

Ten Years of the US National Science Foundation ADVANCE Program:

Increasing the Participation and
Advancement of Women in
Academic Science and
Engineering Careers

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About the NSF ADVANCE Program



- ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers
- Crosscutting: ALL NSF directorates & offices participate
- Looking for institutional change
 - 3-pronged approach at first:
 - Fellows
 - Leadership
 - Institutional Transformation (\$3.75M/5yrs)
 - Now:
 - Institutional Transformation (IT)
 - Partnerships for Adaptation, Implementation, Dissemination (PAID)



Shift from isolated powerless women in departments
to more visible upper administration

Timeline



- 1982-95: NSF Visiting Professorships for Women \$3M/25 women/yr
- 1997-99: NSF POWRE \$8-12M/year
- 1995-97: MIT Senior Women Sci. Faculty (8%)
- 1998: Why So Slow? - Valian
- 1999: MIT Study
- 2001: NSF ADVANCE \$50M/2001-2008 \$13M/2008
- 2003: Women Don't Ask - Babcock and Laschever
- 2005: MIT Senior Women Sci. Faculty at 14%
- 2006: Larry Summers resigns from Harvard presidency
- 2007: U. Michigan reports S&E female hires: 14% → 34% over 5 yrs
- 2008-2011: Shift toward minority women

NSF: US National Science Foundation funds Engineering, Science and Social Science Research



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10 Years of ADVANCE



- 5 cohorts of IT (2001, '3, '05, '08, '10): 44 + 2011-12
- 53 Fellows
- 39 Leadership Awards
- 33 + PAID Awards
- Portal: <http://www.portal.advance.vt.edu/>
- Book: [Transforming Science and Engineering](#)
- 11 IT-Catalyst (since 2008)
- Search [awards](#)

10 Years of ADVANCE



The screenshot shows the NSF website's 'ADVANCE' section. The header includes the NSF logo and the tagline 'WHERE DISCOVERIES BEGIN'. A navigation bar contains links for Home, Funding, Awards, Discoveries, News, Publications, Statistics, About, and FastLane. The left sidebar lists links for ADVANCE Program Overview & Solicitation, ADVANCE at a Glance, ADVANCE Implementation Committee (AIC), Awards, and Products, Tools & Resources. The main content area is titled 'Awards' and features an 'ADVANCE PORTFOLIO OVERVIEW' section. This section states that the ADVANCE program has a diverse portfolio and lists the following awards:

- 37 [Institutional Transformation \(IT\)](#) awards [Additionally, four small IT awards were made to support further development of promising plans for transformation]
- 11 IT-Catalyst awards (Piloted as IT-Start in 2008)
- 39 Leadership Awards (This program component is no longer active, it has been folded into the PAID component)
- 33 Partnerships for Adaptation, Implementation and Dissemination (PAID) awards
- 53 Fellows awards (Awarded in 2001 and 2003; these are no longer offered)

Below the list, it notes 'Institutional and geographic diversity in the ADVANCE grantee portfolio (excluding Fellows awards):'

- One hundred and three (103) different Institutions of higher education (76 public and 27 private)
- Seven professional STEM organizations
- Twelve Minority-Serving Institutions participation (11.6% of ADVANCE institutions)
 - 6 HSIIs
 - 4 HBCUs (including one women's college)
 - 1 Alaskan Native-Serving Institution
 - 1 institution primarily serving persons with disabilities
- Three women's colleges (including 1 HBCU)
- Institutions and organizations in 41 States, the District of Columbia, and Puerto Rico

It also mentions 'Institution in 24 [EPSCoR](#) jurisdictions'.

The 'ADVANCE AWARDS SEARCH' section states: 'Abstracts from awards made through the ADVANCE program, organized by program component, can be found using the links below. The search results will return all awards funded in full or part by the ADVANCE program. You may modify the search to select a particular award subset (e.g., active awards only) at the search site.'



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ADVANCE

for the advancement of women in science and engineering careers



Activities & Events

ADVANCE Initiatives

ADVANCE Program & Work

Diversity & Equity

Electronic Resources by Type

Initiatives by Person

On The Job

Resources

Work & Life

About ADVANCE

About NSF ADVANCE

ADVANCE Grantee Listings

Welcome


to the home page of the Advance Portal Website. This site aims to link the activities of Advance Institutional Transformation Grant recipients. You can find information using the menus on the left of the page or the search feature on the right. If you have any questions about anything here or know of links that should be added, feel free to contact us.

Announcements

Welcome to new ADVANCE IT grant recipients, October 07, 2010 by [Peggy Layne](#)

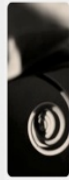
The following institutions have recently received NSF ADVANCE Institutional Transformation grants:

- West Virginia University
- University of Maryland, College Park
- Lehigh University
- Texas A&M
- University of Maine



ADVANCE Grantees

Take a look at all first, second, third, and fourth round of NSF ADVANCE grant recipient's websites [here](#).



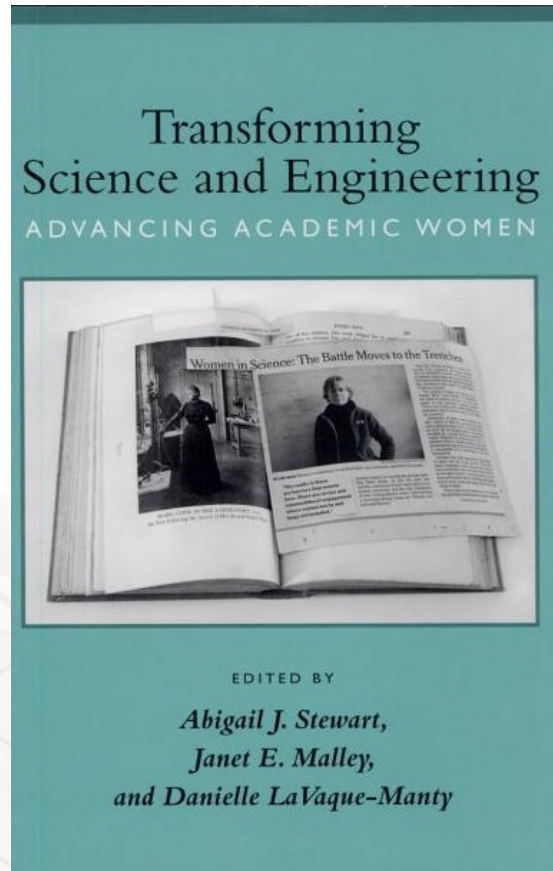
ADVANCE at NSF

"The goal of the ADVANCE program is to develop systemic approaches to increase the representation and advancement of women in academic science, technology, engineering and mathematics (STEM) careers, thereby contributing to the development of a more diverse science and engineering workforce." [more](#)



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- 5 cohorts of IT
- Very few private universities
- Requires
 - high profile administrative support
 - self-analysis/data
 - research component (social scientist(s))
- All NSF grants require
 - innovative research
 - satisfying
 - criterion 1 (intellectual merit)
 - criterion 2 (broader impact)

Major Elements



- Baseline surveys
- Support for women
- Institutional practices
- Changing the mindset (slowly!)



Common Elements



- Search Committee Practices
- Administrator Sensitizing: How?
 - Best practices (U. Wisconsin)
 - Climate survey analysis
 - Work with department chair over time
 - Interactive drama pieces

<http://www.crlt.umich.edu/theatre/index.php>



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Common Elements



- Workshops:
 - Pre-tenure
 - Getting a position
 - Managing a Research Lab
- Adaptation of successful pieces e.g.:
 - Search committee training
 - Administrator training



Products



- Spin-offs:
 - LEAD: [link](#)
 - On-Ramps to Academia: [link](#)
 - PAY It FORWARD: [link](#) and MIT Path of Profess: [link](#)
 - WIRES: [link](#)
 -



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- How
 - Data, data, data: [link](#)
 - Non-threatening
 - Rooted in what's best for institution/science
 -

Gender Tutorial



- Virginia Valian, Psychology, Hunter College
- [Gender Schemas and Careers in Science](#)

Slide 14

Factors affecting (stress)

ADVANCE Strategies



- Institutional Structure
 - Review, revise and increase transparency & effective implementation policies and procedures (esp recruitment, tenure and promotion)
 - Develop systematic and recurring institutional data collection for use in decision-making
 - Incorporate equity and diversity responsibilities and accountability into admin positions for equitable distrib. of resources, responsibilities and commitment

ADVANCE Strategies



- Equitable Career Support
 - Establish formal mentoring structures and provide recognition
 - Develop mechanisms to recognize excellence
 - Provide workshops/training to all for
 - Tenure/promotion or other career progression
 - Leadership development
 - Network building

ADVANCE Strategies



- Empowerment
 - Provide leaders with tools and resources to address gender issues
 - Provide training to other key players and reduce stressors that result in greater reliance on ad hoc procedures

ADVANCE Strategies



- Work/Life Balance Support

Retention issue of the #s we train as PhDs

- Dual career
- Transition support programs
- Encourage department flexibility and problem-solving
- Create climate that encourages people to take advantage of existing programs

Conclusion



- Shift from individuals to institutions
- Encourage institutions to take responsibility
- Collection of data
- Write policies down and practice
- Work with administrators
- Provide infrastructure support
- Some very creative elements
- Widespread effect

Acknowledgments



- NSF and all my colleagues esp
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