a few.”¹⁷⁷ Focus groups identified the secrecy surrounding decision making to be particularly problematic with regard to recruitment, which continued to proceed via the “old boy network,” even with the formulation of official search committees.¹⁷⁸ The survey also identified differences in household structure that placed greater demands on women scientists and engineers and which current policies failed to take into account.¹⁷⁹

The team developed a series of initiatives that respond directly to the barriers to women’s participation identified through their research. These programs were organized around four goals: (1) recruiting more talented women scientists and engineers; (2) maintaining the numbers by increasing the likelihood that women thrive at UM; (3) improving the climate by making sure that the work environment supports women (and, in the process, men) adequately; and (4) encouraging women scientists’ career development.¹⁸⁰ For each area, the team put together working groups consisting of key actors who are affected by, have expertise in, or are in a position to take action to address the problems.¹⁸¹ These working groups included advocacy group members, experts on gender and race, and administrators willing to commit themselves to increasing women’s participation.

The working groups developed an integrated strategy aimed at transforming people’s understanding of how gender operates and increasing departments’ capacity to attract, retain, and advance successful

¹⁷⁵ *Id.*

¹⁷⁶ *Id.* at 30. They report higher levels of gender stereotyping and gender and racial/ethnic tokenism and rate their units as less tolerant and positive. *Id.* at 44.

¹⁷⁷ *Id.* at 44.

¹⁷⁸ *Id.* at 44.

¹⁷⁹ The baseline study determined that women at UM “are significantly less likely to be married or partnered. If partnered, women scientists and engineers are significantly more likely to have a spouse or partner who is employed full time.” *Id.* at 42. These findings are consistent with national trends.

¹⁸⁰ MIDPOINT REPORT, *supra* note 165, at 1.

¹⁸¹ For a detailed discussion of these programs in operation, see generally *id.*

women in academic science. Individual initiatives include faculty career advising, research funds, and networks supporting women scientists and engineers. Departmental initiatives support departments aiming to improve their climates through departmental transformation grants and self studies. Campus-wide initiatives include task forces producing policy change, chair training, data-based workshops for disciplines, interactive theater interventions, and Strategies and Tactics Recruiting to Improve Diversity and Excellence (“STRIDE”), which has become a centerpiece of the UM initiative and consists of a faculty committee formed by the ADVANCE team to strengthen recruitment and hiring of women scientists using peer education.

This intervention strategy was based on the premise that, given the gap between doctoral production and faculty application, a passive “recruitment” strategy of waiting for women to apply for open positions will not increase the numbers of women faculty; a proactive approach is essential. Key tasks for the committee included increasing faculty awareness of issues involved in recruiting women and providing conceptual and practical support to faculty eager to work on recruitment.¹⁸² The committee works with chairs, faculty search committees, and other faculty and administrators involved with recruitment and retention.¹⁸³

UM’s ADVANCE grant has institutionalized a structure that, from the outset, placed gender equity experts at the table with high-level university administrators and gender equity advocates. UM ADVANCE uses its resources to support collaborations among advocates, experts, and governance actors and to locate those collaborations at crucial decision points such as faculty search processes and leadership development and selection. It provides change agents in different positions within the institution with the information, networks, and resources to maximize their legitimacy and impact.¹⁸⁴ The role of individual and institutional problem solving intermediaries as catalysts for change is pivotal.

Although UM ADVANCE began operation in 2002, various quantitative and qualitative measures indicate that it has already produced significant positive effects for women scientists and for their departments. The number of women hired annually for science and engineering faculty positions has increased three-fold since 2001, the year NSF first supported UM’s ADVANCE program as a five-year project. Besides raising the number of women hired for faculty positions, nine women scientists and

¹⁸² Abigail J. Stewart, Janet E. Malley & Danielle La Vaque-Manty, *Faculty Recruitment: Mobilizing Science and Engineering Faculty*, in *LEARNING FROM ADVANCE* (Abigail J. Stewart & Janet E. Malley, eds.) (forthcoming 2006).

¹⁸³ STRIDE: Strategies and Tactics for Recruitment to Improve Diversity and Excellence, <http://sitemaker.umich.edu/advance/STRIDE> (last visited Apr. 17, 2006).

¹⁸⁴ See *infra* Part III.A.

engineers have been appointed to leadership positions. A January 2005 campus climate survey found an improved work environment for women science and engineering faculty.¹⁸⁵ Comparing the climate studies conducted in 2001 and 2005 shows evidence of a friendlier, more collegial climate for women, one that is actively engaging with issues of gender.¹⁸⁶ The responses indicated improvements in leadership through “the appointment of department chairs, deans and executive officers (both male and female) who are more sensitive to diversity and climate issues.”¹⁸⁷ Interviews also suggest increased opportunities for networking and informal interaction. The survey results, along with interviews conducted for this study, reflect increased attention to issues of diversity and climate. The survey also showed that this increased attention to gender issues has had the side effect of increasing women’s sense of being under scrutiny and producing varying degrees of backlash and resistance.¹⁸⁸ Overall, the NSF site visit team, which evaluated the program in September of 2004, “found an institution in the process of change in the direction of its stated goals.”¹⁸⁹ In December of 2005, UM officials decided to make ADVANCE permanent with funding commitments approved through at least 2011.¹⁹⁰

III. RESOLVING THE DILEMMAS OF DIVERSITY

This Part analyzes the strategies that NSF ADVANCE has used to navigate the dilemmas of institutional change, legality, and public intervention.

A. *Organizational Catalysts: Institutional Roles to Sustain Institutional Transformation*

The first dilemma described in the previous section highlighted the need to sustain institutional mindfulness in the many locations affecting women’s advancement. A key aspect of ADVANCE’s strategy is the development of a new role that has proven to be pivotal in enabling institutional mindfulness and systemic change. Because of their core function of mobilizing change at the intersection of different systems, I have called these individuals “organizational catalysts.” Organizational catalysts are individuals who operate at the convergence of different

¹⁸⁵ UM NSF ADVANCE Project, Summary of the Analyses of the Survey of the Climate for Women Scientists and Engineers in 2001 and 2005 2 (2005), available at <http://www.umich.edu/~advproj/climate2005.pdf> [hereinafter Comparative Climate Study].

¹⁸⁶ *Id.* at 8 tbls.1 & 2.

¹⁸⁷ *Id.* at 5.

¹⁸⁸ *Id.* at 8 tbls.1 & 2.

¹⁸⁹ SITE VISIT REPORT, *supra* note 8, at 1.

¹⁹⁰ University of Michigan News Service, Women in Science, Engineering: U-M Makes ADVANCE Permanent (Dec. 14, 2005), <http://www.umich.edu/news/index.html?Releases/2005/Dec05/r121405a>.

domains and levels of activity. They leverage knowledge, ongoing strategic relationships, and accountability across systems.¹⁹¹ This role places individuals with knowledge, influence, and credibility in positions where they can mobilize institutional change. Organizational catalysts are not unique to ADVANCE; they can be found in many settings. ADVANCE, however, places them at the center of its implementation strategy. It does this both by investing organizational catalyst roles with resources and legitimacy, and by reconfiguring existing administrative roles to integrate gender equity responsibilities.

1. Creating New Roles: Connecting Domains, Discourses, and Knowledge

In 2002, Mel Hochster, a distinguished University of Michigan mathematician and member of the National Academy of Sciences, won the Margaret and Herman Sokol Faculty Award in the Sciences. One of the University's most prestigious honors, the award carried with it a widely-attended public lecture, typically used as an opportunity to celebrate the recipient's eminence and to feature path-breaking research. Hochster chose this occasion to speak to a room full of mostly male scientists and mathematicians about gender bias. Hochster's award lecture, entitled "Women in Mathematics: We've Come a Long Way -- or Have We?", discussed the situation of women mathematicians and other women scientists, partly from a historical perspective and partly in terms of problems that exist today. He described "overwhelming evidence of gender bias in the evaluation of job candidates and in many other contexts. Even when procedures seem to be objective and fair, studies have shown that gender bias is significant and pervasive."¹⁹² Hochster's speech was described by many as an important turning point in the institution. In the words of one high-level administrator involved in gender equity at UM:

People walked out of that meeting like they'd been thunderstruck. "I had never thought about this gender thing before. . . ." It was that he, who was a member of the National Academy of Sciences, gave this talk. . . . It was the drama of his gesture that really affected people. The information had been out, and he just had such a huge impact. Why? The National Academy of Sciences gets it. He gives over this important occasion for himself. Instead of talking about math, he talked about the problem of

¹⁹¹ Organizational catalysts could be seen as a bridging "structural holes" through public and accountable intermediation. See Mitchell, *supra* note 31, at 11.

¹⁹² *Hochster Named Distinguished University Professor*, ContinuUM, NEWSLETTER OF THE DEPARTMENT OF MATHEMATICS (Univ. of Mich., Ann Arbor, M.I.), 2003-2004, at 3.

gender in science. It was hugely important -- an amazing lesson in how this progresses.¹⁹³

How did this prominent mathematician become such an effective gender mobilizer? Hochster was energized by becoming part of STRIDE -- a group of scientists who used the methodology of scientific research and data to educate themselves and others about the dynamics, causes, and remedies for subtle gender bias. STRIDE identifies highly respected faculty who develop gender equity expertise and then work with administrators and faculty within their own professional communities to communicate knowledge about these gender dynamics and their remediation.¹⁹⁴ Hochster's speech dramatically illustrates the power of placing individuals with social and intellectual capital in positions to mobilize learning and change. But Hochster did not become an "organizational catalyst" alone or by accident. His role resulted from the efforts of others playing a similar role, only on a broader scale. More specifically, the ADVANCE steering committee developed STRIDE as part of a broader strategy to leverage the pedagogical capacities of strategically located individuals throughout the institution.

The principal investigator ("PI") role, which NSF builds into its award process, is the linchpin in the development of this institutional design. Like the conventional principal investigator, ADVANCE PIs and co-PIs collaborate with a research team to develop experiments in their institutions, analyze their effects, and report on them.¹⁹⁵ They wield the responsibility, accountability, and legitimacy built into the PI status. But NSF ADVANCE reframes the PI role to take account of the systemic dimensions of the gender equity project. It reinvents the PI role as a research-based change agent within the institution. NSF casts the PIs of the ADVANCE projects they fund as the conceptualizers, planners, coordinators, conveners, and mobilizers of the institutional transformation process.¹⁹⁶ The NSF selection process weighs the implementation team's qualifications, position, and structure as a key consideration in awarding grants. At UM, the ADVANCE steering committee (consisting of the PIs and co-PIs) oversees a strategic planning process connecting gender and racial inclusiveness to core concerns of the institution.

The background and qualifications articulated by ADVANCE and possessed by PIs and STRIDE members equip them to play the

¹⁹³ Interview with Dean and ADVANCE co-PI (June 2, 2004).

¹⁹⁴ Other institutions have created similar roles with different titles, such as the equity advisors at University of California, Irvine. See UCI ADVANCE Program, <http://advance.uci.edu> (last visited Feb. 26, 2006).

¹⁹⁵ Many grants have both PIs and co-PIs. In the interests of clarity, "PI" will refer to both.

¹⁹⁶ See *supra* p. 39 (describing PIs' role as prescribed by NSF and implemented by UM).

organizational catalyst's multiple roles. Unlike many university affirmative action officers,¹⁹⁷ ADVANCE PIs tend to be accomplished scholars with administrative experience within the department or the university who are known for their commitment to academic quality and equity. They often come into the position having played a significant role as a mentor to graduate students and junior faculty and having worked with faculty and administrators at different levels within the University. They are highly respected faculty bringing considerable knowledge, administrative experience, working relationships, and professional legitimacy to their role as steering committee members.

These "organizational catalysts" were identified as one of the most important factors in what was perceived as ADVANCE's success at UM. Most of those interviewed did see an improvement in search and hiring patterns, the culture of the institution, the involvement of women in positions of influence, and the overall academic environment.¹⁹⁸ They viewed these changes as fragile and incomplete, but dramatic nonetheless, particularly when compared to previous gender equity initiatives involving science and engineering. The observations about organizational catalysts at UM apply elsewhere as well, allowing for variation in the specific details of their roles within their own institutions. Although UM's organizational catalysts have tailored their interventions to their institution's culture,¹⁹⁹ their key strategies have been utilized in other institutions' gender and race initiatives. Other ADVANCE institutions have developed analogous roles for PIs as part of their institutional transformation grants.²⁰⁰ Diversity initiatives have also produced hybrid roles for faculty that are analogous to STRIDE, such as the Equity Advisors at University of California, Irvine.²⁰¹ Non-ADVANCE institutions have developed leadership roles for respected faculty that resemble in important respects the organizational catalyst role.²⁰²

¹⁹⁷ Id.

¹⁹⁸ These impressions of progress were confirmed by external evaluators. See SITE VISIT REPORT, *supra* note 8.

¹⁹⁹ For example, the important role of the Center for Research on Learning and Teaching ("CRLT") in facilitating culture change at UM grows out of the organization's track record in working with faculty and students to improve pedagogy.

²⁰⁰ See, e.g., Ramos & Benítez, *supra* note 170; Case Western Reserve University, Annual Report for National Science Foundation ADVANCE Project, Academic Careers in Engineering and Science (ACES) (2004 – 2005), available at http://www.case.edu/admin/aces/documents/AnnualReport_YR2.pdf.

²⁰¹ See UCI ADVANCE Program Website, *supra* note 194 (defining an Equity Advisor as "a senior faculty member, appointed as faculty assistant to the dean in their respective schools, who participates in faculty recruiting by approving search strategies and raising awareness of Best Practices. Additionally, they organize faculty development programs, with both formal and informal mentoring, as well as address individual issues raised by women faculty.").

²⁰² Harvard based its decision to create the position of Senior Vice Provost for Diversity and Faculty

I have analyzed the interviews and reports to identify the strategies that account for the effectiveness of the PI, steering committee, and STRIDE members as catalysts of meaningful systemic change. This analysis reveals three such strategies: (1) mobilizing varied forms of knowledge to promote change, (2) developing collaborations in strategic locations, and (3) maintaining pressure and support for action.

a. Information Entrepreneurs: Mobilizing Varied Forms of Knowledge to Enable Change

Organizational catalysts have access to many forms of information relevant to addressing gender issues. Social science research provides one key form of knowledge. As part of their researcher role, PIs conduct or oversee surveys and statistical studies documenting patterns in women's participation throughout academic life. Their long-standing institutional relationships and status as PIs helps them gain access to data that have previously been unavailable or difficult to obtain. Their knowledge and influence enable them to gather crucial information about the micro-level decisions that accumulate to shape access, such as data on offers, work assignments, research support, and the composition of the candidate pools actually considered in a search. They can then institutionalize this data gathering so that reliable and relevant information is routinely produced. The PI and ADVANCE staff buttress their analysis of institutional data with climate and demographic studies from other institutions. They also collate and analyze the relevant scholarly literature on how gender bias operates in evaluations of men and women and study the types of interventions proven to reduce this bias. Based on this multi-faceted knowledge, the steering committee then develops a conceptual framework to guide the institutional transformation project. According to one interviewee:

The strength of ADVANCE here is the bringing together of the social scientists and the scientists. Having someone with [the PI's] expertise as the leader of this and the scientists and engineers also deeply involved is important. We took the approach of study from a social science perspective. What Michigan is known for as an institution is social science research.²⁰³

In addition to this empirical evidence, the steering committee's

Development on the track record of ADVANCE institutions, as well as other institutions' creation of such positions. Harvard looked to, among other institutions, Columbia University, which created the position of Vice Provost for Diversity, and Princeton University, which created the position of Special Assistant to the Dean of the Faculty. HARVARD TASK FORCE REPORT, *supra* note 19, at 11.

²⁰³ Interview with ADVANCE co-PI (June 1, 2004).

prior work within the institution -- along with their extensive interactions with different constituencies around issues of gender -- provides them with cultural knowledge about the institution they seek to influence. The steering committee members often spoke of their familiarity with the history leading up to current conditions, developed through their experience working on these issues over the years. They described knowledge of where important decisions get made, who has influence within the department, and how people interact and advance. This informal knowledge equips them to work effectively within departments, to enlist allies, and to head off problems before they erupt into crises.

The PIs' work as troubleshooters and ombudsmen provides them with informal knowledge about the breakdowns or bottlenecks affecting women in particular departments. Junior faculty come to the PIs with issues or problems that they do not feel safe addressing directly within departments, particularly when those issues involve more powerful members of their department. PIs also work with department chairs and deans when crises arise, such as a problematic chair, an abusive colleague, or a job offer from a competing institution. They strategize about how to address recurring or serious problems arising within particular departments that undermine the full engagement of women and people of color. Through this work, PIs learn about difficulties stemming from problematic managers, dysfunctional systems, or simple lack of awareness and are in a position to intervene at the appropriate level within the university. Their work over time and across different departments also provides information about overarching problems that require coordinated or centralized interventions. For example, a committee focusing on recruitment, retention, leadership, and career development produced information about the impact of dual careers and work-family issues on recruitment and retention.²⁰⁴ The group identified the need for systemic change to address these problems that recur at the departmental level. The involvement of high-level administrators in the committee's ongoing work facilitated a successful process of policy change and implementation:

Some of the recommendations require university involvement, i.e., day care. Some of it is college level, some departmental. We have implemented a lot of these things. We will have a training manual about recruiting for search teams to talk about strategies and how to create a diverse pool and evaluating candidates. There are big issues with dual career that we can address because we're

²⁰⁴ See REPORT OF THE SUBCOMMITTEE ON FACULTY RECRUITMENT, RETENTION AND LEADERSHIP, available at http://www.umich.edu/~advproj/GSE-_Faculty_Recruitment_Retention.pdf (last visited Mar. 18, 2006).

so big, but we needed formal mechanisms to make it easier to work across the college boundaries.²⁰⁵

PIs draw on their knowledge constellation to calibrate the information's form and function to the context and problem at hand. They use empirical data to demonstrate the existence of the problem and examples of success to demonstrate the possibility of change. They analyze their informal interactions to determine the need for more systematic research. They also rely upon qualitative information gleaned from troubleshooting to help identify the source of gender disparities evident in the demographic data. Conversely, patterns revealed by the empirical research guide how and where to focus their problem solving interventions. The combination of methodologies permits strategic use of additional empirical research, based not only on whether the problem is well-documented in the secondary literature but also on an assessment of what it will take to reach different constituencies.

The PIs' combined responsibility for research and action may explain their extensive efforts to tailor the form of communication to particular contexts and disciplinary cultures. They devote considerable attention to the question of how knowledge about the dynamics of gender bias can be effectively communicated to diverse (culturally, methodologically, and demographically) communities. They thus value social science research not only for what it teaches about the underlying problem, but also for its cultural authority. They act on the premise that data are only effective if they reach the people who are in a position to act on that information. So, the PIs observed that data must be communicated repeatedly and in many different forms. They also recruit people with legitimacy within a particular department or discipline to communicate information in the currency of that domain.

The steering committee uses knowledge to legitimize the need for change, to empower people to act, and to involve key collaborators. Social science data played a significant role in recruiting people to become active in ADVANCE. One STRIDE member describe his reaction to the PI's presentation of social science evidence as a turning point in his decision to join STRIDE:

I said "no" initially. . . partly I was a little bit skeptical that a committee could do anything effective. . . . But after I heard her I changed my mind and agreed to be on the committee. . . . There was a lot of information about climate at the U of M, and that made me feel that the

²⁰⁵ Interview with Dean, ADVANCE PI, and Chair of Subcommittee on Faculty Recruitment, Retention and Leadership (June 1, 2004).

problem was larger than I had thought. I think everyone on the STRIDE committee, as we studied the literature on gender bias, realized that the problems were larger than people thought.²⁰⁶

Every STRIDE member interviewed emphasized that their exposure to the social science data also increased their capacity and willingness to intervene about gender. Knowledge, in the currency of science with data to support it, gave them tools, arguments, and confidence that they otherwise did not have. STRIDE members used the credibility of science to legitimate gender bias as a serious problem justifying institutional change:

They were data-driven, so it's incredibly convincing to skeptics. In our department, people were open enough that they would come out saying, "Wow, I didn't know that." We had them come in again this fall, and required the search committees to be there. A lot of what they do is provide data on evaluation bias. It becomes a very scientific discussion about the evidence and the nature of the evidence. People get engaged in the substance of it as a scholarly issue. This was timed to take place directly before a search. I had specifically talked to them about letters of recommendations, and the search committee read papers on this. . . . People went back and started looking at their own letters.²⁰⁷

The PIs, along with STRIDE members, also learned through experience that, for people to internalize knowledge, they require adequate incentives to pay attention to it.²⁰⁸ One strategy the PIs used to motivate learning involved connecting the gender-equity data to core concerns of the department:

Another use for the data was to go into each department with a picture of national and local data and have a one-on-one conversation with the chair. . . . To get the chair's attention, we would figure out something that bothers

²⁰⁶ Interview with STRIDE member (June 2, 2004).

²⁰⁷ Interview with STRIDE member and Department Chair (June 2, 2004).

²⁰⁸ This is a specific example of the more general role of incentives and intermediaries in determining the effectiveness of information disclosure. See Archon Fung, Mary Graham & David Weil, *The Political Economy of Transparency: What Makes Disclosure Policies Sustainable?* 40–42 (J.F.K. Sch. of Gov't Inst. for Gov't Innovation, Occasional Paper Series No. 02-03, Winter 2002), available at <http://www.archonfung.net/papers/FGWTransparency1.pdf> (arguing that a role like that of organizational catalyst could play a significant part, both at the individual and institutional level, in increasing the efficacy of information-forcing regulation).

them. Like graduate students not going on to PhDs or academic positions or attrition. . . . This provided a way to reach a department where not much or nothing is happening.²⁰⁹

With experience, STRIDE shifted its focus to target the pivot points of decision and action and the individuals directly involved in those decisions, such as active searches or looming retention issues. This made STRIDE's information relevant, important, and immediately usable.

The PIs did not limit themselves to scientific modes of gathering and communicating knowledge. They developed other methods that could motivate interactions among faculty about issues that were never before recognized or discussed. One way they did this was through teaming up with the Center for Research on Learning and Teaching ("CRLT"), a well-established teaching and research institute that used interactive theater to build knowledge.²¹⁰

Using data from our interviews and from many studies nationally, they developed a sketch that presents a faculty meeting discussion of a recruitment. The sketch illustrates how a variety of non-conscious schemas and gender dynamics can lead a group to . . . less than optimal decision making about hiring and other matters.²¹¹

The PIs connected CRLT players to deans and faculty, thus enabling a discussion of issues that must be surfaced as part of a process of culture change. As one participant noted:

Theater draws you in in a way that empirical data doesn't. There's an immediacy that you almost have to react to. It is when you get beyond resistance . . . and into the climate issues. People start talking about things in a way they haven't talked about it before.²¹²

The steering committee also participates in awarding funds designed to encourage departmental experimentation, and it uses the grant-making process to influence conduct and shape priorities within departments that choose to participate. These funds have supported departmental transformation efforts that operate like mini-NSFs located

²⁰⁹ Telephone Interview with Steering Committee Member (Oct. 29, 2004).

²¹⁰ Founded in 1962, CRLT "is dedicated to the support and advancement of learning and teaching at the University of Michigan," and it provides "a comprehensive array of curriculum and instructional development activities." Center for Research on Learning and Teaching, <http://www.crlt.umich.edu> (last visited Mar. 17, 2006).

²¹¹ Interview with administrator of CRLT Players Theatre Program (June 1, 2004).

²¹² Interview with staff member, CRLT Players Theatre Program (June 2, 2004).

within their own institution, using funding to encourage experimentation and creativity. They provide support for innovative approaches to routine practices such as recruitment, selection processes, mentoring, and faculty support. The steering committee helps develop criteria for allocating these funds, offers technical assistance to applicants, and facilitates the process by which funding decisions are made.

b. Developing Collaborations in Strategic Locations

A second overarching function of organizational catalysts involves cultivating new “communities of practice” among individuals who share common interests, experiences, or concerns but otherwise lack opportunities to connect.²¹³ Organizational catalysts at UM create occasions for women and men concerned about gender to meet, share their experiences, develop effective strategies, learn from mistakes, and take action to address issues of common concern. The PIs designed their programs supporting individual faculty to operate within networks that can play a role in institutional transformation. Faculty receiving grants agree to participate in collective events and are encouraged to play more of a leadership role within their departments and in ADVANCE. The PIs also play a role in encouraging people in similar roles to meet regularly and work together. Their role in the formation of an informal network among the women science chairs offers one example:

There are now five women chairs of science departments campus-wide. . . . So we decided, ok, five’s a number. We could have a group. So we invited them to lunch. They all came. I said at the end of this, . . . you guys could meet on a regular basis and be a group. . . . We’ll convene you, we’ll schedule you, we’ll make the reservation, we’ll pay for lunch, but you don’t need to have us there. . . . By the time they left, they wanted monthly meetings. . . . They were eager. They used the time, they came up with dilemmas they shared with each other and got advice from one another. It was great. So they’re learning to do it. They are learning how to be a collective and how to define their own needs.²¹⁴

Other newly formed working relationships have put STRIDE

²¹³ For a more general discussion of the role of communities of practice in leveraging knowledge, see ETIENNE WENGER, RICHARD McDERMOTT & WILLIAM M. SNYDER, *CULTIVATING COMMUNITIES OF PRACTICE* 4 (2002) (“Communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis.”).

²¹⁴ Interview with ADVANCE PI (June 1, 2004).

committee members and others committed to women's advancement in regular contact with people in power around issues directly affecting women's advancement. One chair has worked very closely with a member of his department who is also on the executive committee and a member of STRIDE. Over time, the chair describes how he has become more mindful as a result of those interactions:

There are simple, commonsensical things that [she] keeps pointing out to me. We really need to make sure that we shouldn't have an admissions committee where there is not a woman on it. We shouldn't have a graduate committee which has advising responsibilities for students without a woman on it. [The STRIDE member] is the one who is my conscience. Anything I start to do where I am not thinking, [she] points out and says, you ought to think about doing it differently. I say, whoops, you're right.²¹⁵

The ADVANCE steering committee members also meet regularly with chairs, deans, and other governance actors. These meetings provide regular occasions to connect gender issues to routine decisions. The steering committee creates new collaborations as well, bringing together groups that would otherwise never interact to come up with solutions addressing common problems. They have developed task forces and committees to integrate new understandings about gender equity and organizational improvement into policy and administrative governance. They also identify faculty in a position to exercise moral leadership and then equip them with the tools and support to speak up when they see a problem involving gender in the course of their daily routines. They thus bolster decisions to exercise everyday leadership at key pivot points defining access and participation. The architecture of the ADVANCE initiative increases the number of these pivot points and decreases the risk of taking action. These structural innovations sustain the conditions permitting activism to flourish and leadership to emerge.²¹⁶ They introduce immediate political opportunities for action and create structures for people to organize into a collective around areas of common concern.²¹⁷

NSF places PIs in a position to become national intermediaries of institutional change. Through their NSF-prescribed roles, they collaborate with their counterparts at other institutions, developing best practices,

²¹⁵ Interview with Department Chair (June 1, 2004).

²¹⁶ See generally Katzenstein, *supra* note 61; DEBRA E. MEYERSON, TEMPERED RADICALS: HOW PEOPLE USE DIFFERENCE TO INSPIRE CHANGE AT WORK 124 (2001) (summarizing research on conditions for fostering collective action); David A. Snow et al., *Frame Alignment Processes, Micromobilization, and Movement Participation*, 51 AM. SOC. REV. 464 (1986).

²¹⁷ See *id.*

metrics of effectiveness, and toolkits for intervention that can be adapted to different institutions.²¹⁸ They evaluate each others' programs, both informally and as site visitors and external evaluators. They are invited into institutions that are beginning the process of institutional change, where they speak publicly, share their knowledge with local leaders, and give feedback on proposed plans. They are also contributing to the field's development by writing in peer reviewed journals and editing books.²¹⁹ As such, they cultivate collaborative networks across institutions, which enable them to facilitate the transfer of information. They also enable universities to keep pace with strategies and technologies for promoting gender and racial equity.²²⁰

c. Creating Pressure and Support for Change

A third crucial role performed by organizational catalysts involves keeping the pressure on. The steering committee members have referred to themselves as burrs, nudges, "articulate pains in the ass," monitors, and prodders of change. They create occasions and incentives for people in positions of responsibility to act and for people who care about gender to press for change. They maintain the institution's focus on gender as part of its core mission.²²¹ They keep problems on the front burner and help put together workable solutions, making it harder not to take action.²²² They see their role as requiring them to "hold the institution's feet to the fire and make sure that [change] gets institutionalized."²²³

How do organizational catalysts do this? They spot gender issues when they come up and make sure they are the subject of explicit

²¹⁸ For example, Virginia Valian, author of *WHY SO SLOW?*, *supra* note 21, and co-PI of the Hunter College ADVANCE grant, has become a national leader in working with universities interested in understanding the role of cognitive bias and accumulated disadvantage. With a grant from NSF, she has developed a web-based tutorial called *Tutorials for Change: Gender Schemas and Science Careers*, which integrates, makes accessible, and updates research from psychology, sociology, economics, and neuropsychology. <http://www.hunter.cuny.edu/gendertutorial/> (last visited Mar. 19, 2006). Lisa Frehill, who was the PI in New Mexico, is now the director of ADVANCE at UC Irvine and a national expert on the design of information and evaluation systems. See *Proposed Toolkit for Reporting Progress Toward NSF ADVANCE: Institutional Transformation Goals* (Jan. 2005), available at <http://www.nmsu.edu/~advprog/toolkit-ja05-5.pdf> [hereinafter *Proposed Toolkit*].

²¹⁹ See, e.g., Stewart et al., *supra* note 182.

²²⁰ For a discussion of the role of networks in fostering learning and enabling change, see Walter W. Powell, Kevin W. Koput & Laurel Smith-Doerr, *Interorganizational Collaboration and the Locus of Innovation: Networks of Learning in Biotechnology*, 41 *Admin. Sci. Q.* 116 (1996).

²²¹ See MEYERSON, *supra* note 216, at 169 (describing importance of everyday leaders who push people to question understandings and deeply engrained work practices).

²²² They operate as ongoing "destabilizers" of organizational routine by generating occasions to ask insistent questions about problems revealed through ongoing inquiry. As such, they provide a way to operationalize what Charles Sabel and William Simon have referred to as "destabilization rights." Charles Sabel & William Simon, *Destabilization Rights: How Public Law Litigation Succeeds*, 117 *HARV. L. REV.* 1015 (2004).

²²³ Interview with ADVANCE PI (June 3, 2004).

discussion. They put issues affecting women's participation on the agenda. They help create multiple constituencies for change -- constituencies who otherwise would not see their interests as overlapping. They frame issues so that faculty concerned about the quality of the graduate student experience and about faculty retention join with those concerned about the climate for women and people of color to push for change.²²⁴ They arrange meetings with high-level administrators so that they can provide arguments from influential faculty together with advocates for improving the institution's involvement of women and people of color. They use the evidence from the data to demonstrate the existence of the problem and construct a case for action. They use their social capital and that of others whom they have brought into the process to make it more costly to do nothing. Perhaps most importantly, the organizational catalysts help figure out what to do, and then they perform the legwork to maintain momentum so that these proposed changes actually occur. Their sustained attention to the issue and their follow-through with concrete action plans makes it much easier for high-level administrators to take action.²²⁵

The organizational catalyst role thus offers a workable strategy for sustaining institutional learning and change. Organizational catalysts function as information entrepreneurs who marshal knowledge to understand the barriers to full participation and to develop ways of overcoming those barriers. They use their institutional legitimacy, combined with responsibilities for gender equity, to get powerful people to address the impact of their practices on women's participation. They also instill hope and trust in groups that have become skeptical about the possibility of full participation and open up avenues for their ongoing involvement in the change process.

2. *Hybrid Roles: Integrating Governance and Gender Equity Roles*

For the PIs' work to produce lasting change, the learning process they stimulate must be institutionalized; new understandings and practices must be built into the institution's frameworks, culture, routines, and values.²²⁶ Institutionalization depends upon engaging institutional

²²⁴ This bridging role is an example of what sociologists have referred to as "frame bridging" and "frame transformation." See Snow et al., *supra* note 216, at 467, 473 - 76 (explaining that a frame is the linkage of two ideologically congruent but structurally unconnected frames regarding a particular issue or problem, for example, problems of women's under-participation and dysfunctional governance systems. Frame transformation is the systematic alteration in how they understand the problem, in this case of the relationship of gender, merit based decision making, and productivity.).

²²⁵ See MEYERSON, *supra* note 216, at 169; WEICK, *supra* note 26, at 211 - 12 (discussing the role of subtle leadership that assists people in applying visions to their own activities, focused attention on specific relations within a system, and reaffirmation of shared values).

²²⁶ See MARY DOUGLAS, HOW INSTITUTIONS THINK 45 (1986); Ronald L. Jepperson, *Institutions*,

stakeholders with the power, incentives, and capacities to continually question and revise policy, practice, and culture over the long run.²²⁷ ADVANCE undertakes that institutionalization process by influencing grantees to develop hybrid roles integrating management and gender equity responsibilities.²²⁸ ADVANCE encourages grantees to place responsibility for ADVANCE's implementation with those occupying leadership positions within the university. Conversely, ADVANCE supports the involvement of gender experts and advocates in general governance.²²⁹ This hybrid strategy has the benefit of creating individual accountability for addressing gender and racial under-participation, which organizational theory scholarship shows to be essential to enabling organizational learning and change.²³⁰ At the same time, it avoids the risk of overspecialization of responsibility for racial and gender issues, which has had the tendency to marginalize organizational officials.²³¹

NSF ADVANCE encourages universities to integrate high-level administrators into the design of ongoing change. For example, an associate provost responsible for overseeing faculty affairs and the deans of the three major colleges became co-PIs on the UM ADVANCE grant. The deans were essentially drafted onto the project, without fully appreciating what they were signing on to do.²³² This move formalized the deans' responsibility and accountability for ADVANCE's success. Over time, it also enhanced and solidified the deans' commitment to gender equity as a priority:

One thing you learn about scientists -- they are very hierarchical and they are very driven by grant funding. They respect a funded project that comes down from the top. So to say, five years from now, the National Science Foundation will evaluate us on the success of this program,

Institutional Effects, and Institutionalism, in THE NEW INSTITUTIONALISM IN ORGANIZATIONAL ANALYSIS 143, 144 (Walter W. Powell & Paul J. DiMaggio eds., 1991); WEICK, *supra* note 26, at 410 - 11 (2001); Stephen R. Barley & Pamela S. Tolbert, *Institutionalization and Structuration: Studying the Links Between Action and Institution*, 18 ORG. STUD. 93, 111 (1997) (providing a framework for mapping changes in patterns of everyday action onto changes in organizational forms, ideologies, and large scale patterns).

²²⁷ See CHRIS ARGYRIS, ROBERT PUTNAM & DIANE MCLAIN SMITH, ACTION SCIENCE (1985); Barley & Tolbert, *supra* note 226.

²²⁸ See WENGER ET AL., *supra* note 213, at 18 (describing how "multimembership" creates a learning loop).

²²⁹ See Draft Collaboration Agreement, *supra* note 142, (awardee agrees to create institutional infrastructure to enable sustainability).

²³⁰ See ARGYRIS & SCHÖN, *supra* note 26; Bamberger, *supra* note 26, at 75.

²³¹ This approach incorporates Karl Weick's strategy for a designer to "integrate yourself into the design" as a path toward a self-designing system. See WEICK, *supra* note 26, at 406.

²³² Interviews with Deans and Co-PIs (June 1 - 2, 2004).

and just like you, I would be embarrassed if we were not refunded -- they get that.²³³

The deans developed into “real partners” in the work.²³⁴

The deans’ PI role brings those with core leadership responsibility out of their normal setting and authority structures into an experimental space created to implement ADVANCE. This location provides the opportunity to think creatively, to interact in an open-ended way with those directly affected by the problem, to brainstorm with an interdisciplinary group of faculty and experts, and to problem solve. As one ADVANCE protagonist described it, “People with access and power [were] given a different conceptual framework for thinking about their role, which influenced the way in which they carried out their policymaking responsibilities.”²³⁵ Deans and chairs gained access to information they otherwise lacked. “I can’t tell you how many times there was shock and surprise at the table . . . learning about the way things work.”²³⁶

Deans applied the knowledge, relationships, and methodologies they developed through ADVANCE to enable change they could not accomplish in their ordinary administrative role. They used their institutional position and resources to expand effective policies and programs beyond ADVANCE.²³⁷ The ADVANCE leadership helped develop the agenda for these policy-oriented groups. This strategy has resulted in the generalization and integration of initiatives particular to ADVANCE into the fabric of university structures and programs, including departments that are not explicitly covered by ADVANCE.

Importantly, role hybridity simultaneously works in the opposite direction, integrating gender equity advocates and experts into governance decisions. ADVANCE creates various occasions for gender advocates and experts to participate in decision making arenas. The organizational catalysts move in and out of positions of administrative responsibility and bring their accumulated gender knowledge into those governance roles. For example, one ADVANCE PI served a term as an academic dean in arts and sciences.²³⁸ STRIDE members also have held leadership positions

²³³ Interview with Dean and ADVANCE co-PI (June 2, 2004).

²³⁴ The recent site visit report reached a similar conclusion: “The conjunction of three deans sends a powerful message: ‘Everyone realizes we three are behind this, so there will be a price to pay if they don’t get in line,’ said one.” SITE VISIT REPORT, *supra* note 8, at 1.

²³⁵ Interview with ADVANCE PI (June 2, 2004).

²³⁶ Interview with Associate Provost and ADVANCE co-PI (June 1, 2004).

²³⁷ For example, three subcommittees, chaired by the ADVANCE Deans with active participation by the ADVANCE PI, conducted research and produced policy recommendations regarding “Faculty Evaluation and Development; Recruitment, Retention and Leadership; and Family Policies and Faculty Tracks.” UNIVERSITY OF MICHIGAN, YEAR-END REPORT FOR ADVANCE INSTITUTIONAL TRANSFORMATION PROJECT: YEAR 2 II-3 (2003), *available at* http://www.umich.edu/~advproj/P_Dec2003Report.pdf.

²³⁸ Interview with ADVANCE PI (June 3, 2004).

within their departments at various points. In part as a result of their responsibilities for ADVANCE, some deans have now set up their own working groups on gender that overlap and cross-fertilize with STRIDE.²³⁹

This partial integration of gender experts and advocates into governance routines has provided a crucial source of learning and accountability. Because of these hybrid roles, co-PI deans collaborate regularly with respected colleagues who are not constrained by formal administrative responsibilities and who are accountable to the constituencies most directly affected by and interested in the success of the initiative. In the words of one participant, “we are like the little burr.”²⁴⁰

B. *The “Constitution” of Legality: Equality Through Institutional Citizenship*

The second dilemma described in Part I involved the legal minefield facing gender equity interventions: they must find ways to remove barriers and increase participation of under-represented groups without crossing the legal line by excluding majority group members.²⁴¹ ADVANCE’s institutional transformation strategy equips universities to strike this balance by embracing institutional citizenship as its implicit justification and goal. The interventions are designed to create the conditions enabling women (and men) to participate fully and equally as citizens of the institution. It uses institutional analysis to produce changes in practices that arbitrarily disadvantage women and environments in which women (and men) can thrive. This framework maintains gender (and race) as distinct evaluative categories and at the same time connects them to core institutional values and goals.²⁴² It uses inclusive rather than exclusive

²³⁹ As one dean remarked, “A couple of years ago, I created a Dean’s Advisory Committee on Female Faculty. It is made up of six or seven female faculty that I use in several ways -- I can meet with them rather than meeting with everyone and get some help with some things and bounce ideas off of them. When we put new programs into place, I pass it by them to get their input. . . . They themselves have monthly meetings with all the women faculty. . . . Some of the members of that group are also part of the STRIDE committee, so there’s another flow of information that goes through the institution as a result.” Interview with Dean and ADVANCE co-PI (June 3, 2004).

²⁴⁰ Interview with Senior Administrator and ADVANCE co-PI (June 1, 2004).

²⁴¹ See Alger, *supra* note 40; Kim Forde-Mazrui, *The Constitutional Implications of Race-Neutral Affirmative Action*, 88 GEO. L.J. 2331 (2000); Richard A. Primus, *Equal Protection and Disparate Impact: Round Three*, 117 HARV. L. REV. 494, 514 (2003) (“Rather than functioning as a formal means of determining what level of scrutiny should apply, the inquiry into the existence of a racial classification can be directed by normative judgments about motive or other substantive aspects of equal protection. . . .”).

²⁴² Gender and organization scholars have referred to this strategy as “the dual agenda.” See Ely & Meyerson, *supra* note 27; Bailyn, *supra* note 26. It bears resemblance to the “miner’s canary” approach to race articulated in my work with Lani Guinier and her subsequent book with Gerald Torres. See Susan Sturm & Lani Guinier, *The Future of Affirmative Action: Reclaiming the Innovative Ideal*, 84 CAL. L. REV. 953, 1025 - 26 (discussing the role of race and gender as signifiers); LANI GUINIER & GERALD TORRES, *THE MINER’S CANARY: ENLISTING RACE, RESISTING POWER, TRANSFORMING DEMOCRACY* (2002).

strategies to advance women and people of color and relies on gender analysis to signal unfairness or institutional dysfunction. It also facilitates the integration of gender equity values into the culture of the university. This approach enables lawyers to operate not only as gatekeepers of legality, but also as proactive problem solvers who help constitute systems that advance equity within legal boundaries.

NSF puts gender, as well as race, on the table as a value integrally connected to its institutional mission of advancing science. It legitimates gender as a normative enterprise through science's language and method, as well as its own reputation for rigor and merit-based decision making. NSF has achieved the status of a brand signifying merit and organizational excellence.²⁴³ It has harnessed its reputation for rigor and scientific method to legitimating gender equity as a value. High quality research establishes the need to address gender under-participation as a strategic, as well as a moral imperative. Although a history of deliberate gender exclusion certainly characterizes many universities, NSF articulates forward-looking goals premised on how current conditions perpetuate under-participation and why eliminating these barriers will advance scientific priorities.

ADVANCE articulates the case for gender equity in terms of core institutional values (e.g., advancing science or improving faculty governance), and at the same time the project preserves gender as a distinct analytical and normative category.²⁴⁴ Attention to gender dynamics is framed as a way to invest in the future of the sciences by taking on the problem of under-participation of talented individuals in academic science.²⁴⁵ The argument proceeds as follows: excellence in discovery and innovation in science and engineering derives from an ample and well-educated work force. Global competition is intensifying such that the United States may not be able to rely on the international labor market to fill unmet skill needs. Domestic talent is likely to decline unless the nation intervenes to improve success of scientists from all demographic groups, especially those that have been underrepresented in scientific and

²⁴³ "The 'NSF brand' represents merit-reviewed excellence; openness and inclusiveness; inspiring, pace-setting research at the constantly-changing frontier; and a commitment to a free marketplace of ideas that spans ethnic, social, economic and geographic boundaries. The Foundation strives to be influential and agile, serving as a creative catalyst for change. Finally, the 'NSF brand' represents accountability, building and maintaining the public trust." Joseph Bordogna, Deputy Director, Nat'l Sci. Found., Remarks at the French-American Foundation/Association Nationale De La Recherche Technique (FAF/ANRT) Seminar: The Promotion of Excellence in Research: The Experience of the National Science Foundation (Apr. 8, 2005), *available at* http://www.nsf.gov/news/speeches/bordogna/05/jb050408_frenchamerica.jsp.

²⁴⁴ Cf. Bailyn, *supra* note 26; Ely & Meyerson, *supra* note 27.

²⁴⁵ "The pursuit of new scientific and engineering knowledge and its use in service to society requires the talent, perspectives and insight that can only be assured by increasing diversity in the science, engineering and technological workforce." 2002 PROGRAM SOLICITATION, *supra* note **Error! Bookmark not defined.**

engineering careers.²⁴⁶ That means taking steps to increase the successful participation of women and people of color.²⁴⁷

ADVANCE thus articulates gender equality goals within the frame of citizenship and scientific improvement: all institutional citizens should be able to realize their potential and participate fully in the life of the institution.²⁴⁸ Congress has applied these values of full participation and self-realization to the scientific and engineering sector:

The Congress declares it is the policy of the United States to encourage men and women, equally, of all ethnic, racial, and economic backgrounds . . . to have equal opportunity in education, training, and employment in scientific and technical fields, and thereby to promote scientific and engineering literacy and the full use of the human resources of the Nation in science and engineering. To this end, the Congress declares that the highest quality science and engineering over the long-term requires substantial support, from currently available research and educational funds, for increased participation in science and engineering by women, minorities, and persons with disabilities.²⁴⁹

ADVANCE's emphasis on citizenship and self-development bears a strong resemblance to the conceptions of equality and social justice advanced in the work of Amartya Sen and Iris Marion Young.²⁵⁰ Just institutions provide conditions for all persons to learn and use their skills within the institutional domains that define their life circumstances. The workplace is a particularly important domain for citizens to realize their

²⁴⁶ NSF's strategic plan summarizes the issue:

The global competition for highly skilled technical workers and S&E professionals is escalating, while fewer U.S. students are choosing to go into graduate science and engineering programs. Since 1993, enrollment of U.S. students in these programs has dropped nine percent. To maintain the technological lead the United States enjoys throughout the world it will be necessary to recruit greater numbers of U.S. students into the S&E workforce. It will be especially important to tap into the potential evident in previously underutilized groups and institutions of the Nation's human resource pool.

NAT'L SCI. FOUND., STRATEGIC PLAN: FY 2003 – 2008 6 – 7 (2003), *available at* <http://www.nsf.gov/pubs/2004/nsf04201/FY2003-2008.doc>.

²⁴⁷ See NAT'L SCI. BD., THE SCIENCE AND ENGINEERING WORKFORCE: REALIZING AMERICA'S POTENTIAL (2003), *available at* <http://www.nsf.gov/nsb/documents/2003/nsb0369/nsb0369.pdf>.

²⁴⁸ This is an example of frame alignment, which has been identified as an important strategy of micromobilization—enabling collective action around issues of common interest as part of everyday interaction. See Snow et al., *supra* note 216; Katzenstein, *supra* note 61.

²⁴⁹ 42 U.S.C. § 1885(b) (2000) (amended 2002).

²⁵⁰ See Amartya Sen, Inequality Reexamined 4 (1992); Iris Marion Young, Inclusion and Democracy 31 - 32 (2000).

capacities and functionings, given the centrality of workplace institutions as an “intermediate institution” in which citizens actually make their voices heard and exercise control or influence over the conditions of their day-to-day lives.²⁵¹ The institutional citizenship ideal also resonates with the language of *Grutter*, which emphasizes the values of democratic legitimacy and broad participation as part of its justification for upholding diversity as a basis for taking race into account.²⁵² “Effective participation by members of all racial and ethnic groups in the civic life of our Nation is essential if the dream of one Nation, indivisible, is to be realized.”²⁵³ Educational institutions play a particularly important role as gateways to leadership and markers of the openness and integrity of institutions through which participation in the economic, political, and social life is expressed and achieved. Universities bear responsibility for both creating broad access and for developing scientific knowledge to benefit diverse communities. In this sense, institutional citizenship operates both to enable full participation by a diverse citizenry and to enable universities to meet their obligations as institutional citizens of a broader polity.

ADVANCE’s approach to increasing participation shows the relationship between the goal of creating conditions that enable the expression of citizens’ capabilities and advancing equality. ADVANCE focuses on identifying and reducing barriers to participation that are unequally distributed among women and men. These obstacles, if they do not advance the expressed goals of the institution, arbitrarily circumscribe the capacities for functioning of a previously excluded group over that of majority group members.²⁵⁴

Both Congress and the Supreme Court have recently acknowledged the validity of public action aimed at eliminating arbitrary barriers and advancing the full participation women and people of color. As part of its adoption of Title IX and its ongoing re-authorization of NSF funding, Congress has made findings acknowledging prior exclusion of women and people of color from university faculties, as well as the persistence of stereotypes and institutional barriers that prevent full integration of academic institutions. Congress has also declared the importance of achieving full participation of underrepresented groups to the national polity, and authorized NSF to take steps to eliminate barriers to full

²⁵¹ See Sturm & Guinier, *supra* note 242, at 1031.

²⁵² The Supreme Court endorsed democratic legitimacy as a justification for pursuing diversity in its recent affirmative action decisions. See *Grutter v. Bollinger*, 539 U.S. 306, 332 (2003) (“In order to cultivate a set of leaders with legitimacy in the eyes of the citizenry, it is necessary that the path to leadership be visibly open to talented and qualified individuals of every race and ethnicity.”).

²⁵³ *Id.*

²⁵⁴ See Jeremy Waldron, *Mill on Liberty and on the Contagious Diseases Acts*, <http://www.yale.edu/isps/seminars/politheo/waldron.pdf> (last visited Mar. 19, 2006).

participation. ADVANCE carries through on this analysis; its emphasis on eliminating barriers to full participation falls squarely within the analysis used by the Supreme Court in *Nevada Department of Human Resources v. Hibbs* to uphold the Family and Medical Leave Act (“FMLA”).²⁵⁵ There, the Court described the discrimination targeted by the FMLA to include “subtle discrimination” resulting from “mutually reinforcing stereotypes” that created “a self-fulfilling cycle of discrimination” and “employers’ stereotypical views about women’s commitment to work and their value as employees.”²⁵⁶ The court concluded that such problems “may justify added prophylactic measures in response,” particularly those measures that are targeted at the areas identified as the barriers to participation.²⁵⁷

ADVANCE’s integrative and inclusive approach goes a long way in establishing its constitutionality. Acting with explicit congressional authorization, ADVANCE is directed at institutional transformation by eliminating bias, reducing barriers, and building capacity.²⁵⁸ Its programs address gender (and race) but are open to all genders (and races). The Supreme Court has indicated that programs increasing participation by women and people of color through inclusive or neutral means do not trigger heightened scrutiny.²⁵⁹ Recent lower court cases have applied this reasoning to uphold the constitutionality of programs employing facially neutral or inclusive means to address racial or gender under-participation.²⁶⁰ These cases support the argument that such programs do not employ suspect classifications in ways that trigger heightened scrutiny,

²⁵⁵ Nev. Dep’t of Human Res. v. Hibbs, 538 U.S. 721 (2003).

²⁵⁶ *Id.* at 736.

²⁵⁷ *Id.* at 737.

²⁵⁸ 42 U.S.C. § 1885 (2000) (amended 2002) (“The Congress finds that it is in the national interest to promote the full use of human resources in science and engineering and to insure the full development and use of the scientific and engineering talents and skills of men and women, equally, of all ethnic, racial, and economic backgrounds, including persons with disabilities.”).

²⁵⁹ See *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469, 473 (1989). This was the first case in which a majority of the Court held that strict scrutiny applies to all racial classifications by state or local governments regardless of the race burdened by the classification. It was suggested in dicta that states could increase minority participation in the construction industry through race-neutral remedies without meeting the requirements of strict scrutiny. The case addressed equal protection as it applies to race. Because gender classifications trigger intermediate rather than strict scrutiny, they may be subject to greater deference, although this issue remains unresolved by the Supreme Court. It also bears noting that, although universities do not justify their programs in terms of past discrimination, many had explicit policies excluding or tracking women until the mid-1970s. See MARGARET W. ROSSITER, *WOMEN SCIENTISTS IN AMERICA: BEFORE AFFIRMATIVE ACTION, 1940 - 1972* (1995). Congress has made explicit findings about deliberate as well as structural exclusion of women in the academy as part of its enactment of Title IX.

²⁶⁰ See, e.g., *Byers v. City of Albuquerque*, 150 F.3d 1271 (10th Cir. 1998) (rejecting an equal protection challenge to a police department decision lowering the cut-off score for advancing to the next stage of a selection process, reasoning that motive for the change was to increase the representation of women and people of color in the pool, but the means chosen -- lowering the cutoff score -- was facially and formally race-neutral and therefore consistent with the equal protection clause); *Hayden v. County of Nassau*, 180 F.3d 42 (2d Cir. 1999). See Primus, *supra* note 241, at 543.

provided they are not intended as a proxy for a suspect classification.²⁶¹

A recent article by Kim Forde-Mazrui provides a useful analytical framework for analyzing the constitutionality of ADVANCE-type programs if heightened scrutiny were nonetheless to be applied.²⁶² Forde-Mazrui deduces that “[r]acial classifications are not in fact intrinsically invalid but rather are deemed ‘suspect’ because certain illegitimate racial purposes or beliefs are likely to have motivated their adoption.”²⁶³ Strict scrutiny enables the court to smoke out programs motivated by racial prejudice, stereotype, and “simple racial politics.”²⁶⁴ In addition, equal protection doctrine assesses potential harmful effects of racial classifications, including “the harm to white persons (or members of other nonbenefited minorities) and the tendency of racial preferences to reinforce stereotypical thinking and to foster racial tensions.”²⁶⁵ ADVANCE’s approach satisfies each of these concerns.

First, ADVANCE is explicitly designed to reduce the operation of stereotypes and bias in decision making. Its methodology encourages applicants and grantees to explore how women’s advancement could improve the quality and dynamism of the overall academic enterprise.²⁶⁶ The analysis that NSF grantees are required to undertake reveals that in a given context, gender equity cannot occur without changing governance structures generally, which in turn benefits the overall institution. As one department leader told us, “There’s a connection between how the department operates for everyone and how women experience the department.”²⁶⁷ Experience at UM demonstrates that the project of studying gender dynamics prompts useful learning about academic governance issues as well, including search processes, department chair training, interdisciplinary appointments, partner hiring, work and family life balance, and improvement of the capacity to deal with conflict:

The things that I find about gender generally is [sic] that [it brings up] many of [the] straightforward problems that we have in all departments. I don’t see a single problem that we have with the women faculty that we don’t have with the guys as well. All of the problems appear in general, but seem more acute and are more discouraging to the people involved when they involve women.²⁶⁸

²⁶¹ See Forde-Mazrui, *supra* note 241.

²⁶² *Id.*

²⁶³ *Id.* at 2352.

²⁶⁴ *Id.* at 2340 (quoting *Croson*, 488 U.S. at 493).

²⁶⁵ *Id.* at 2352.

²⁶⁶ 2002 PROGRAM SOLICITATION, *supra* note **Error! Bookmark not defined.**, at 3.

²⁶⁷ Interview with Department Chair (June 2, 2004).

²⁶⁸ Interview with Department Chair (June 3, 2004).

This conceptualization prompts those primarily concerned with gender to identify underlying causes, shared interests, and institutional strategies that must be addressed to achieve gender equity. Gender equity analysis plays an interrelated substantive and process role: it reveals dysfunctional practices that prevent women in particular and faculty in general from flourishing, and it reveals (and redresses) the absence of any process triggering an inquiry into those practices.

For example, ADVANCE members have determined that barriers to recruiting and hiring women relate to more general issues with search culture and practice. Narrowly defined searches targeting a very small pool can limit a department's growth into new fields and its capacity to hire top women candidates identified through the search process. Busy search committee members save time by what one faculty member called "go[ing] to the usual suspects," relying on connections with particular institutions or recommendations from certain people rather than engaging in a broad and open search. Learning how unstructured processes invite the expression of cognitive biases involving women and people of color also prompted consideration of how other preconceptions implicitly distorted the evaluative process. Over time, this informal practice can create a department that lacks diversity in terms of geography, methodology, or background, contributing to a phenomenon referred to as "inbreeding" that restricts the department's overall success.

I think it has helped when we switched from having individual search committees -- what would happen is some area would get picked, a search committee would be formed, and the focus would be rather narrow. With one personnel committee doing all of it, people who might fall through the cracks otherwise get looked at. So it helps particularly with the issue of interdisciplinarity.²⁶⁹

Second, ADVANCE's emphasis on structural redesign and on integrating gender equity and organizational effectiveness minimizes backlash and gender polarization. It also produces institutional and professional benefits shared by white men. Creating incentives to eliminate bias and arbitrary barriers to success, while it may reduce the number of positions awarded to white men, does not deprive those men of legitimate entitlements.

ADVANCE enlists faculty and administrators in elaborating gender's meaning as part of the process of trying to understand and address the problem of under-participation. In the course of conducting a climate study or analyzing barriers to women's advancement, participants

²⁶⁹ Interview with STRIDE member (June 2, 2004).

determine why gender disparities matter in their own context. This analysis of barriers to women's participation pushes the inquiry regarding gender participation to a more structural level, prompting attention to removing institutional barriers generally limiting efforts to attract and retain talent. These analyses have prompted departments to address quality of life concerns by appointing and training chairs who are sensitive to issues of faculty morale, mentoring, race, and gender.²⁷⁰ They are improving the quality of searches overall and the capacity of searches to locate, enable, and attract excellent candidates of different races and genders.²⁷¹ They have strengthened the possibility of interdisciplinary teaching and research by expanding the scope of searches and conducting clustered searches involving different departments. They have addressed quality of life issues affecting women and men by addressing issues of partner placement, creating more flexible tenure policies, and considering family conflicts when scheduling meeting times. They are generally paying more attention to governance questions and to the impact on women and people of color of various decisions affecting participation and advancement.²⁷²

Finally, the integration of gender equity and core institutional values helps considerably in dealing with backlash. "Backlash" refers to opposition or resistance to equity initiatives based on perceptions of unfairness, counterproductivity, or illegality. As one dean put it, there are "some that are hostile, to the point where they fight against it. They view what we're doing as set-asides, quotas."²⁷³ Backlash often stems from the assumption that diversity and merit are two opposing concepts and that efforts to include women and people of color are at the expense of excellence and on the backs of majority group members. ADVANCE's premise challenges this oppositional framing; it connects gender equity to questions of institutional mission. The experience of one department at UM illustrates this alignment of gender and departmental goals. The department chair explicitly linked eliminating bias and creating a welcoming environment for women to its success in recruiting faculty who raise the overall quality of the department.

We were probably a likely B+ department in an A or A+ institution. We are not at all at the caliber of the rest of the institution around us. Many of us want to be at that level, and we are not going to get there by just perpetuating, by rear-view mirror, by looking backwards. There's a very

²⁷⁰ See SITE VISIT REPORT, *supra* note 8; COMPARATIVE CLIMATE STUDY, *supra* note 185.

²⁷¹ See Stewart et al., *supra* note 182.

²⁷² See SITE VISIT REPORT, *supra* note 8; COMPARATIVE CLIMATE STUDY, *supra* note 185.

²⁷³ Interview with Dean and ADVANCE co-PI (June 1, 2004).

broad spectrum of people in the community that we aren't availing ourselves of or having opportunities for. So, if we are to out-compete our peer institutions and the institutions we would like to rival, if we can be cagier, smarter, more strategic, more proactive in bringing this next generation of faculty who are really going to transform the stature of this department, the quality of this department, it is to our strategic advantage to do so. And I don't think there is anyone in this department who would argue against that. . . .²⁷⁴

The chair described the results of a process of departmental improvement driven in part by an analysis of how current processes were failing to recruit women. That process included a redesigned search process that broadened and deepened the applicant pool, a departmental climate study, the institution of monthly junior faculty meetings to do peer mentoring and provide opportunities to interact with senior colleagues around issues of importance, and the adoption of family-friendly policies within the department. These steps, in combination with other ADVANCE programs, had a palpable impact on the department's environment, which in turn played an important role in recruiting high-performing women to the department:

Who could argue with recruiting somebody where we got somebody to come here by turning down Stanford and Berkeley? The person just happens to be a young woman, this is fantastic. That happened this past year. I use sports analogies. We recruited a person who was clearly the lottery number one draft pick in the field. The buzz in the community, most of us see how things travel, people keep saying, you got her? What did you do to get her? Berkeley is the number one chemistry department in the nation, Stanford is in the top 5. We are about 20th or something. . . . People walk around thinking, how in the world were we able to pull this off? No one is running around saying we got them because they are women, or we got them because we had a special program or this or that. People are saying this is just incredible. These are just enormously talented colleagues.²⁷⁵

This approach responds directly to the concern that diversity is at the expense of quality by explicitly showing that gender cannot be

²⁷⁴ Interview with Department Chair (June 1, 2004).

²⁷⁵ *Id.*

addressed without correcting underlying institutional problems and that creating conditions more conducive to gender participation will also rebound to the benefit of others affected by the same dynamics.²⁷⁶

This framework integrating gender with dominant professional and institutional concerns also made it easier for women to push for change.²⁷⁷ Many women found it risky to raise gender issues when they were framed in terms of discrimination or affirmative action.²⁷⁸ The dual agenda approach articulated problems in a way that enabled women to maintain their primary identities as scientists committed to academic excellence and still raise gender concerns. It expanded the range of critical frameworks which could be used to question the adequacy of the status quo.²⁷⁹ It also created alliances between those concerned about gender and those concerned about dysfunctional governance patterns that affected departmental quality. Over time, as gender became legitimized as an analytical category, women expressed greater willingness to include gender as a distinct concern and to identify themselves as women concerned about gender equity in the workplace.

The Supreme Court's equal protection jurisprudence could be interpreted as a framework designed to produce mindfulness and accountability in the design and implementation of programs intended to advance the participation of underrepresented groups. This approach resonates with ADVANCE's emphasis on self-analysis as the premise for institutional change. Its conceptual framework enlists grantees in analyzing how bias is in fact operating in supposedly fair processes. Instead of compensating at the margins for the results of an unfair process, this institutional approach redesigns the work environment to assure that everyone has the opportunity to demonstrate their capacity to fulfill the goals of the enterprise. ADVANCE's method does not employ gender or racial classifications as the basis for defining program beneficiaries. It does, nonetheless, address the continuing operation of race and gender bias directly. Race and gender are used as a diagnostic tool to identify the operation of implicit bias and the failure of institutional processes in minimizing the expression of that bias. It then designs and implements across-the-board remedies for these institutional dysfunctions.²⁸⁰ The analysis and the remedy are not limited to gender or race. The problems are most visible around gender and race and may operate in particular ways

²⁷⁶ See Fletcher & Ely, *supra* note 25; GUINIER & TORRES, *supra* note 242.

²⁷⁷ See Katzenstein, *supra* note 61.

²⁷⁸ When gender equity advocates at the University of Michigan tried to reach out to women in the sciences in the past, they would often "back away [because it was] dangerous to [their] careers. . . . Younger women strongly felt it would hurt [them] . . . senior women . . . were pretty bitter and had given up any sense that it mattered." Interview with ADVANCE PI (June 1, 2004).

²⁷⁹ See Bailyn, *supra* note 26, at 140.

²⁸⁰ See GUINIER & TORRES, *supra* note 242; Sturm & Guinier, *supra* note 242.

for those groups, but they not unique to those groups. More importantly for equal protection purposes, the remedies are designed to fix the problem for everyone, not just for the groups that make the problem visible.

The institutional citizenship ideal does not fully displace equal opportunity and equal treatment values served by anti-discrimination norms.²⁸¹ Just as there is no simple cause or remedy for gender bias, there is also no simple or single account of the “wrong” of gender under-participation. Instead, law’s primary emphasis on fairness and anti-discrimination becomes part of a broader set of values driving the project of gender inclusiveness. It does not provide the overarching normative foundation for the project.

Law’s role in encouraging institutional mindfulness has its analogue in the role that lawyers played at NSF in creating and sustaining ADVANCE. NSF’s general counsel was part of the team designing ADVANCE. As he put it, his job was to answer the question, “Let’s see how we can do this with integrity.”²⁸² Both at the project’s inception and through its implementation, his role has been to collaborate with senior leadership to produce legal and workable programs. He has solved apparent dilemmas by thinking through how to ADVANCE women without excluding men. He worked with clients to design a set of practices that would address the structural underpinnings of racial under-participation and advance the capacity for full institutional citizenship of previously excluded groups. He and his clients came to the conclusion that this strategy was the best way to institutionalize equity over the long run, consistent with prevailing legal standards. This role is congruent with that of transactional lawyers who facilitate the goals of their clients in a manner that avoids legal exposure and internalizes the values underlying legal norms.²⁸³

An example illustrates how this strategy was used to resolve short-term legal crises. One ADVANCE program had instituted a requirement

²⁸¹ Anti-discrimination principles are rooted in concepts of fairness and individual dignity. For an elaboration of these ideas, see generally Owen M. Fiss, *A Theory of Fair Employment Laws*, 38 U. CHI. L. REV. 235 (1971).

²⁸² Interview with NSF General Counsel, at NSF Headquarters in Arlington, Va. (Mar. 17, 2005).

²⁸³ See Susan Sturm, *Lawyers and the Practice of Workplace Equity*, 2002 WIS. L. REV. 277, 291 n.51 (2002) (“These roles for lawyers are neither unique nor new. Transactional business lawyers have routinely performed these functions for their corporate clients. See Maureen Cain, *The Symbol Traders*, in *LAWYERS IN A POST MODERN WORLD: TRANSLATION AND TRANSGRESSION* 15 (Maureen Cain & Christine B. Harrington eds., 1994). The authors argue that ‘creative institution building is not occasional work done for government but regular work done for capital; and . . . it has always been so. . . . Lawyers invent relationships. This is their special skill, their indispensable contribution to capital.’ *Id.* at 32 - 33; David Sugarman, *Blurred Boundaries: The Overlapping Worlds of Law, Business and Politics*, in *LAWYERS IN A POST MODERN WORLD*, *supra*, at 105, 113, 117 (documenting lawyers’ historical roles as creators of new structures within business organizations, entrepreneurs, and translators of economic power into institutional and cultural activity).”).

that women serve on a faculty recruitment panel, and the university was subsequently threatened with a lawsuit. The university's general counsel called NSF's general counsel to figure out how to respond. The general counsel then worked with Alice Hogan, the program director, and they developed a strategy to reduce legal exposure and maintain the program's effectiveness in reducing gender bias in search processes. With the general counsel's blessings, Hogan suggested that the university require that both men and women be represented on the panel; he replied, "I think that will work. That will cover most of the human species."²⁸⁴

This overall approach provides a workable response to the second dilemma of walking the legal tightrope, discussed in Section IB. It takes account of the Supreme Court's decisions in both *Grutter* and *Gratz*. *Gratz* arguably invalidates programs that treat race as a fixed and exclusive condition of participation. But general counsel who respond to *Gratz* by counseling color-blindness overstate the legal risks of ever taking race or gender into account and ignore the risks in the other direction -- of failing to address systemic bias and undercutting university's capacity to pursue diversity as a crucial part of its educational mission. Certainly general counsel should go at least as far as the *Grutter* Court in crediting their client's judgments of diversity's relationship to the university's core concerns. To do otherwise would effectively shut down experimentation with programs that *Grutter* took pains to validate.

The experience of NSF ADVANCE illustrates how general counsel can offer a third option that avoids the Hobson's choice between racially exclusive selection and pure race- or gender-neutral programs that will predictably maintain institutional exclusion. They can help universities to develop strategies that give concrete meaning to the search for "alternative practices" that increase inclusion by removing structural barriers to participation, using gender and race as an analytical framework for improving the institution's governance capacity, and figuring out when this analysis justifies explicitly targeting race and gender.

C. NSF as Public Institutional Intermediary: Leveraging Communities of Practice

The National Science Foundation's ADVANCE exemplifies a new public approach to gender and racial inclusion. Instead of relying on the direct threat of judicial sanctions, the agency uses its ongoing capacity-building role within a particular occupational sector to build knowledge (through establishing common metrics, information pooling, and networking), introduce incentives (such as competition, institutional improvement, and potential impact on funding), and provide accountability

²⁸⁴ Interview with NSF General Counsel, *supra* note 282.

(including grass roots participation and self-, peer- and external evaluation).

A major supporter of academic science,²⁸⁵ NSF resists the label of regulator, notwithstanding its considerable impact on the practices of the universities it funds. The agency intervenes primarily through its grant-making rather than its compliance role, although as such it does have responsibilities for monitoring compliance with legal requirements concerning diversity.²⁸⁶ NSF has significant and ongoing involvement in the core work of the organizations it seeks to influence. Its goal is “to support the people, ideas and tools that together make discovery possible.”²⁸⁷

NSF’s involvement with gender issues stems from its general capacity-building relationship with universities. From its inception, NSF has emphasized workforce development as integral to its goal of supporting scientific discovery and advancement. NSF uses research as the overarching methodology for all of its work, including its project to advance women’s participation. Thus, neither gender equity nor compliance structures NSF’s overall involvement with universities. NSF’s gender agenda grows out of its larger commitment to advance science through developing the workforce. Through its grant-making power, NSF uses its access, resources, and legitimacy to promote environments in which women and men will succeed as scientists.

The agency builds institutional analysis and knowledge-sharing into the core of its gender initiative, based on the premise that gender under-participation must be understood if it is to be effectively addressed. ADVANCE’s guidelines establish clear expectations that grantees will develop their agendas through systematic inquiry.²⁸⁸ NSF asks grantees to base their programmatic choices on the knowledge they develop from: (1) baseline and annual demographic studies comparing women’s and men’s participation rates in various positions;²⁸⁹ (2) self-analysis and academic research on the dynamics causing gender bias and preventing and enabling institutional change; (3) benchmarking analyses of other institutions’ gender interventions; and (4) ongoing program monitoring and

²⁸⁵ 2005 PROGRAM SOLICITATION, *supra* note 3. See also NSF At A Glance, *supra* note 3 (“With an annual budget of about \$5.5 billion, we are the funding source for approximately 20 percent of all federally supported basic research conducted by America’s colleges and universities. In many fields such as mathematics, computer science and the social sciences, NSF is the major source of federal backing.”).

²⁸⁶ See GAO REPORT, *supra* note 55, at 11.

²⁸⁷ See NSF At A Glance, *supra* note 3.

²⁸⁸ See *supra* Part II.

²⁸⁹ For a list of the twelve indicators for which baseline and annual data is required, see *supra* note 142.

evaluation.²⁹⁰

NSF's public intermediary role works through the operation of three key factors: reciprocity in its relationship with grantees, a capacity-building orientation, and the leveraging of its central location within a pre-existing university network and practice community.

1. Reciprocity and Peer Review

NSF structures its grantee relationship in terms of mutual responsibility and mutual benefit, thus creating conditions permitting the development of trust necessary to foster the risk-taking needed to identify and address gender issues.²⁹¹ Unlike typical compliance agencies, NSF plays a direct role in advancing the work that it seeks to influence. NSF's position and philosophy facilitates working collaboratively with grantees specifically and universities more generally. Many NSF program officers come from the university community and many will return after their term at NSF ends. From the outset, NSF invites interaction with prospective grantees as part of the grant application process. It also encourages information sharing among prospective and current grantees by articulating expectations in the grant solicitation that new grants will build on the efforts of current grant recipients.

NSF ADVANCE operates through negotiated agreements that structure what those in the network refer to as a collaboratory -- an ongoing network of experimentation and knowledge-sharing among NSF and its grantees. Collaboration agreements operate like a constitution for the interactions between NSF and its grantees and among the grantees themselves. They define reciprocal responsibilities for both NSF and those it funds.²⁹² NSF and grantees commit to shared goals and responsibilities for information gathering, standard setting, evaluation and monitoring, and sharing knowledge with the field. NSF funds and expects PIs to consult with and evaluate each other, and the agency holds itself accountable by the same processes of independent review that it uses to monitor the progress of its grantees.

NSF's process for developing metrics governing data gathering and evaluation illustrates its collaborative stance. The agency relies on quantitative indicators to track progress, enable comparability across institutions, and signal problem areas warranting greater attention.²⁹³ The indicators' efficacy depends upon incorporating local knowledge about the types of decisions that needed to be tracked and the realistic prospects of

²⁹⁰ See 2001 PROGRAM SOLICITATION, *supra* note 124; 2005 PROGRAM SOLICITATION, *supra* note 3.

²⁹¹ See Charles F. Sabel, Studied Trust: Building New Forms of Cooperation in a Volatile Economy, 46 HUM. REL. 1133 (1993).

²⁹² See *supra* Part II.B.2.

²⁹³ See *supra* Part II.B.1.

obtaining that data.²⁹⁴ Like many public monitors, NSF was also striving to achieve consistency and comparability on the one hand, and adaptability to diverse contexts and new knowledge on the other. At the outset of the ADVANCE program, NSF brought the first round grantees together to brainstorm with NSF staff about what the measures should be. That discussion used the MIT report as a jumping-off point.²⁹⁵ “The group reached a consensus that data from climate surveys, productivity analysis, and analysis of family/work friendly policies would also be important to gather.”²⁹⁶ The PIs established the goal of producing indicators that could “serve an evaluative purpose for ADVANCE” and “a research purpose of understanding the impact of different approaches to institutional change upon women’s status in STEM [Science, Technology, Engineering, and Mathematics].”²⁹⁷ The group collectively identified the information needed to discover problems, and pinpointed the twelve indicators of women’s participation at the relevant stages of professional advancement. They then had to justify to NSF program staff the indicators thus identified.

As the program progressed, NSF and grantees began to think about revising these indicators in light of their experience with them. Lisa Frehill, a PI from the University of New Mexico with particular interest and expertise in program evaluation, received NSF funding to refine the common indicators that enable both comparability across institutions and adaptation to specific contexts in collaboration with other first round ADVANCE PIs.²⁹⁸ NSF convened an ADVANCE Institutional Transformation Indicators Working Group, which analyzed grantees’ experience with the original indicators in light of available research and developed a “Proposed Toolkit for Reporting Progress Toward NSF ADVANCE: Institutional Transformation Goals.”²⁹⁹ The Working Group sorted the original indicators into four research questions that provide a framework for documenting progress toward institutional transformation:

What is the distribution of science and engineering faculty by gender, rank, and department?

What are the outcomes of institutional processes of recruitment and advancement for men and women?

²⁹⁴ Id.

²⁹⁵ The development of these metrics was described in the appendix to a subsequent report proposing a toolkit for data gathering. *Proposed Toolkit*, *supra* note 218. This discussion quotes from that appendix.

²⁹⁶ Id.

²⁹⁷ Id.

²⁹⁸ Id. See also Poster, Abigail Stewart et al., NSF ADVANCE Project at the University of Michigan, Assessing Progress of Women Scientists and Engineers, Approaches to Representing Data, available at http://www.umich.edu/~advproj/UM_Assessing_poster.pdf (last visited Apr. 19, 2006).

²⁹⁹ *Proposed Toolkit*, *supra* note 218.

What is the gender distribution of science and engineering faculty in leadership positions in the institution?

What is the allocation of resources for science and engineering faculty by gender at the institution?³⁰⁰

The toolkit provides a roadmap for tailoring a template to the needs of particular institutions. NSF has also funded the PI who coordinated this project “to work with other institutions to develop how to collect and report data and answer different questions in their own institutions.”³⁰¹ This example shows how a capacity building agency develops leadership and knowledge and then equips “organizational catalysts” to effectuate change in other institutions within the network.

Program officers are also in a position to work through problems and issues that arise over the course of the grant. This enables a working relationship to develop. Many grantees communicate regularly with the NSF program director and rely on NSF to help them work through difficult problems or to enlist additional support. Program staff are themselves bound by the ethic of data-based evaluation. Both NSF and grantees are subject to outside review and are accountable to NSF oversight bodies.³⁰² This provides the framework to develop a working relationship within the context of accountability, which in turn provides a context permitting more formal evaluation without necessarily destroying the trust relationship needed for future problem solving.

2. Capacity Building

Unlike the typical regulatory relationship, universities seek out a relationship with NSF ADVANCE. This is because NSF brings concrete benefits to the table in the form of resources, expertise, and legitimacy. NSF’s monitoring role is linked to capacity building: developing adequate knowledge, incentives, and institutional infrastructure so that universities can tackle the difficult problem of increasing women’s participation. This capacity-building emphasis differs from a compliance orientation, which focuses on evaluating whether current practices comply with affirmative action and anti-discrimination requirements. A capacity-building approach treats data gathering and monitoring as a form of learning.³⁰³ As with any complex problem warranting NSF’s attention, learning is needed to understand and address gender equity.

NSF requires grantees to develop the organizational infrastructure

³⁰⁰ *Id.* at 1 – 2.

³⁰¹ Lisa Frehill, Presentation at the National Advance Conference (Apr. 19, 2004) (notes on file with the Harvard Journal of Law & Gender).

³⁰² See, e.g., COV REVIEW, *supra* note 163; SITE VISIT REPORT, *supra* note 8.

³⁰³ See Dorf & Sabel, *supra* note 84.

needed to implement their proposed programs as part of the approval process. Grant recipients also commit to developing the infrastructure to sustain these projects over the long run. Because this commitment is a prerequisite to the grant application, it has prompted change even within institutions that do not receive funding. Unsuccessful grantees report that participating in the application process itself jump-started a change process within the university.³⁰⁴ Grantees also agree to participate in a learning community consisting of other grantees as well as interested non-grantees who participate in meetings, web exchanges, and networks. They commit to maintaining a public website as part of a “dissemination mechanism,” and they participate in reverse site visits and grantee meetings.³⁰⁵ NSF encourages grantees to develop partnerships with industry, government, professional societies, and other not-for-profit organizations.³⁰⁶

This capacity-building orientation affects the meaning of failure, to both NSF and to its grantees. Failures and errors serve a positive role in this capacity-building model. They provide the basis for obtaining a grant in the first place, by identifying baseline conditions justifying the grant award. They produce information about where the system is failing. They also provide the necessary trigger for action and for increasing support to take that action. The ADVANCE program has designed data gathering to enable problem analysis and strategic responses. This includes data about: (1) where the problems are located, (2) why the problem is occurring, and (3) what can be done to address the problem at its root.³⁰⁷ Disclosing problems does not mean that the university will be targeted for public sanctions. It instead identifies the locations where additional knowledge, resources, and attention are needed.

A comparison of the extent of information contained in the ADVANCE annual reports and in the affirmative action report at UM reveals dramatic differences in the quality and comprehensiveness of the data produced, as well as the willingness of operational actors to utilize the data in their decision making. Data presented in UM’s affirmative action report displays the percentage of women faculty hired and promoted to

³⁰⁴ Interview with Joseph Bordogna, *supra* note 111; Interview with Alice Hogan, *supra* note 135.

³⁰⁵ NAT’L SCI. FOUND., NSF 02-126, ADVANCE: FAQs FOR INSTITUTIONAL TRANSFORMATION PROPOSALS, available at <http://www.nsf.gov/pubs/2002/nsf02126/nsf02126.pdf> (last visited Mar. 19, 2006).

³⁰⁶ 2001 PROGRAM SOLICITATION, *supra* note 124. With respect to the identity of “project partners,” the Program Solicitation mentions that “[p]artnerships involving industry, government, professional societies, and other not-for-profit organizations are encouraged but not required.” *Id.*

³⁰⁷ See Charles F. Sabel, *A Real-Time Revolution in Routines*, in THE CORPORATION AS A COLLABORATIVE COMMUNITY (Charles Heckscher & Paul Adler, eds.) (forthcoming 2006), available at <http://www2.law.columbia.edu/sabel/papers/02-Heckscher-chap02.pdf> (last visited Mar. 19, 2006) (discussing the five “why’s” as an illustration of root cause analysis).

tenure for all departments in the aggregate.³⁰⁸ It reports finding “no significant impediments to equal opportunity” in the areas of selection, recruitment, referral, and other personnel procedures.³⁰⁹ In contrast, the ADVANCE annual report for the same time period breaks down data by unit, defines the applicant pool based on the recruitment patterns of particular departments, and gathers information about the “kick-points” that influence participation and advancement. This tailored data-gathering assists the program in identifying areas of greatest need and providing a framework for working with chairs of particular departments.³¹⁰ Data gathering relevant to gender issues has also been integrated into operations, for example by building real-time reporting and monitoring into the process of getting resources from the central administration to run a search and hire a candidate.

The site visit reports also reflect this emphasis on using data revealing problems to build capacity and improve performance. For example, NSF’s third year review of UM found considerable progress in hiring but high attrition rates of senior faculty, which undercut the impact of this progress. NSF’s response was not to threaten sanctions but instead to focus attention on why people leave and how the program needed to expand its focus to track and respond proactively to these challenges. The UM steering committee took up this challenge and developed strategies to study and address retention problems, which in turn prompted increased support and encouragement from NSF. The university’s capacity to learn from failure was itself a sign of success. This “failure theory of success” reduces the risk and increases the rewards associated with identifying problems.³¹¹ The prospect of benefiting from data gathering and monitoring creates incentives to gather information necessary to identify problems and to share that information with NSF. This is in contrast to a compliance framework, where failure prompts increased monitoring or sanctions and thus discourages genuine self-evaluation.

The ADVANCE site visit reports provide a detailed analysis of progress and problems, and follow-up reports indicate that these reports have spurred ADVANCE institutions to focus their energies on problem

³⁰⁸ See University of Michigan Ann Arbor Campus, Affirmative Action Program for Women and Minorities: Program Year January 15, 2005 to January 14, 2006 11 (2006) (on file with author) (“[F]rom November 1, 2003 to October 31, 2004, 35% of new faculty hires and 33% of faculty who were promoted were women.”).

³⁰⁹ *Id.* at 14.

³¹⁰ See *supra* text accompanying notes 118 – 133. (discussing the role of data in working with department chairs to identify problems in the department, demonstrate the impact of cognitive bias on search processes, and provide concrete strategies for addressing these issues).

³¹¹ For a discussion of the “failure theory of success” in the context of law school pedagogy, see Susan Sturm & Lani Guinier, *Learning From Conflict: Reflections on Teaching About Race and Gender*, 53 J. LEGAL EDUC. 515 (2003).

areas. The reports themselves use the criteria of effectiveness that were articulated in the solicitation, as well as the institutional transformation philosophy driving ADVANCE. The reviewers ask questions about progress on quantitative measures, evidence of policy and climate change at the departmental and institutional levels, institutional support, and plans for sustainability.³¹² These reports document successful interventions based on evidence as well as areas where change has not occurred. They also, where possible, offer explanations for that lack of progress.³¹³ So, for example, at the University of New Mexico, the site visit report documented the effectiveness of the program's PI and the progress made in hiring and tenuring women but emphasized the difficulties presented by high levels of turnover in university leadership, which accounts for "the unanswered question of who will be ADVANCE's champion within the central administration" and who will take responsibility for maintaining progress after the five-year ADVANCE period is over. The report also expressed concern over the "apparent backlash to a gender based program" among some of the faculty, as well as the "apparent inability of many STEM department heads to deal with gender- and status-based harassment."³¹⁴ Subsequent reports show that the site visit prompted extended follow-up by the PIs and senior leadership at New Mexico, which produced concrete steps to generate public and private financial support for continuing ADVANCE and serious movement to institutionalize ADVANCE within the university's administrative structure.

ADVANCE's approach to information transparency proceeds from an analysis of how to provide accountability and stimulate action without compromising individuals' confidentiality or discouraging problem solving.³¹⁵ Transparency is built into participation by requiring ongoing data gathering and regular reporting. Awardees simply do not have the choice to hide. Sensitive information that will reveal identities of individuals is disclosed to people within the affected community who need

³¹² See, e.g., SITE VISIT REPORT, *supra* note 8; UNIVERSITY OF WASHINGTON, INSTITUTIONAL TRANSFORMATION: PROGRESS AND IMPACT 2001 - 2004 (2004), available at <http://www.engr.washington.edu/advance/sitevisit/2004-Site-Visit-Report.pdf> [hereinafter UNIVERSITY OF WASHINGTON SITE REPORT]; NEW MEXICO UNIVERSITY, REPORT TO THE NATIONAL SCIENCE FOUNDATION, NEW MEXICO STATE UNIVERSITY ADVANCE INSTITUTIONAL TRANSFORMATION AWARD (2004), available at http://www.nmsu.edu/~advprog/Site_Visit_Report_Nov04.pdf [hereinafter NEW MEXICO SITE REPORT].

³¹³ See, e.g., SITE VISIT REPORT, *supra* note 8 (documenting issues concerning retention); NEW MEXICO SITE VISIT REPORT, *supra* note 312 (detailing concerns about management turnover); UNIVERSITY OF WASHINGTON SITE VISIT REPORT, *supra* note 312 (focusing on issues of climate and lack of communication). See also Interview with Alice Hogan, *supra* note 135 ("we use the same set of interview questions across all the sites").

³¹⁴ NEW MEXICO SITE VISIT REPORT, *supra* note 312, at 1 - 2.

³¹⁵ See ADVANCE co-PI, Remarks at NSF Annual Conference (May 19, 2005) (notes on file with the Harvard Journal of Law & Gender) (describing the need for a closed forum when there are conditions of threat or lack of safety).

this information to prompt change, as well as to NSF and its program evaluators;³¹⁶ however, it is not disclosed to the public or necessarily to the rest of the university community. Generalizable lessons from that information are shared in a form that can promote learning without unnecessarily disclosing identities. Information showing problematic patterns that cut across departments and strategies for improvement are widely disseminated and posted on the ADVANCE website.

The capacity-building orientation also provides NSF with a richer, more varied range of incentives with which to influence conduct. NSF provides substantial resources, expertise, and contacts to enable institutions to address the problem of women's under-participation. NSF's role in developing data-gathering capacity is one example:

Principal investigators knew they'd be asking for data that would be difficult for them to get -- especially given that these may be people without the standing to get the kind of information they need (faculty asking for tenure data, etc.). NSF needed to back up their requirements with some kind of ongoing relationship. The bigger, more systemic programs at NSF are all done this way.³¹⁷

In addition, NSF provides expertise and access to the most current tools available to address gender in science, including policies, programs, strategies, research analyses, and protocols. NSF program officers know the people in the field who are the most knowledgeable about particular issues and provide grantees with access to those experts. This wide array of tools creates strong incentives for universities to interact with NSF. It also provides NSF with flexibility and variation in its use of incentives and accountability.

Most obvious, of course, are the incentives attached to significant funding. A four-million-dollar grant certainly provides universities with considerable incentive to open up lines of communication and work closely with the agency. NSF monitors how the money is spent and whether grantees are fulfilling the commitments made at the outset of the grant relationship. Departure from the commitments in the cooperative agreement must receive written approval from the NSF program officer.³¹⁸ NSF also requires outside review. This monitoring role brings with it the possibility of holding back funds if these commitments are not honored.³¹⁹

³¹⁶ See *Proposed Toolkit*, *supra* note 218, at 5.

³¹⁷ Interview with Alice Hogan, *supra* note 135.

³¹⁸ Draft Collaboration Agreement, *supra* note 142.

³¹⁹ NSF has temporarily withheld funds based on a determination that the grant commitments pertaining to evaluation, dissemination, and assessment had not been met. See NSF SITE VISIT SUMMARY REPORT (Sept. 14, 2004), available at <http://advance.uci.edu> (follow "Reports" hyperlink);

The third- year review offers an occasion for mid-course correction, one that NSF takes seriously. As one program officer states, “We can and do hold back money until they respond to site visit concerns.”³²⁰ Only if universities ignore the issues raised in evaluation reports does NSF turn to holding back funds as a way to stimulate change. This possibility does, of course, affect the nature of the collaboration established between NSF and its grantees. However, the development of a collaborative relationship prior to the third year review provides some basis for maintaining trust through the strains of a critical site visit.

NSF is now experimenting with ways to create accountability and learning without necessarily providing funding at the level of first round grants. The agency wants to avoid reinventing the wheel and is actively experimenting with ways to use its brand, its long-term relationship supporting scientific research, and its central location within a community of practice to generalize its impact on the field as a whole.

3. Leveraging Pre-existing Networks and Practice Communities

The question remains, does all of this capacity and relationship building with particular institutions advance the field more generally? How does NSF affect the many institutions that unsuccessfully apply for funding or do not even apply? The answer lies with NSF’s location within a thick network of pre-existing relationships among universities. Universities interact regularly with one another completely outside of NSF’s role. They compete with each other for students, faculty, funding, and status. They cooperate with each other to share research, knowledge, and strategies. They are part of varied professional and disciplinary networks that regularly meet and share ideas. Universities already have incentives to pay attention to the practices and outcomes of other universities. They also meet regularly in the course of their ongoing work.

NSF piggybacks on these preexisting competitive and cooperative relationships.³²¹ Apart from its gender role, NSF is located in the middle of these communities of practice. It is “a central clearing house for the collection, interpretation and analysis of data on scientific and technical resources in the United States.”³²² It participates in these professional networks and supports many of their activities. Universities thus pay attention to the activities of other NSF grantees because they cannot afford to fall behind their competitors. So, if the University of Michigan out-

then follow “NSF Site Visit Report Summary” hyperlink).

³²⁰ Interview with Alice Hogan, *supra* note 135.

³²¹ Scholars of organizational learning emphasize the importance of networks as the locus of innovation. See, e.g., Powell et al., *supra* note 220, at 119 (arguing that “when knowledge is broadly distributed and brings a competitive advantage, the locus of innovation is found in a network of interorganizational relationship”).

³²² NSF At A Glance, *supra* note 3.

competes Stanford in recruiting top-flight scientists who happen to be women, Stanford sits up and takes notice.

NSF's position as a major supporter of science and engineering research provides regular opportunities to reach and cultivate influential practice networks.³²³ The agency mainstreams diversity as a value by considering as one of its two merit criteria how well the proposed activity "broaden[s] the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)."³²⁴ ADVANCE sometimes directly accesses networks developed by other funding units within NSF. For example, the Engineering Directorate of NSF, on its own initiative, invited ADVANCE institutions with an engineering component to present to the deans of engineering schools. These deans expressed strong interest in participating in ADVANCE work and in exploring possibilities for collaboration in the next funding cycle. These interactions solidify the interest of engineering deans within ADVANCE institutions and spread ADVANCE's impact beyond its grantees.³²⁵

By using its influence and authority within the research community to change priorities and focus attention on conditions affecting women's participation, NSF can thus have an impact far beyond the institutions it funds through ADVANCE. The information disseminated about what works and what does not work has a natural audience of highly attentive consumers with independent motivation to learn from and outdo each other. NSF also has developed collaborative relationships with other institutional intermediaries that use and support ADVANCE's work.

NSF takes direct steps to develop peer-to-peer interactions involving gender equity, both among grantees and within the field more generally.³²⁶ ADVANCE grant applicants are required to create an infrastructure that builds partnerships among existing institutions and individuals with expertise, resources, and leadership that could be tied into ADVANCE's work. It encourages grantees to use inter-departmental and professional networks within particular universities to create pressure for change. Departments and fields also cooperate and compete within universities. ADVANCE encourages development of departmental incentives to take gender participation seriously and to learn from and try to improve upon the efforts of peer departments.

³²³ Cf. Powell et al., *supra* note 220, at 137 (demonstrating the efficacy of networks in promoting learning by finding that firms' network position has reciprocal influences on research and development ties, investment, and total collaboration, and predicting that the amount of research and development activity, along with skill at managing alliances and other forms of collaboration and the reputation benefits they may bring, "help to determine how quickly and deeply a firm moves into the core of the industry's network").

³²⁴ Merit Review Criteria, *supra* note 4.

³²⁵ Interview with Alice Hogan, *supra* note 135.

³²⁶ See generally COV REVIEW, *supra* note 163.

Many other regulatory agencies require information production and disclosure in the context of monitoring compliance. But NSF ADVANCE has developed a strategy that, when implemented, overcomes the major regulatory contradictions that have limited the impact of information disclosure and monitoring.³²⁷ ADVANCE has been able to get inside universities to obtain information about where and why problems are occurring and what can be done about them. It has been able to bring different actors to the table to collaborate around difficult problems. It has developed considerable public knowledge about causes of, and potential strategic responses to, gender bias. It has forged a learning community among universities, one that produces both cooperation and competition driving institutional change. It has introduced incentives that profoundly affect how institutions make decisions and implemented a system of accountability that seems to keep universities at the table as engaged participants.

The ADVANCE initiative has prompted new ways of framing the law's normative role in the gender and racial equity arena. The story of ADVANCE illustrates the mutually constitutive relationship among institutional change, legal, and regulatory strategies. Sustaining ongoing institutional change requires external involvement in institutional capacity building and accountability, which in turn requires public interveners to develop in-depth understanding of the dynamics and leverage points of change within particular institutional domains.³²⁸ The public intervention was designed to increase local institutional capacity for change, which in turn has helped the public agency improve its own capacity to intervene effectively and to promote change at other institutions. This co-creation of regulatory innovation illustrates the value of domain-specific public interventions to advance workplace equity.³²⁹

IV. SUSTAINING AND GENERALIZING THE LESSONS OF ADVANCE

This Part explores the implications of ADVANCE's methodology for the future of public policy and advocacy to promote workplace equity. Although aspects of the ADVANCE approach pertain particularly to the university domain, its core features hold promise as a new methodology for building the architecture of inclusion in a variety of contexts. The mechanisms and strategies developed by ADVANCE, rather than the

³²⁷ For a general discussion of the barriers to information's impact on organizational conduct, see Bamberger, *supra* note 26.

³²⁸ *See id.* at 72 - 73; Estlund, *supra* note 93, at 378.

³²⁹ For an example of the co-evolution of advocacy and regulation in the area of housing, see Julissa Reynoso, *Putting Out Fires Before They Start: Community Organizing and Collaborative Governance in the Bronx, U.S.A.* (Feb. 2006) (unpublished manuscript, on file with the Harvard Journal of Law & Gender).

particular form they take in the context of academic science, can be applied in other practice domains and to other complex problems. This section analyzes the generalizability of four key insights distilled from the NSF example: (1) institutional citizenship as an organizing normative framework; (2) organizational catalysts as a portable role; (3) institutional intermediaries as a new form of public intervention; and (4) lawyers as public problem solvers.

A. Institutional Citizenship as a Normative Framework for Diversity Work

Diversity sometimes operates as a goal in search of a justification. Its legitimacy and staying power depend upon more a robust articulation of its underlying value. Justifications based on remedying historical discrimination are both too narrow and increasingly difficult to support. Even theories based on remedying ongoing bias do not state an affirmative vision of just and inclusive institutions. The business case for diversity, though strategically important, does not explain why diversity should be pursued as a public value, or justify diversity initiatives when the business case is weak.

Institutional citizenship provides a much needed affirmative vision that marries instrumental and normative concerns. It grounds equality in democratic values of participation and voice by insisting on creating the conditions enabling people of all races and genders to realize their capabilities as they understand them. The institutional citizenship goal has particular power in the context of educational institutions because of their distinctive role as gatekeepers to economic and social opportunity. Other institutions, such as the media, the police, and government agencies, also bear a direct relationship to the advancement of democratic values; it is thus easy to see the applicability of institutional citizenship as a justification for pursuing full and equal participation in these arenas.

The institutional citizenship value offers a more general justification for pursuing workplace diversity and inclusion as well. Workplaces are important intermediate institutions through which citizens make their voices heard and determine their opportunity to participate fully in economic and political life.³³⁰ Institutional citizenship combines the remedial goal of eliminating barriers to full workplace participation with the affirmative vision of participation and voice. It has particular potency as a framework for proactive efforts to diversify workplace institutions and other sites where citizens define their place in the larger polity.

³³⁰ See Sturm and Guinier, *supra* note 254, at 1031.

B. Organizational Catalysts as a Portable Role

The organizational catalyst role holds considerable promise as a means of creating ongoing institutional mindfulness and accountability. Naming the role is a first step in the process of legitimating and promoting its use as a tool for institutional change. These are individuals with social capital and legitimacy within particular practice domains who operate at the convergence of distinct but interdependent systems. The role's effectiveness depends upon cultivating the qualities that make NSF PIs and STRIDE members so effective: professional legitimacy, insider/outsider status, operation at the intersection of multiple systems, evidence-based decision making, deep knowledge of relevant contexts, and external accountability. The precise qualities of an organizational catalyst will vary with the context, but people performing this function can be found in many different types of institutions.

The organizational catalyst role is not unique to workplace equity initiatives. It bears resemblance to other intermediary roles that have been identified as important in promoting social change or diffusing norms. These include Debra Meyerson's tempered radicals, who play an under-the-radar role in the everyday workplace,³³¹ Malcolm Gladwell's "connectors, mavens, and salesmen," who are the people "critical to social epidemics,"³³² and Sally Merry's translators, who "refashion global rights agendas for local contexts and reframe local grievances in terms of global human rights principles and activities."³³³ What is distinctive about the ADVANCE approach is that the regulatory framework builds the development of organizational catalysts into its structure.

Public intervention strategies could strengthen this role's use by building the development of organizational catalysts into regulatory design. Funding agencies or administrative oversight bodies could insist that grantees involve organizational catalysts as part of the implementation process, as a strategy for connecting information with action. This strategy would leverage and sustain the inchoate power of individuals who have been playing these roles under the radar screen and without any institutional support.

Organizational catalysts would enable effective public intervention in a wide variety of contexts where cultural and institutional change is necessary to achieve public norms. Many have criticized public interventions that rely upon information disclosure because they lack

³³¹ See MEYERSON, *supra* note 216, at 5, 16 - 17.

³³² Malcolm Gladwell, *The Tipping Point: How Little Things Can Make a Big Difference* 34 (2000).

³³³ Sally Engle Merry, *Transnational Human Rights and Local Activism: Mapping the Middle*, AM. ANTHROPOLOGIST (forthcoming) (manuscript at 7, on file with the Harvard Journal of Law & Gender).

teeth.³³⁴ As the example of women in academic science demonstrates, information alone will not produce change. There have to be mechanisms and incentives in place prompting its use. The politics and culture of institutional change must be taken into account, along with the need to sustain pressure and create spaces for collective action among those directly affected.³³⁵ Organizational catalysts provide such a mechanism.

In the diversity arena, organizational catalysts have begun to play a significant role in initiatives beyond NSF ADVANCE. Some universities have created new administrative positions with responsibilities similar to ADVANCE PIs, such as the Vice Provost for Diversity Initiatives at Columbia or the Senior Vice Provost for Diversity and Faculty Development at Harvard.³³⁶

These initiatives illustrate the promise of the organizational catalyst role, as well as the risks attached to relying upon organizational catalysts as a change strategy without also providing a source of external accountability. First, there is the risk of role substitution: reliance on an institutional position or role in lieu of a well-researched concept and action plan. Some non-ADVANCE institutions appear to have created a high-level position to spearhead a change process without supporting the institutional self-study and strategic planning so crucial to the role's effectiveness. These initiatives may also fail to incorporate monitoring and external accountability into the role's operation. Some internally generated proxy for NSF's grant application, monitoring, and renewal process might help to assure that the organizational catalyst role remains tethered to evidence-based planning and accountability.

Second, there is the risk of over-centralization. The position could foster the expectation that the responsibility for change lies primarily with this one administrative official. The role-occupant might also be tempted to use a top-down strategy, relying on formal administrative authority and access to push through policy changes. This approach would undercut the development of shared responsibility for change and induce passivity by faculty and administrators whose active participation is necessary for cultural and systemic change. Over-centralization also encourages deference to administrative decisions and limits the capacity to hold the organizational catalyst accountable for her actions. Centralization of responsibility in a single individual also renders the change initiative vulnerable if the occupant of the position were to leave without a successor in place. The organizational catalyst role could be structured to minimize

³³⁴ See, e.g., Bagenstos, *supra* note 13; William M. Sage, *Regulating Through Information: Disclosure Laws and American Health Care*, 99 COLUM. L. REV. 1701, 1707 (1999); Whitman, *supra* note 98.

³³⁵ See *supra* Part I.

³³⁶ For a list of these roles, see HARVARD TASK FORCE REPORT, *supra* note 19, at 11 - 12.

these risks by allocating responsibilities among different people, creating participatory oversight by groups in a position to evaluate the work of the office, and requiring ongoing public reporting on the office's activities and impact.

Finally, there is the risk of bureaucratization. Part of what makes the organizational catalyst role work is its fluidity and experimental character. PIs and STRIDE are constantly reinventing themselves to respond to changes in the environment. If the position becomes too directly intertwined with and accountable to those with formal power, it risks losing its independence, its openness to adaptation, and ultimately its legitimacy. If the position's occupants become full-time administrators for too long, they might lose scholarly credibility and access to local knowledge and thus also lose the social capital so crucial to the role's effectiveness. Over time, the role could become routinized and divorced from a change process with adequate resources and connections to constituencies for change and, at worst, devolve into a symbolic or toothless position. An unlimited term in an administrative position may also blunt the sense of urgency and drive that the PIs now bring to their role. The relentless questioning of the status quo, which seems so crucial to the position's impact, may be difficult for one person to sustain over the long run, especially without a break.

The challenge is to define a long-term role that institutionalizes the experimental qualities of the organizational catalyst. This essentially poses an institutional design problem. The position could be structured to build in collaboration with diverse constituencies. Checks against co-optation and bureaucratization could be achieved by establishing rotating and shared positions, which might also make it easier to recruit high-status individuals for these roles. It is also important that these positions maintain independence from the central administration as well as accountability to constituencies committed to gender and racial equity, including peer institutions involved in similar work. Organizational catalysts could themselves be crucial participants in designing the expansion and institutionalization of the role, with their successors in mind. Ideally, organizational catalysts will be nested within a broader regulatory regime that includes institutional intermediaries that can provide external accountability and support.

C. Institutional Intermediaries as a Generalizable Public Approach

The NSF example models how public institutional intermediaries can effectively participate in ongoing institutional change initiatives. NSF is a distinctive type of institutional intermediary: an independent public agency that emphasizes scientific research and intervenes primarily through

grant-making. It is easiest to see how NSF's approach could be employed by other government funding agencies with similar features. But the public intermediary role could be played by a far wider range of institutions, including other government agencies, accrediting bodies, monitoring bodies, professional associations, and foundations. In some situations, these organizations are in a position to build institutional capacity, pool information, and leverage accountability and change. This section sketches out some possible extensions of this institutional intermediary methodology beyond the boundaries of academic science.

The spending clause is widely used as a way to equip government agencies to influence private activity, but as the OFCCP example illustrates, many agencies have not been terribly effective or accountable in their oversight.³³⁷ NSF's strategies of reciprocity, capacity building, and harnessing communities of practice could be usefully employed by other federal funding agencies. The NSF example demonstrates that, with a relatively low investment of resources, agencies can build institutional transformation into their grant administration role. Regulatory resources could be effectively leveraged if public agencies were to focus their efforts on networked industrial or organizational sectors, particularly those which interact regularly with those public agencies as part of their routine practice. NSF's success depended in large part on its location as a capacity building agency within an ongoing community of practice and its role in harnessing the incentives and communication channels of that network. The experience with ADVANCE supports the view that public intervention to address complex bias will be most effective if it targets well-developed networks or communities of practice and then uses those pre-existing relationships to promote learning and change.³³⁸ Agencies involved in supporting and monitoring the everyday work of institutions within a particular sector may thus have a strategic advantage over generic compliance agencies in implementing public norms.

For example, NSF's regulatory strategy has direct applicability to the federal Office of Juvenile Justice and Delinquency Prevention ("OJJDP"). OJJDP bears administrative responsibility for overseeing Congress's requirement that states receiving federal juvenile justice funds attempt to reduce existing disparities in the confinement rates of minority juveniles.³³⁹ In a forthcoming article entitled "Disparity Rules," Olati

³³⁷ See Jody Freeman, *The Contracting State*, 28 FLA. ST. U. L. REV. 155, 167 (2000) (discussing the role of contract as a regulatory instrument).

³³⁸ See W. Richard Scott & John W. Meyer, *The Organization of Societal Sectors: Propositions and Early Evidence*, in *THE NEW INSTITUTIONALISM IN ORGANIZATIONAL ANALYSIS* 108, 117 – 22 (Walter W. Powell & Paul DiMaggio eds., 1991) (discussing the concept of societal sector and the trend toward societal sectorialization).

³³⁹ See Pub. L. No. 102-586, 106 Stat. 4982 (1992).

Johnson brings to light this little known provision, known as the disproportionate minority contact standard, and offers it as a way to reduce racial disparities in criminal justice institutions.³⁴⁰ She argues that this provision will address structural inequality “by encouraging institutions to collect information about racially disparate effects, to evaluate how their policies and practices contribute to racial disparity, and to develop effective remedies for these disparities.”³⁴¹ Her article, which provides an innovative framework for addressing indifference of public actors to racial disparities, leaves open the question of how the federal agency can assure that information will be reliably generated by the states and that this information will produce effective problem solving and influence criminal justice decision making to reduce racial disparities. The institutional intermediary approach offers a model to guide the implementation of this criminal justice intervention. Other agencies that operate federal funding programs with public norms attached, such as the Department of Transportation’s role in the construction industry and the Department of Education’s role in schools, could also apply the strategies analyzed here to improve their efficacy.³⁴²

Licensing, monitoring, and accrediting agencies also could play an institutional intermediary role within particular industrial sectors, such as the Securities and Exchange Commission³⁴³ and the Food, Safety, and Inspection Service of the Department of Agriculture.³⁴⁴ Indeed, one scholar has already used the NSF ADVANCE model developed in this Article as a springboard for a regulatory innovation in the context of securities regulation. A recent article by Cristie Ford analyzes a reform in the securities industry using third parties as monitors who act as intermediaries to promote organizational change.³⁴⁵ Drawing on an earlier draft of this Article, Ford sees “the promising beginnings of a new, or

³⁴⁰ Olatunde C.A. Johnson, *Disparity Rules*, at 1, (unpublished manuscript on file with the Harvard Journal of Law & Gender).

³⁴¹ *Id.* at 4.

³⁴² See James S. Liebman & Charles F. Sabel, *A Public Laboratory Dewey Barely Imagined: The Emerging Model of School Governance and Legal Reform*, 28 N.Y.U. REV. L. & SOC. CHANGE 183 (2003); Clark D. Cunningham, Glenn C. Loury & John David Skrentny, *Passing Strict Scrutiny: Using Social Science to Design Affirmative Action Programs*, 90 GEO. L.J. 835, 844 (2002) (“As a monopolistic purchaser of construction work on a huge scale, the U.S. Department of Transportation (DOT) is in a key position to observe the lingering effects of racial discrimination and experiment with ways to alter the market and social mechanisms that perpetuate those effects.”).

³⁴³ See Cristie L. Ford, *Toward a New Model for Securities Law Enforcement*, 57 ADMIN. L. REV. 757, 782 (2005).

³⁴⁴ See, e.g., Sabel, *supra* note 307, at 138 (documenting FDA’s strategy of requiring regulated entities to “scan periodically for possible hazards and present a plan for mitigating those that it identifies” and then evaluating the adequacy of plans and steps to realize them against the benchmarks set by best performers).

³⁴⁵ See *id.* at 759 - 60.

resurgent, model” in what she calls the “Reform Undertaking”: the use of agreements placing individuals with stature, independence, and credibility within the securities industry in a position to generate information, facilitate change, and hold companies accountable.³⁴⁶ If these third parties are themselves accountable to a central body, much as PIs are accountable to NSF, then they are in a position to “create a relatively brief temporal space within which the firm can begin to make sense of its history, define objectives, and identify solutions to cultural problems on an ongoing, iterative basis.”³⁴⁷

Nonprofit or professional associations that play an accrediting or monitoring role offer yet another form of a public institutional intermediary. Take the law school context as an example. Law schools have no single federal funding agency or other government intermediary in a position to play the role NSF occupies in the sciences. So the question becomes, what are the intermediary bodies that interact regularly with law school stakeholders and that could use their position to build knowledge and incentives for institutional transformation. The American Bar Association (“ABA”)? The ABA accrediting committee? The Association of American Law Schools (“AALS”)? The National Association of Law Placement Officers? The methodology I am proposing does not call for simply transposing the NSF structure into a new arena with a different set of actors, incentives, cultural practices, and power dynamics. Instead, it offers an analytic framework to identify different intermediary bodies that could share information and harness the cooperative and competitive pressures of law schools to the project of diversifying law school faculties. The question becomes: what incentives, resources, and opportunities exist for the ABA or other potential intermediaries to foster the development of a “collaboratory” of law schools experimenting with how to diversify their faculties.

Foundations are also in a position to perform the institutional intermediary role. Like NSF, they provide funding to influence particular sectors or problems, and many foundations have become repeat players with tremendous influence within particular communities of practice. Some foundations, like the Ford Foundation and the Sloane Foundation, are already involved in various educational equity projects. They could more explicitly link their funding requirements to developing learning communities and fostering institutional transformation, as NSF has. This process could begin by enlisting grantees in understanding the structural barriers to change and mapping the field to determine the location of leverage points and organizational catalysts. Many of the strategies used

³⁴⁶ *Id.* at 759.

³⁴⁷ *Id.* at 807.

by NSF to build the field and create peer-to-peer learning and accountability could be effectively employed by private foundations. Indeed, it would be worth exploring the possibility of public-private partnerships among foundations supporting this work.

As ADVANCE-type interventions take hold, it becomes important to work through the relationship between capacity-building approaches like ADVANCE and more conventional compliance approaches like Title IX and affirmative action. NSF, like other federal science agencies, is in the process of developing a Title IX compliance program, in the wake of the GAO report documenting a lack of NSF compliance review under Title IX. The agency has appointed a compliance officer with responsibility for conducting Title IX reviews, and he has begun that process. NSF ADVANCE staff has consulted with him about how to structure these investigations.

The discussions of Title IX's role should address how federal regulatory agencies can most effectively intervene to address complex bias. It may make sense for them to employ the ADVANCE strategy of focusing on particular sectors and disciplines. It also may be possible to construct a synergistic relationship between NSF ADVANCE and Title IX. NSF ADVANCE institutions are demonstrating that structural bias can be reduced through proactive efforts that improve the overall quality of the institution. ADVANCE institutions have developed strategies that could be generalized to other institutions to reduce bias. But this cross-institutional learning will not take place in institutions that fail to acknowledge the problem or refuse to take it seriously. Title IX could play a useful role in getting the attention of universities that have resisted change. As the track record for gender equity improves, institutions that do nothing will face a larger gap between their institutions and those that have undertaken gender equity initiatives. This gap may then provide a stronger basis for increasing scrutiny under Title IX.³⁴⁸

Affirmative action officers in some institutions have already begun the process of retooling themselves to take advantage of the leverage created by ADVANCE-type initiatives. At Columbia, for example, the affirmative action officer is working with Columbia's "organizational catalyst," the vice provost for diversity initiatives, to improve the quality of information gathering, which can then be used for problem solving and strategic planning, as well as for affirmative action reporting. This collaboration has also increased the affirmative action officers' access to faculty and administrators. The affirmative action officer at Michigan has

³⁴⁸ For a similar approach adopted by the judiciary to encourage employers to undertake problem solving needed to address second generation employment discrimination, see Sturm, *supra* note 20, at 480 - 89.

built the knowledge generated by ADVANCE into training programs that cover a wider scope. He has also translated some ADVANCE principles into university policy. At the same time, affirmative action officers spend a considerable amount of time handling discrimination complaints and processing requests for disabilities accommodation.³⁴⁹ Their conflict resolution and compliance work provides accountability and redress for individual claims of discrimination, particularly for serious violations of established equality norms. This policing role produces, and arguably requires, an arms-length relationship between affirmative action officers and the university administration. It limits the possibility and desirability of turning affirmative action officers into organizational catalysts. Instead, the challenge is to figure out the most constructive relationships between organizational catalysts and compliance officers.³⁵⁰

D. Lawyers as Public Problem Solvers

Finally, the ADVANCE initiative suggests new possibilities, strategies, and locations for lawyers involved in pursuing workplace equity. Gender and racial justice advocates could play a crucial role in developing the capacity of institutional citizens to participate effectively in these institutional transformation projects. They could use the methodology of institutional analysis to identify and foster the conditions for effective public intervention in particular domains. They have begun to intervene strategically in particular industrial or occupational sectors that present opportunities for mobilizing and sustaining change. Some of the most successful advocacy has focused on domains in which advocates could mobilize communities of practice with overlapping interests, develop institutions that could serve as public intermediaries, leverage incentives to press employers to take problems seriously, and create occasions for using information to push for institutional change. For example, the Workers Rights Consortium exemplifies this strategy, by creating a tripartite body that brings student activists, labor experts, and university procurement officers together to create an accountability process for garment manufacturers who sell to universities.³⁵¹

I have written elsewhere about new roles for lawyers and law

³⁴⁹ See Interview with Affirmative Action Officer (Apr. 26, 2004).

³⁵⁰ In a recent article applying the approach described here to the securities industry, Cristie Ford counsels against simply expanding the functions of regulators to include those of organizational catalysts in the context of securities regulation, “[b]ecause Enforcement does not have the resources, the mandate, the necessary culture, or the appropriate relationship to organizations to effect meaningful organizational change.” Ford, *supra* note 343, at 782.

³⁵¹ See Mark Barenberg, *Global Labor Rights: From Private Monitoring to Public Law* (July 17, 2003)(unpublished manuscript, on file with the Harvard Journal of Law & Gender). The janitorial industry is another area where advocates effectively harnessed these conditions to produce a successful advocacy campaign. See Estlund, *supra* note 93, at 352 - 54.

generally in promoting the practice of workplace equity.³⁵² This work documents how innovative lawyers have responded intuitively and creatively to the increasing complexity in workplace problems, the diffusion of the sites in which legal norms are elaborated, and the limitations of traditional, legalistic responses.³⁵³ The dynamic, structural character of the substantive goal of workplace equity has important implications for legal advocacy and for law generally. Workplace advocates have to think institutionally and organizationally. They must have the capacity to gather information that identifies and explains problematic patterns, to prompt the development of systems to hold companies accountable for addressing these patterns, and to collaborate with internal and external stakeholders needed to sustain on-going change. This stance is: (1) problem-oriented in defining workplace equity (both normatively and strategically) as an ongoing institutional dynamic, (2) innovative in developing relationships, spaces, or structures for ongoing problem solving, and (3) collaborative across professional, disciplinary, and institutional boundaries.³⁵⁴

The experience with ADVANCE illustrates both the importance and the promise of lawyers as intermediaries, problem solvers, institutional designers, and information entrepreneurs. In this area, lawyers will stand in the way, get out of the way, or pave the way for creative experimentation. Courts are likely to follow the lead of innovative universities that have figured out how to address the barriers to full participation and to create environments that reflect the vision of full institutional citizenship that seemed to animate the *Grutter* decision. There is evidence that at least some lawyers are exploring new roles that reconcile the double-edged sword of the law. Advocacy and research organizations have begun to focus their efforts on helping universities and government agencies design effective diversity initiatives that will withstand legal challenge.³⁵⁵ They are also working with faculty within universities to help them play a more effective role in within their own institutions and departments. They are forming connections among the different organizations that are working to advance the participation of women and people of color. Within the university context, advocates could play an important role in developing the capacity of faculty to participate

³⁵² See generally Susan Sturm, Equality and the Forms of Justice, 58 U. MIAMI L. REV. 51 (2003); Sturm, *supra* note 283; Susan Sturm, From Gladiators to Problem-Solvers: Connecting Conversations About Women, the Academy, and the Legal Profession, 4 DUKE J. GENDER L. & POL'Y 119 (1997).

³⁵³ Sturm, *supra* note 283, at 281.

³⁵⁴ *Id.* at 299.

³⁵⁵ I have begun working with staff lawyers of civil rights, women's rights, and social justice organizations who are trying to figure out how to work with experts, general counsel, admissions officers, and governmental agencies as part of the process of developing new strategies for achieving inclusive institutions.

effectively in the institutional design process and in providing a framework for social science experts to collaborate effectively with those involved in the process of institutional transformation.

Some forward-looking general counsel have begun to meet with these advocacy organizations to brainstorm about effective strategies for moving forward. The general counsel of NSF exemplifies the potential of lawyers working within organizations to use a capacity-building orientation simultaneously to advance core institutional values and to achieve compliance with the law.

CONCLUSION

This Article amplifies the voices of organizational catalysts, lawyers, and public agency leaders whose efforts are deeply informed by theories of social change. They have collectively produced an innovative public approach, which shows a way to achieve the institutional mindfulness so crucial to full participation by women and people of color in the academy. Given the importance of higher education and scientific advancement to society, NSF ADVANCE would warrant careful study even if it were only considered for its impact on women's participation in the academy. Advocates and policymakers on both sides of the political spectrum have recognized universities' pivotal role in society's redefinition of the equity project. Universities' missions tie them directly to integration goals. Courts, policymakers, and advocates recognize higher education as the gateway to citizenship, leadership, and democratic participation. The Supreme Court in *Grutter v. Bollinger* emphasized that "all members of our heterogeneous society must have confidence in the openness and integrity of the educational institutions that provide [leadership] training."³⁵⁶ A university education is the conduit into many occupations, and thus integration of many industries cannot occur unless universities themselves diversify.

But this Article has shown that the implications of ADVANCE extend beyond the academic context within which it is actually operating. The initiative provides a methodology for remedying structural inequality by advancing institutional citizenship that can be used in a variety of workplace communities to realize meaningful and sustainable change. This methodology has the potential to develop new institutions and roles that actually work to advance workplace equity. It could be used to realize other public values that have remained elusive to implementation, while also enhancing the effectiveness of more traditional compliance approaches, such as affirmative action.

³⁵⁶ 539 U.S. 306, 332 (2003).

Scholars have much to learn from the ADVANCE example, both in our capacity as citizens of our own institutions and as researchers developing new frameworks for pursuing equality. Like the problems we study, the solutions to the dilemmas facing equality scholars lie at the intersection of disciplines, institutions, and regulatory systems. Their elaboration requires fluency across these various domains, as well as the capacity to bridge the normative and the empirical, the theoretical and the practical. We, too, are learning to be organizational catalysts. In the process, we are re-visioning the role of law in promoting just institutions.