



The StratEGIC Toolkit: *Users' Guide*

Strategies for Effecting Gender Equity and Institutional Change

Increasing the representation, involvement, and success of women in science, technology, engineering and mathematics (STEM) fields within American higher education has been the central concern motivating the National Science Foundation ADVANCE Program and the work at institutions this program has supported. Across more than a decade, a body of knowledge has emerged from the experiences of universities that have received ADVANCE Institutional Transformation (IT) grants to create environments more conducive to the success of women scholars in STEM fields. Our research team has drawn upon these experiences by studying approaches to organizational change used by institutions who received ADVANCE IT grants in Rounds 1 and 2 of the program.

The StratEGIC Toolkit distills and shares research-based interventions used in ADVANCE IT projects and the reasons they may or may not work in different contexts. We seek to assist ADVANCE leaders, those interested in writing ADVANCE proposals, and other institutional leaders grappling with how to initiate, expand, or deepen their own efforts at organizational change to support STEM women faculty by addressing the following questions:

- What strategies have been used to create institutional environments that encourage the success of women scholars?
- Which strategies work and which don't? Why?
- What strategies should be included in a change plan?

This Toolkit provides a comprehensive response to those questions. The first component of the Toolkit is a set of 13 Strategic Intervention Briefs that together highlight a range of strategic interventions, their strengths and limitations, and how they might be used. The second component is a set of 15 Institutional Portfolios, each of which highlights a single institution as an example of how these interventions can be combined into comprehensive change initiatives carried out under ADVANCE IT awards. Thus the Toolkit highlights key findings about interventions useful in organizational change initiatives and provides information and perspectives useful to leaders seeking to learn from other such projects. This Users' Guide provides some brief guidelines for reading and using the StratEGIC Toolkit.

- First, we explain some key points from social science research on organizational change that will inform your reading about the interventions we present.
- Second, we describe the research that has led to the information and findings we share here.
- Third, we offer specific suggestions for how to read and use this toolkit to foster organizational change in support of the advancement of STEM women scholars.

Some Key Points on Organizational Change

Organizations, including universities, are complex and multi-faceted—and thus, efforts to bring about significant organizational change need to acknowledge that complexity. While those initiating and leading

change efforts often want to identify a few interventions that will bring results, the literature on change, and our own research, indicate that change initiatives benefit from a more comprehensive and patient approach. Several questions are important as leaders plan and initiate a strategic change effort.

- ***What is the problem to be addressed?*** Women in the academy face a range of challenges. These may include, for example, implicit bias about their capabilities, inadequate structures and policies to support them in managing responsibilities in both professional and personal domains, infrequent opportunities for visibility and upward mobility within organizational and disciplinary contexts, limited support for individuals to increase their own sense of self-efficacy for handling leadership roles, or limited opportunities for partners to find appropriate work opportunities. Identifying *which* specific challenges are present in a given institutional situation is a key step in planning an institutional change endeavor. That is, choosing specific interventions depends on what problems the institution has decided to address.
- ***What is the context in which the change process will occur?*** A comprehensive and thoughtful approach to change requires consideration of the specific culture and climate of an institution. For example, how do faculty and administrators interact and to what extent does a sense of trust and collegiality pervade a campus? How hierarchical is the decision-making process, and who is involved in what kinds of decisions? Is the institution situated in a more urban or more rural area, and how does location impact the experiences of women faculty and their partners? What values and traditions are important at the institution, perhaps related to its history, affiliations, or location? How does institutional size affect the ways in which members of the community interact? Identifying key aspects of the institutional culture that may influence the success of a change initiative is important in selecting specific change interventions.
- ***Which combination of strategies will be most powerful?*** Since universities are complex organizations with multiple parts, using multiple well-chosen interventions is likely to be more effective than using one intervention alone. For example, the impact of establishing family-friendly policies to provide options for faculty to rebalance professional time in light of personal responsibilities is enhanced when coupled with efforts to cultivate a culture that encourages faculty members to use such policies without concern that they will appear uncommitted to their work. The impact of providing opportunities for women to participate in leadership development programs becomes more extensive when tenure and promotion policies and processes include provisions to recognize and value participation in such programs. As these examples show, effective change strategies initiatives require multiple interventions that are mutually reinforcing and complementary.

Here is the advice we offer: Creating environments that are conducive to supporting the career progress of STEM women faculty involves being strategic and analytical. As you use this Toolkit and consider various institutional programs or interventions for change, we urge you to consider and discuss the questions listed above. Think strategically about which interventions, in combination, will have the most impact, given the problems to be addressed and the context of your institution.

An Overview of the Research Study Informing the Findings

As higher education researchers, members of the ADVANCE community, and evaluators of several ADVANCE projects, we are often contacted and asked for our advice and suggestions about strategies to promote organizational change. We initiated this study to investigate what could be learned from ADVANCE initiatives that is useful to both practitioners and scholars interested in organizational change to improve gender equity in the academy.

Our multi-year study used a mixed-methods approach, guided by literature and theory on organizational change and faculty work. We chose for our study sample the first nineteen institutions that held ADVANCE IT grants awarded in Rounds 1 and 2 (2001-2004), because these institutions had finished (or nearly so) their formal ADVANCE projects by the time we began the study and their leaders could offer reflective insights on what they had accomplished and learned. We began by reading the annual and final reports of these nineteen institutions and cataloguing their activities to understand what they had undertaken and why, and with what results. Following our document review, we interviewed leaders of each of those projects to learn in more detail about their approaches to change and the lessons they had learned.

We then selected five universities—diverse in geographic location, aspects of organizational characteristics and culture, and strategies and approaches used—as case studies for intensive on-campus visits. During these visits we talked with ADVANCE leaders, university leaders, faculty members, and others on campus who generously shared their perceptions of their institutional context, change strategies, what worked well and what worked less well, and why. Our research team used careful social science methods of coding and analysis, guided by social science literature, to reach the conclusions we now share. Our Advisory Board, as well as other generous colleagues whom we consulted, helped us with key decisions throughout the research process. Our study focused on the first two rounds of IT institutions; while new ideas have emerged since, our recent work with projects funded in Rounds 3-6 also confirms that the findings here are robust and remain relevant.

Structure and Content of the Strategic Intervention Briefs

The first part of this tool kit includes a set of Briefs that each focuses on an intervention that could be included in a portfolio for fostering organizational change to support women scholars in STEM fields. Rather than calling these “best practices,” we urge you to see these as possible options: their value depends on how they fit into your institutional context and the problems you wish to address. Each type of intervention has benefits but also limitations. Furthermore, each can be conceptualized, designed, and implemented in a variety of ways. These interventions become strategic when you relate your choices to your goals for organizational change and the particularities of your institutional context, and when you consider how the interventions combine into an overall package.

Each Brief is organized in a similar format:

- **Introductory comments:** a statement succinctly identifying the focus and scope of the Brief
- **Rationale:** why the strategy or intervention is relevant to organizational change initiatives focused on gender and STEM fields
- **Purpose:** the specific goals of the strategy or intervention
- **Audience:** who the strategy or intervention targets or intends to impact
- **Models:** variations and elements that can vary in the overall strategy or intervention, with choices about optimal elements dependent on the specific institutional goals and context
- **Examples:** institutional examples of how the strategy has been used in various ways
- **Evaluation:** how institutions have assessed the value and impact of the strategy, and highlights of evaluation findings, if available
- **Affordances and Limitations:** Benefits that can accrue from using the strategy, as well as limitations or drawbacks to be considered, depending on the specific variations used.

The Briefs address thirteen different interventions that we identified from our study as contributing to an overall plan for organizational change:

1. Faculty professional development programs
2. Grants to individual faculty
3. Mentoring and networking activities
4. Development of institutional leaders
5. Inclusive recruitment and hiring
6. Equitable processes of tenure and promotion
7. Strengthened accountability structures
8. Flexible work arrangements
9. Practical family-friendly accommodations
10. Support for dual-career couples
11. Strategies for improving departmental climate
12. Visiting scholars
13. Enhanced visibility for women and women's issues

Structure and Content of the Institutional Portfolios

A second component of the Toolkit is the Institutional Portfolios, which offer concise 3-4-page summaries of ADVANCE IT project at specific campuses. These summaries describe how different institutions combined interventions into an overall change portfolio. They also demonstrate, through real examples, how the institutional context influenced each project team's identification of core problems for STEM women faculty on their campus, their choice of interventions to pursue, the design and implementation of those interventions, and the success or non-success of the chosen interventions singly and combined.

The Institutional Portfolios are based on data collected in 2009-10, primarily project reports and documents and interviews with project leaders, augmented in some cases by a site visit conducted in 2010-11. They are very brief summaries of the major features of each project, and in most cases much more extensive information is available on the institution's ADVANCE project web site. The material was organized and analyzed by the research team, but each of the published Portfolios was reviewed and approved by its institutional team, whose members corrected some errors of fact and offered helpful clarifications. Teams were also invited to provide an update on their work through late 2014, and many elected to do so. These updates provide insight into the long time frame needed to achieve some types of change, and into the variety of models for sustaining and institutionalizing ADVANCE programming after the grant funding ends.

Each Portfolio is organized with a common structure:

- ***Identifying Details:*** the institution's name, ADVANCE IT award dates, and leadership team
- ***Key Elements of the Overall Change Strategy:*** the overall goals and design of the ADVANCE project, and its theory of change, whether explicitly stated or as extracted by the research team
- ***Relevant Elements in the Institutional Context:*** contextual features that influenced the project team's identification of problems on which to focus, the choice of interventions to address those problems, and the success of these interventions
- ***Scope:*** the disciplines, departments and faculty audiences addressed by the project
- ***Program Elements:*** major components and program activities of the ADVANCE project
- ***Outcomes:*** key outcomes of the project, primarily at the institutional level, especially changes in women's representation and advancement, campus climate, and institutionalization of ADVANCE programs. These may be drawn from institutional data, evaluation reports or interviews, and may include positive outcomes as well as areas where progress was less readily achieved or measured.

- **Research Team Observations:** analysis from the research team, highlighting strengths or challenges for the project and areas of focus or difference from other projects in the ADVANCE community
- **Project Team Observations:** updated information from the project team on the status, outcomes and institutionalization of their work as of 2014.
- **For Further Reading:** references to web sites and other resources for learning more about the ADVANCE work at a specific institution.

Using the Toolkit

We hope you will consider using the Toolkit in very practical ways.

- A team charged with developing a proposal for organizational change to promote women faculty might review this Toolkit for ideas. Perusal of the Briefs may stimulate conversation among the group about the specific problems and issues to address at their university, data they need to gather, and elements of their context that are relevant to possible change strategies. Reviewing Portfolios from similar institutions may help to show how interventions can be combined to respond to specific institutional contexts and to have different kinds of impact.
- A committee working on a specific intervention—mentoring, for example—might print off the relevant Brief to reference at a meeting. The Brief might be used as a conversation starter or as a checklist to work through possibilities, variations, and potential benefits and limitations.
- A senior institutional leader might share these materials when making a charge to a new faculty task force focused on improving the institutional climate for women.
- An ADVANCE campus leader, experienced in many of these approaches, might review the Briefs and Portfolios for fresh ideas to invigorate or extend excellent work already underway on campus.

The Strategic Intervention Briefs present snapshots of change interventions that ADVANCE institutions have used, offering ideas for other institutions. With their emphasis on variations, options, affordances, and limitations, the Briefs remind us that organizational change processes must be dynamic and flexible. One intervention alone will usually not result in the desired change. Which are most useful, and in what form, depends on the institutional context and the issues to be addressed. The Institutional Portfolios illustrate this point by showing how specific institutions combined and adapted multiple interventions to suit their local needs and contexts. Change initiatives like these are not simple, but collectively the Portfolios make clear that more can be accomplished when multiple levers of change are brought to bear upon the problem.

Concluding Thoughts

In the spirit of collegial exchange and support that is a hallmark of the ADVANCE community, we offer this Toolkit for use in both new and ongoing institutional efforts to foster change in support of the recruitment, retention, advancement, and success of women STEM scholars. We welcome comments about how you have used the StratEGIC Toolkit and suggestions for ways in which we could make it more useful. Please check back at our web site as we share more details from the research.

Acknowledgments

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Related Reading

Other cross-institutional studies of ADVANCE and similar initiatives include:

- Bilimoria, D., Joy, S., & Liang, X. (2008). Breaking barriers and creating inclusiveness: Lessons of organizational transformation to advance women faculty in academic science and engineering. *Human Resource Management* 47(3), 423-441.
- Bilimoria, D., & Liang, X. (2012). Gender equity in science and engineering: Advancing change in higher education. New York: Taylor and Francis.
- Fox, M. F. (2008). Institutional transformation and the advancement of women faculty: The case of academic science and engineering. In J. C. Smart, ed., *Higher education: Handbook of theory and research*, vol. 23, pp. 73-103. New York: Springer.
- Morimoto, S. A., Zajicek, A. M., Hunt, V. H., & Lisnic, R. (2013). Beyond binders full of women: NSF ADVANCE and initiatives for institutional transformation. *Sociological Spectrum*, 33(5), 397-415.
- Plummer, E. W. (2006). *Institutional transformation: An analysis of change initiatives at NSF ADVANCE institutions*. Ph.D. Dissertation, Virginia Polytechnic Institute and State University.
- Stewart, A. J., Malley, J. E., & LaVaque-Manty, D. (Eds). (2007). *Transforming science and engineering: Advancing academic women*. Ann Arbor, MI: The University of Michigan Press.
- Wylie, A., Jakobsen, J. R., & Fosado, G. (2007). *Women, work and the academy: Strategies for responding to "post-civil rights era" gender discrimination*, New Feminist Solutions. New York: Barnard Center for Research on Women.

The ADVANCE Portal catalogs a large volume of useful materials created by ADVANCE grantees.

<http://www.portal.advance.vt.edu/>

Caveat: Many institutional and other websites are referenced in these materials. URLs were accurate at the time of publication, but we do not take responsibility for keeping all URLs up to date.

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