Proposed Toolkit for Reporting
Progress Toward NSF ADVANCE: Institutional Transformation Goals
Prepared by
ADVANCE Institutional Transformation Indicators Working Group[1]
January 2005

Purpose

ADVANCE Institutional Transformation (ADVANCE: IT) funded programs are required annually to report data related to progress toward the goals of the program. The methods and procedures outlined in this toolkit will help you to meet the NSF reporting requirement. The appendix tables and charts can be used as templates for preparing your own tables. Because of variations among ADVANCE: IT institutions both structurally as well as in terms of the kinds of data we are able to gather, there are multiple ways that data could be reported. This toolkit offers guidelines rather than hard and fast rules concerning reporting. We encourage you to modify the examples as needed to work for your institution. Collection, analysis, reporting, and presentation of these data are time-consuming tasks. The ADVANCE: IT Working Group recommends that you dedicate adequate personnel to these tasks early in your grant. Finally, this toolkit was prepared after three years of experience with the program, and modifies the earlier reporting requirements. Existing ADVANCE institutions can choose to keep their existing reporting and indicators or may choose to adopt the indicators in this toolkit. The standardization recommended in this toolkit offers potential benefits in terms of cross-institutional comparisons. A brief history of the evolution of the indicators is presented in Appendix 1.

Research Questions and Indicators

When Frehill looked at more than 30 separate institutions' reports on commissions on the status of women[2], four questions emerged as fundamental in understanding women's status as faculty within academic institutions. The Working Group agreed that the following four questions provide a framework for documenting progress toward institutional transformation.

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

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

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[1] The group included Lisa Frehill (who convened the group), Cecily Jeser-Cannavale, Priscilla Kehoe, Ellen Meader, Jennifer Sheridan, Abby Stewart, and Helena Sviglin. We are grateful for assistance from NSF ADVANCE program director Alice Hogan.

[2] Many colleges and universities have had committees or commissions on the status of women. Some were "president's" or "provost's" commissions, others were groups of individuals that get together to study the status of women.

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

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

An overview of the data needed to address these questions is presented in the following table. Data will be reported in two formats: as annual reports or periodic studies. Different reporting periods are dictated by the level of data sensitivity (i.e., the extent to which the data on that indicator changes each year or over a longer period of time) and the kind of indicator. For example, in the case of the original resource indicators (salary, start-up and space allocation) ADVANCE: IT institutions have found that in-depth analysis, often including both quantitative and qualitative dimensions, is necessary to understand how gender affects the distribution of these resources.

Overview: Research Questions, Reporting Pattern and Data Needed

Research Question(s)	Annual or Periodic	Data Needed	Original Indicator(s)*
(1) What is the distribution of science and engineering faculty by gender, rank and department?	A	1. Number of men and women tenured and tenure-track faculty by department, rank and gender	#1, 2, and 6
	P	Number of non-tenured men and women faculty (e.g., Instructional, Research, Clinical, Posdoctoral)	
(2) What are the outcomes of institutional processes of recruitment and advancement for men and women?	A	2. Number of faculty who submit tenure packets, and number awarded tenure, by gender and department	#3, 4, 5a, and 5b
	A	3. Number of faculty who apply for promotion, and number promoted, by gender, department, and promotion transition (assistant to associate; associate to full)	
	A	4. Number of tenured associate professors by department and gender with years-in-rank (in 6, 3-year categories)	
	A	5. Number of faculty who leave their departments, excluding those who died or retired, by rank, gender, and department	
	A	6. Number of faculty hired by rank, gender, and department	
	P	Cohort analyses of tenure and promotion, including to full professor	
(3) What is the gender distribution of science and engineering faculty in leadership positions in the institution?	A	7. Number of men and women scientists and engineers in leadership positions	#7, 8, and 9

(4) What is the allocation of resources for science and engineering faculty by gender at the institution?	P	Study of salaries of men and women faculty (with additional controls such as department, rank, years in rank)	#10, 11, and 12
	P	Study of space allocation of STEM faculty by gender (with additional controls such as department, etc.)	
	P	Study of start-up packages of newly hired faculty by gender (with additional controls such as field/department, rank, etc.)	

***See Appendix 1 for a full list of the original indicators.**

Years of Data Collection

Within the first year of reporting, you should identify a baseline (which may be a single year or a cumulative record—we recommend three years) for assessing the impact of ADVANCE. Data should be gathered for the baseline in the first year's annual report. Subsequent reports should make comparisons with that baseline. In addition, you should plan a schedule for studying tenure, promotion and allocation of resources; this schedule will determine when you make periodic reports to NSF. It will be most useful to your project if you can complete baseline studies within the first two years of your project. Early in the project you will need to assess the ease with which you can gather data for the annual and periodic reports.

Standards of Reporting

Departments or Fields

The ADVANCE: IT program, by definition, aims at changing our institutions, but with a specific focus on all fields represented in NSF. When reporting, you should separate the data for STEM and SBS departments. For several reasons, it is important to report STEM and SBS separately. First, the relative numbers of women differ greatly by fields which means by combining STEM and SBS, we invite critique that the data are really representative of SBS but not of STEM. Every institution should, in their annual report, provide a list of the STEM and SBS units included in their reports, as well as the units participating in the ADVANCE Institutional Transformation effort on that campus; a listing of the areas included in NSF's STEM and SBS categories are included in Appendix 2.

Data need to be reported about ADVANCE-targeted units but it is important to report STEM and non-STEM separately, where STEM consists of disciplines in engineering, physical sciences, earth, atmospheric and ocean sciences, math and computer sciences, biological and agricultural sciences, as listed in Appendix 2.

Table 0. Summary of Toolkit Tables

Table Number	Caption	Level of Aggregation
1	Number and Percent of Women Tenured and Tenure Track Faculty in Science/Engineering by Rank and Department	Department
2	Fall 2004 STEM and SBS Departmental Faculty Gender Composition	Department
3	Tenure Review Outcomes by Gender – STEM Fields*	Unit
4a	Promotion Review Outcomes by Gender: Assistant to Associate Professor – STEM Fields*	Unit
4b	Promotion Review Outcomes by Gender: Associate to Full Professor – STEM Fields*	Unit
5a	Years in Rank at the Associate Professor Level for STEM and SBS Faculty Hired as Assistant Professors	Unit
5b	Years in Rank at the Associate Professor Level for STEM and SBS Faculty Hired as Associate Professors	Unit
6	Voluntary, Non-Retirement Attrition, by Rank and Gender, year	Department
7	New-Hires in STEM and SBS, year	Department
8	Faculty Leadership Positions	Institution

*Note: Separate tables should be prepared to report the STEM and SBS fields separately.

Some units employing science faculty have a gender composition that is very different from most other STEM or SBS units (e.g., nursing, human ecology, family studies, some education fields, social work, etc.) Each institution should develop a strategy for addressing the possibility that aggregation of these units with those with fewer women will conceal important issues. At the same time, it is important to address the presence and needs of these scientists.

Defining Faculty

The focus of ADVANCE: IT is tenured and tenure-track faculty; therefore, for all reporting except in your periodic report about non-tenured faculty, report only on these faculty. Do not include faculty who are: clinical, research, non-tenure-track instructional, emeritus, volunteer, visiting, etc.

Level of Aggregation

Within your institution, you will need to collect most data by department or department-like schools or colleges (e.g., those that are not subdivided into departments). These department-level data are very helpful for pinpointing issues needing attention within institutions. Tables 0, 1, 2, 6, and 7 will report information at the department level. For some indicators, you will aggregate departments and department-like units to levels that make sense for your institution.

Examples might be colleges, divisions, broad disciplinary areas, etc. These aggregated reports are also appropriate for posting on your program's website. The table, below, indicates the appropriate level of aggregation for the reporting tables recommended in this toolkit.

Annual vs. Periodic Reporting

If an item is labeled "Annual," the expectation is that you will report that table to NSF each year, with the most current data available for that year. Some sites prefer to turn in their data requirements slightly after their annual reports, in order to include the data from the same calendar year for which the report is due; other sites prefer to report the most recently-available data, even if it is a year behind. Each table reported should have some text attached (as a section of the annual report), analyzing the results in that table (especially in relation to the baseline data on that indicator.)

If an item is labeled "Periodic," then there is much more flexibility in the reporting requirements for that indicator. The ideal situation would be to produce a separate report for each of the "Periodic" items that thoroughly analyzes that item (whether space, tenure rates, non-tenure-track faculty, etc.). The tables included in that report are customized for your institution and might consist of frequency counts, means, medians, regression coefficients, residuals, or anything else that illuminates the process under study. Ultimately, we envision a set of reports emanating from each institution that thoroughly analyze these more difficult-to-standardize items. We recommend that these reports are written so that they may be available to the public (e.g., included on your website), although we recognize that this might not always be possible.

Demographic Context for Reports

Every institution should establish an understanding of the demographic structure of the faculty. This includes, at least, attention to gender, race/ethnicity, and immigration or visa status. We recognize that institutions vary in the way these variables may be recorded, so you should explain how these demographic factors are assessed in your institution. Please note that the particular issues for women scientists within racial-ethnic groups and/or by immigrant status may need separate attention on particular campuses, likewise, these other demographic characteristics may confound gender effects. We hope individual projects will assess these matters but recognize that standardized reporting might identify individuals, and do not recommend it. Each project will need to identify the best way to report on the demographic makeup of the faculty as a whole, as well as separately for relevant STEM, SBS and/or ADVANCE-targeted faculty.

Other Indicators of Progress

There are many other kinds of data that may be available to institutions for assessing progress toward ADVANCE: IT goals. For example, there may be data about faculty workload (teaching, service on committees, etc.), career advising (mentoring, coaching, etc.), faculty development and leadership development. To the extent that institutions make these issues a priority, they should develop techniques for collecting and monitoring data about progress. Additional reports by the ADVANCE: Institutional Transformation Indicators Working Group will provide more details about these other indicators of programmatic progress. As shown in Appendix 1, the original ADVANCE: IT indicators list indicated that additional information would need to be collected on the status of women in STEM such as climate, productivity and work/family friendly policies. The Working Group also developed a list of policies, practices and structures, included in Appendix 3, which will be a starting point for subsequent group meetings and reports.

Question 1. What is the distribution of science and engineering faculty by gender, rank and department?

Annual Reporting

Each site should report a Table 1, "Number of men and women tenured and tenure track faculty by department, rank and gender." Either headcounts or full-time equivalents (FTE) may be used in reporting (FTE is particularly useful if fractional appointments are an issue at your institution.) Note in the table footnotes whether headcounts or FTE were used. Table 1 should be reported annually and comparisons with baseline drawn. An partial example collection and reporting table from the University of Wisconsin is shown below.

Table 1. Number and Percent of Women Tenured and Tenure Track Faculty in Science/Engineering by Rank and Department

	Women			Men			Percent Women		
	Full	Associate	Assistant	Full	Associate	Assistant	Full	Associate	Assistant
Physical Sciences	**10.50**	**1.00**	**4.00**	**94.50**	**9.00**	**20.00**	**10.0%**	**10.0%**	**16.7%**
Astronomy	1.00	0.00	1.00	9.00	2.00	1.00	10.0%	0.0%	50.0%
Chemistry	1.50	0.00	2.00	33.00	0.00	6.00	4.3%	N/A	25.0%
Geology & Geophysics	4.00	0.00	1.00	10.50	1.00	4.00	27.6%	0.0%	20.0%
Atmospheric & Oceanic Sciences	0.00	0.00	0.00	6.00	4.00	3.00	0.0%	0.0%	0.0%
Physics	4.00	1.00	0.00	36.00	2.00	6.00	10.0%	33.3%	0.0%
Mathematics	**2.75**	**1.00**	**1.50**	**48.70**	**6.50**	**8.50**	**5.3%**	**13.3%**	**15.0%**
Mathematics	1.75	1.00	0.00	38.50	6.00	6.00	4.3%	14.3%	0.0%
Statistics	1.00	0.00	1.50	10.20	0.50	2.50	8.9%	0.0%	37.5%
Computer Science	**2.00**	**1.00**	**1.00**	**23.17**	**0.00**	**7.00**	**7.9%**	**100.0%**	**12.5%**
Computer Sciences	2.00	1.00	1.00	23.17	0.00	7.00	7.9%	100.0%	12.5%
Agricultural Sciences	**3.00**	**1.00**	**7.50**	**61.00**	**8.00**	**15.00**	**4.7%**	**11.1%**	**33.3%**
Soil Science	1.00	0.00	3.50	14.00	2.00	2.00	6.7%	0.0%	63.6%
Agronomy	0.00	0.00	1.00	13.00	2.00	2.00	0.0%	0.0%	33.3%
(etc.)									

Source: UW Madison IADS (Integrated Appointment Data System), March 2003

Note: Bolded are the data for the divisional (college) level, while each department within the division (college) is listed separately.

Periodic Reporting

During the initial year of your ADVANCE: IT program, a table showing the counts of non-tenure-track faculty/staff most likely to hold PhDs should be reported; these may include Instructional,

Research, Clinical, and Postdoctoral, by STEM and SBS. Use this table to assess the potentially different gender distribution in tracks. If the gender distribution by track varies, a follow-up analysis should be completed at least once, preferably at the end of the project. A sample table from New Mexico State University is provided in Table 2, below.

Table 2. Fall 2004 STEM and SBS Departmental Faculty Gender Composition

	Tenured and Tenure Track			Non-Tenure Track			Non-Tenure Track as % All Women
	All	Women	% Women	All	Women	% Women	
Agriculture and Home Economics	**59**	**18**	**30.5%**	**3**	**1**	**33.3%**	**5.3%**
Agronomy and Horticulture	15	4	26.7%	1	0	0.0%	**0.0%**
Animal and Range Science	18	2	11.1%	1	0	0.0%	**0.0%**
Entomology, Plant Pathology and Weed Science	11	3	27.3%	0	0	0.0%	**0.0%**
Family and Consumer Science	8	7	87.5%	1	1	100.0%	**12.5%**
Fishery and Wildlife Sciences	7	2	28.6%	0	0	0.0%	**0.0%**
Arts and Sciences	**106**	**20**	**18.9%**	**17**	**12**	**70.6%**	**37.5%**
Astronomy	8	1	12.5%	1	1	0.0%	**50.0%**
Biology	19	4	21.1%	1	1	100.0%	**20.0%**
Chemistry and Biochemistry	19	1	5.3%	3	1	33.3%	**50.0%**
Computer Sciences	11	2	18.2%	2	2	100.0%	**50.0%**
Geological Sciences	6	2	33.3%	0	0	0.0%	**0.0%**
Mathematical Sciences	29	10	34.5%	9	7	77.8%	**41.2%**
Physics	14	0	0.0%	1	0	0.0%	**0.0%**
Etc.							

Source: NMSU Office of Institutional Research and Planning, 2004.

Data from Tables 1 and 2 are most useful first to establish a baseline understanding of the composition of the science faculty. In subsequent years, they are useful for assessing changes in that composition. It is often important for institutional purposes to present the data in graphic formats that highlight women's relative representation across the STEM fields and in different ranks; effective display of data will be addressed in greater detail in a later report. Department level reports allow identification of departments with no women, token women, or no/low numbers of women full professors, as well as changes in positive or negative directions. An analysis of gender composition of different tracks may help identify where women scientists with PhDs are in your university. Is this a possible population to tap for conversion to the tenure track? Leadership development?

Question 2: What are the outcomes of institutional processes of recruitment and advancement for men and women?

For all of the following data, reporting to NSF will be done at the appropriate aggregate level such us college, division, or school. Departmental level data would be used in-house and not reported to NSF. Also, due to the low numbers for many of these indicators, the data are best examined over time. In providing evidence for these institutional processes of recruitment and advancement, data about the following needs to be collected:

1) tenure and promotional advancement,
2) amount of time at the associate professor level,
3) the number of faculty exiting from their tenure track position, and
4) the number of men and women recruited.

As with all other data reporting, these data should be reported for the tenured and tenure-track faculty in the STEM and SBS disciplines at your institution. However, if the scope of your ADVANCE project goes beyond these targeted fields, you may need to report these data for other disciplines within your institution. In addition, since you are likely to obtain these data from various offices on campus, you should note the source of data on your tables or otherwise provide this information in your annual report.

Annual Reporting

Tenure and Promotion

Collect tenure and promotion outcomes for the year prior to the ADVANCE: IT award and annually for all years of the ADVANCE: IT award by unit and gender. These data should include the number of faculty who have applied or been evaluated for tenure and/or promotion and the number awarded. The columns of data you report in Table 3 should be an exhaustive list of the possible promotion and tenure review outcomes. Some variables that you might need to take into consideration when collecting these data would be: early application, tenure clock extension, part-time faculty, family leave, etc. Annual data by themselves are unlikely to be very compelling depending on how many promotion and tenure reviews occur each year within the relevant units. Therefore, we recommend that you accumulate these data over time during your ADVANCE: IT award, adding to the table as indicated. If you are able to obtain these data for several years prior to your ADVANCE award, you may be able to more readily document programmatic impact.

Table 3: Tenure Review Outcomes by Gender – STEM Fields*						
Pre-ADVANCE Year: _____	# Reviews		# Approvals		# Denials	
	Women	Men	Women	Men	Women	Men
Unit 1						
Unit 2						
Unit 3						
Etc.						
ADVANCE Year 1	# Reviews		# Approvals		# Denials	
	Women	Men	Women	Men	Women	Men
Unit 1						
Unit 2						
Unit 3						
Etc.						

Source:

** Note: Use this same template to create a similar table to report tenure review outcomes by gender for the SBS fields.*

The unit you decide to report in Table 3 depends upon the location of the key promotion and tenure decisions in your institution and the level at which data may be collected. For example, at one institution departments may be held accountable for the promotion and tenure decisions that are made within the department and be required to complete formal records by the administration. In this case, the department would be the appropriate unit. At another university it may be the case that departmental promotion and tenure committees do not have such formal record keeping procedures which are instead completed at the college level. In this latter case, the appropriate unit would be the college. Within each college, then, you would report separately for the STEM versus SBS fields.

If promotion from assistant to associate is different from Table 3 (i.e., the case where an assistant professor can be denied promotion even though they receive tenure), then collect the number of faculty who applied for promotion from assistant to associate and report in Table 4a. If this is not the case at your institution, then report only the number promoted from associate to full by gender and department as shown in Table 4b. Again, as with Table 3, you should accumulate data each year over the course of your ADVANCE: IT award and report it separately each year, aggregating to appropriate levels. In this way you will be able to have interesting trend data by the end of your award. If you are able to obtain these data for several years prior to your ADVANCE award, such data may be useful in documenting programmatic impact at an earlier (i.e., than your fifth year) point in time.

Table 4a. Promotion Review Outcomes by Gender: Assistant to Associate Professor – STEM Fields*						
Pre-ADVANCE Year: _____	# Reviews		# Approvals		# Denials	
	Women	Men	Women	Men	Women	Men
Unit 1						
Unit 2						
Etc.						
ADVANCE Year 1						
Unit 1						
Unit 2						
Etc.						

Table 4b. Promotion Review Outcomes by Gender: Associate to Full Professor – STEM Fields*						
Pre-ADVANCE Year: _____	# Reviews		# Approvals		# Denials	
	Women	Men	Women	Men	Women	Men
Unit 1						
Unit 2						
Etc.						
ADVANCE Year 1						
Unit 1						
Unit 2						
Etc.						

Source:

** Note: As with Table 3, you should present data for the STEM and SBS fields separately for the relevant units.*

Years in Rank

It is important to understand the transition from associate to full professor. Once a faculty member has received promotion and tenure, there are often no requirements that (s)he apply for promotion to full professor. Institutional practices on post-tenure review vary widely. To complete Tables 5a and 5b, collect the number of tenured associate professors by department and gender in the following year categories: 0-2 years, 3-5 years, 6-8 years, 9-11 years, 12-14 years, and "15 or more years." For the category of "15 or more years," also report the range, mean, standard deviation, and median. When you collect these data, separate it by rank at the time of hire so that you would have two tables: Table 5a for those hired as assistant professors

and Table 5b those hired as associate professors (since in this case you may have no information about years in this rank at prior institutions).

Table 5a: Years in Rank at the Associate Professor Level for STEM and SBS Faculty Hired as Assistant Professors

	STEM				SBS			
Years in Rank	Women		Men		Women		Men	
	Number	% of Women	Number	% of Men	Number	% of Women	Number	% of Men
0-2								
3-5								
6-8								
9-11								
12-14								
15 or more								

Source:

Table 5b: Years in Rank at the Associate Professor Level for STEM and SBS Faculty Hired as Associate Professors

	STEM				SBS			
Years in Rank	Women		Men		Women		Men	
	Number	% of Women	Number	% of Men	Number	% of Women	Number	% of Men
0-2								
3-5								
6-8								
9-11								
12-14								
15 or more								

Source:

Attrition

Collect the number of faculty who leave their departmental tenure or tenure-track position at your institution by rank, gender, and department. Either separate out or exclude those who died or retired. It would be helpful to collect 3-5 years prior to receiving ADVANCE: IT funding and in subsequent years provide aggregate data over time.

Table 6. Voluntary, Non-Retirement Attrition, by Rank and Gender, year						
	Assistant		Associate		Full Professor	
Department	Women	Men	Women	Men	Women	Men
Department 1						
Department 2						
Department 3						
Etc.						

Source:

Recruitment

To measure recruitment, you will need to collect the number of new faculty hired by rank, department and gender for several years (e.g., three to five years) prior to ADVANCE: IT and for each year during ADVANCE. It would be useful (but not required to report to NSF) to examine the number of applicants and interviewees by gender and department each year and compare these to the availability data provided by NSF.

Table 7. New-Hires in STEM and SBS, year

	Assistant			Associate			Full		
	Men	Women	% W	Men	Women	% W	Men	Women	% W
Department 1									
Department 2									
Etc.									

Source:

Periodic Reporting

Cohort analysis of promotion and tenure processes

In order to understand the differential rates of tenure and promotion by gender, an analysis that takes into account both attrition and tenure/promotion outcomes *simultaneously* is essential. There are several ways one might go about doing this (cohort analysis and/or event history analysis), and examples from particular institutions are provided in Appendix 4. This analysis should be done *at least once* during your ADVANCE: IT grant.

At a minimum, you will need to collect the following individual-level data for a group of faculty (which faculty to include depends on what kind of analysis you are doing and which transition, tenure or promotion to full professor, you are analyzing):

- Date of hire
- Rank of hire
- Date of tenure (if applicable)
- Date of departure (if applicable)
- Date of promotion (associate to full, if applicable)
- Department
- Gender

Some possible covariates that might be important for your analysis include:

- Part-time appointment
- Tenure clock extension
- Date of PhD
- Productivity (grants, publications, etc.)

In your periodic report(s) of tenure and promotion outcomes, you should use these data to understand how attrition and achievement of tenure/promotion combine to produce differences or similarities of tenure and promotion processes at your institution. See the examples of studies done by other ADVANCE: IT institutions in Appendix 4.

Question 3: What is the gender distribution of science and engineering faculty in leadership positions in the institution?

Table 8 offers one template for reporting leadership positions held by men and women at your institution. The specific units, leadership positions, titles, and organizational structure of your institution will dictate how you determine the rows and columns for this table.

The number of tenured full professors (headcounts) is important to include for comparison purposes, as usually this is the "pool" from which many administrative positions are filled and committee appointments (or elections) are made.

In addition to administrative positions, appointment(s)/election(s) to powerful committees also confer status and the ability to shape policy. Identify the powerful committees at your institution and include them in Table 8. All institutions should, at minimum, report on membership of Promotion and Tenure committees. For these, report at the level(s) that is/are appropriate for your institution. For example, the gender composition of *departmental* promotion and tenure committees might be an issue at one university, while at another the College or Divisional level committees' composition may be more salient.

Finally, it may be useful to footnote the following: the maximum number of times any one woman appears on the table (a few powerful women can make the table look adequately populated by women); when the people populating this table are non-tenure-track; and committees upon which only the tenured or full professors can sit.

Table 8. Faculty Leadership Positions

	All Faculty	Number of Women Faculty		
		All	STEM	SBS
Tenured Full Professors				
Full Professors				
STEM Department Heads				**na**
SBS Department Heads			**na**	
Deans				
Associate Deans				
Center Directors				
President, Vice-Presidents, Provost, Vice-Provosts				
Endowed/Named Chairs				
Promotion & Tenure Committees				
Powerful Committee1				
Powerful Committee2				
Powerful Committee3				

Source:

Question 4: What is the allocation of resources for science and engineering faculty by gender at the institution?

Resources are essential to new professors as they start their careers and also to senior faculty to maintain productive research and teaching agendas. Ensuring that faculty are provided the resources that will help them succeed is extremely important, as Virginia Valian[3] illustrates in her discussion of the accumulation of advantage (whereby relatively small gender gaps at early points in academic careers widen over time). We focus data analysis on three important resources for faculty: salary, space, and start-up packages.

Salary is an indicator of professional success and is allocated in ways that might be biased by gender. In addition, salary is especially subject to "accumulation of advantage" processes, because increases in salary are usually based on a percentage of the base. Space is a precious commodity at universities because it is relatively fixed, and yet is essential for research and teaching. Not only may a scientist's research productivity be directly related to the quantity and quality of her space, but women who receive less space then their male counterparts receive the message that their research is marginal and less important than that of their male counterparts. Finally, start-up relies heavily upon individuals' negotiation skills, which puts women at a disadvantage relative to men[4]. Inequities in start up packages given at time of hire can lead to inequities in later stages of the career, including tenure and promotion, salary, and more.

Unfortunately, it is exceedingly difficult to study gender differences in these three resources on a campus—particularly space—but all three are essential to understand. In addition to the problems inherent in obtaining data on the primary variables of interest, analyses of gender differences in these resources necessarily must include important control variables. For these reasons, we are not recommending a standard, annual reporting of gender differences in salary, space and startup. Rather, we are recommending periodic reports that analyze each of these resources. In the following text, we:

(1) lay out a schedule for producing these reports;
(2) discuss some of the primary data you will need to collect and analyze;
(3) recommend some methods you might use when performing your analysis;

[3] Valian, Virginia V.1997. *Why so Slow?: The Advancement of Women* (Cambridge: MIT Press).
[4] Babcock, Linda and Sara Laschever. 2003. *Women Don't Ask: Negotiation and the Gender Divide* (Princeton: Princeton University Press).

(4) recommend some important control variables you should consider in your analyses; and
(5) enumerate some issues you may wish to consider as you perform the study.

As you can see, you will not report a single indicator, but rather combine analyses of a number of different items, perhaps using a number of analytic methods. Consulting other ADVANCE: IT program personnel can be very useful in performing these analyses as well as making use of the references about resource studies compiled by other ADVANCE: IT institutions (available at the ADVANCE portal[5]).

Periodic Reporting

Rather than reporting specific data on an annual basis, you will instead submit research reports documenting in-depth studies of the three resources of interest: salary, space, and start-up. In this section we will provide some guidance on completing these studies and some issues that you may need to consider as you conduct them. The data gathering and analysis associated with these studies is intense; therefore, you need to insure you have adequate research personnel to complete these reports. The following chart recommends when to submit your periodic reports to NSF, taking into account the amount of time it will take to gather these data and conduct careful analysis.

	Year 1	Year 2	Year 3	Year 4	Year 5	
Salary	X		X		X	
Space		X			X	(if necessary)
Start-Up		X			X	(cumulative)

Salary Data

In year 1 report on data from at least the year prior to ADVANCE, while in years 3 and 5 report on the most recent data available. You must do a regression analysis of salary by gender (plus other controls as described below), and must include the full gender equity in pay study—which needs to be based on regression analysis—with your annual report for the appropriate year.

The most common source of information about conducting pay equity studies is AAUP's "Paychecks."[6] In some cases the staff in your institutional research office may not have a

[5] The ADVANCE portal website is: http://research.cs.vt.edu/advance/tiki/tiki-index.php.

[6] Haignere, Lois. 2002. *Paychecks: A Guide to Conducting Salary-Equity Studies for Higher Education Faculty.* 2nd ed. Washington D.C.: American Association of University Professors. Order online at http://www.aaup.org/.

background in running the regression models that are needed to conduct this analysis. Therefore, you may need to identify a faculty member or other professional on campus who has expertise in this area. Such expertise can often be found in people trained in quantitative social sciences or other fields that use multivariate statistics.

Analysis Possibilities

Regression analysis of gender on salaries is the most common approach in studying equity in pay. The analysis requires a number of controls, which could include the following variables:

- Rank
- Experience
- Years at institution
- Age
- Ethnicity
- Discipline
- Administrative appointment
- Past administrative appointments

Regressing salaries on gender, while controlling for the above variables, allows you to determine the net effect of gender. The coefficient associated with gender can provide you with a measure of the magnitude of any statistically significant gender difference in pay. It is important to recognize, and to explain to faculty and administrators, that this kind of analysis takes into account the differential representation of men and women in higher and lower ranks, and in higher and lower-paid fields. It can therefore be viewed as "overcorrecting" or underestimating gender bias in salaries. In any case, it is a very conservative measure.

It is also important to note, and to remind administrators and faculty that no analysis of aggregate data can either demonstrate or preclude *individual* inequities. These must be evaluated separately on their own terms.

Considerations:

1. Conversion of salaries to a common basis (e.g., convert 12-month to 9-month salaries).
2. Dependent variable: a large institution may have enough variability to permit use of unlogged salary, while at small institutions it may be necessary to use ln(salary) as the dependent variable (consult "Paychecks" for a discussion of this issue).
3. Administrative appointments often carry salary add-ons, which you may wish to exclude or account for in your analysis with another variable.

4. It is essential to have the same raw data usually accessed by the institutional research office to conduct these analyses. Depending on your relationship with the institutional research office, you may need to make a formal request for these data from the Provost's Office, which may take additional time.
5. Additional data you may wish to include in any study of gender salary equity at your institution: satisfaction with salary, satisfaction with merit increase process, satisfaction with benefits, participation on salary and benefit committees, etc.

Space Allocation

A thorough analysis of space must be conducted within the first two years of the ADVANCE grant. The full space allocation report should be included in the appropriate annual report (i.e., year 1 or 2). The study of space should include:

- Quantitative measures of space allocation
- Appropriate qualitative information regarding space
- Explanation of any discrepancies in space allocation between men and women
- A plan for rectifying the discrepancies in space allocation.

If there are serious gender equity issues identified by this study, then the school's ADVANCE: IT program will need to follow up the study with another one to be reported in the last year of the grant. Due to the labor-intensive nature of space allocation studies we recommend that you begin the data collection for the follow-up study during year 4 of the grant.

The most basic data you will need about the space controlled by faculty members includes:

- Square footage
- Type of space (research, office, etc.)
- Occupant's name
- Occupant's rank
- Occupant's gender
- Occupant's funding.

Additionally you might want to record other information about these spaces such as:

- Proximity to electrical power
- Years since last renovation
- Services (e.g., wireless, internet, windows, etc.)

Your analysis might also benefit from collecting data about the space controlled by departments (and possibly colleges) such as:

- Number of different types of space:
  - Library
  - Seminar rooms
  - Classrooms
  - Departmental offices
  - Conference rooms
  - Research labs
  - Kitchen, break area, lounge
- Square footage of spaces (see above)
- Gender composition of tenured and tenure track faculty (% female).

What is the purpose of collecting information about space controlled by departments?

The repository of these quantitative data varies among institutions. You will need to identify where to locate these data. At some institutions, the data about space are available as part of the institution's central data system; at others, an Office of Space Management can help; and still others have a more decentralized system. Very often, after collection of initial official records, a process of verification must take place. Department administrators and department heads can help determine the exact allocation of faculty space as well as the space allocation process and quality issues with the space. Some programs verify space with all faculty members, and some (if the number of faculty members is very large) individually contact only *female* STEM faculty members and verify their space records. These faculty contacts might also provide an opportunity to discover qualitative issues regarding space. Finally, feel free to use the networks within ADVANCE to contact other sites that have done a space study, and get their advice.

In addition to the quantitative data, you should also be prepared to collect additional information about space usage such as:

- Satisfaction with quality of space (e.g., location, amenities and condition)
- Satisfaction with the amount of space
- Understanding of the processes of space allocation
- Satisfaction with the processes of space allocation
- Participation in the processes of space allocation
- How administrative changes (e.g., a new department head or dean) impacts space allocation.

You may find it useful to collect data about space usage from administrators such as deans and department heads who can offer a unique perspective about space, as well as from faculty members. It might be appropriate at your institution to interview all of the women about space, as you can not only verify the accuracy of the records, but more closely examine issues of space quality and perceived fairness of the allocation process. These qualitative data can be collected as part of a larger survey or in brief face-to-face or phone interviews. Again, you will need research staff with the expertise to collect and analyze these qualitative data.

Analysis Possibilities

1. Regression analysis to predict square footage using gender, rank, and funding as independent variables.
2. Cross-sectional analysis of mean square footage by rank and gender.
3. Matching: compare square footage per dollar of funding assigned to women and men with the same kinds of research programs.

4. Simulation analysis to generate an “ideal” allocation of space based on funding and discipline and then compare this “ideal” to the actual space.
5. Department level comparison of square footage and types of spaces controlled (e.g., classrooms) with a comparison of departments with large percentages of women to those with small percentages of women.

Start-up Packages

A thorough analysis of faculty start-up packages needs to be reported in years 2 and 5. The year 2 report will include information from at least one year prior to ADVANCE and the first year of ADVANCE (reported separately). Depending upon the number of faculty hired each year at your institution and the complexity of start-up packages, it would be best if you could obtain start-up package data for several years (e.g., 3-5 years) prior to your ADVANCE award. The year 5 report will accumulate information about start-up over the course of the grant, which you may want to separate out by academic year. It would be preferable, if possible, to collect these data annually so that by year 5 you may have accumulated a body of data that permits a careful analysis similar to that which you had done for space allocation.

Start-up package data may be difficult to obtain. One strategy is to collect offer letters from departments or colleges (in this case, it would be useful to have declined offers in addition to accepted offers). Deans will often provide these letters as long as names and social security numbers are blacked out (but be sure they note whether a man or woman received the letter!) Another strategy would be to access relevant databases on campus such as those that colleges or the Provost’s Office may maintain about offers. Financial databases may also provide relevant information about start-up.

In addition to gender, department and rank, the data you will need to collect and report about start-up packages received by faculty could include:

- Tenure status
- Years of credit towards tenure
- Protected time
- Base salary
- Funding source
- Total other salary
    - Benefits
    - Moving expenses
    - Summer salary
- Total start-up
    - Graduate assistants

    - Technical support
    - Travel
    - Supplies
    - Equipment
    - Minor renovations
    - Course release
- Total package (Base salary + total other salary + total start-up)

Include those items that are appropriate within the context of your institution. If there are specific kinds of costs that depend on extrinsic factors (e.g., the cost of major renovations in an older building), then you may decide to exclude these costs in your total value of start-up packages. The source of funds could also be important at your institution. For example, the proportion of total faculty start-up that comes from the department, the college, the Graduate School, and the ADVANCE: IT program might differ by gender (with the department providing less for women faculty, for example).

Include in at least one of these two years (i.e., year 2 or year 5) some analysis of the level of faculty satisfaction with their start-up packages including the speed with which the promised resources were made available by gender, department, and rank. For example, this could be part of the results from a larger climate study or derived from interview data.

Analysis Possibilities

Because relatively small numbers of new faculty enter each year within a particular department, it will be necessary to accumulate several years' data on start-up packages before any meaningful analysis can be completed. Once these data are accumulated, you can use many of the same strategies discussed above in the space allocation section to compare start-up packages for men and women. For confidentiality reasons, you will likely need to modify reporting for any other contexts besides NSF.

Summary

This toolkit has provided guidance on collecting data and completing reports to document program progress towards ADVANCE: Institutional Transformation goals. Once you have completed the tables that will be used annually to report to the NSF and the periodic studies of processes and resource allocation, you will find it useful to return to the original four questions that motivated these data collection efforts. Draw conclusions about the status of women and men science and engineering faculty by using these data to answer these questions:

1) What is the distribution of science and engineering faculty by gender, rank and department?
2) What are the outcomes of institutional processes of recruitment and advancement for men and women?
3) What is the gender distribution of science and engineering faculty in leadership positions in the institution?
4) What is the allocation of resources for science and engineering faculty by gender at the institution?

It should be noted, however, that the data discussed in this toolkit are likely to be limited in their sensitivity to the changes that are expected as a result of the ADVANCE: Institutional Transformation program. There are a number of other areas that you will need to examine in order to document programmatic impact. These institutional changes will be the focus of a second toolkit, to be prepared in February, 2005. You might consider how ADVANCE has effected changes in your institution in the areas of policies, practices and structures (see a preliminary list in Appendix 3).

This document lists only the data reports needed for your ADVANCE: IT annual reports. Other important reporting conventions, such as your one-page program overview, are not touched upon here but will be discussed in detail in additional reports to be provided by this working group. Appendix 5 shows samples of these one-page overviews from the University of Michigan and New Mexico State University. A compilation of these guides will be extremely useful to our program officer, Alice Hogan, in keeping NSF personnel abreast of the status and progress of the ADVANCE: IT awardees. Upcoming reports from the ADVANCE: IT Working Group will include “Suggestions for Illustrating the Goals and Accomplishments of ADVANCE: IT” and “Suggestions and Advice on Completing a Campus “Climate” Survey.”

Final Project Reports

An analysis of trends in the indicators over the period of the ADVANCE grant should be presented along with appropriate comparative data for the period of 4-5 years prior to the ADVANCE award. The final project report should be able to provide answers to the four key questions, with an emphasis on the ways that ADVANCE programming affected these trends.

A study of how important resources—start-up packages, salary, and space—are allocated needs to be conducted in the final year of your program. These results should be compared to those for the analyses of these same resources that had been completed in the earlier years of your ADVANCE award. If there were discrepancies or other issues identified in the earlier reports, your final report must address how these issues were resolved.

Appendix 1. Evolution of the Reporting Requirements

How did these reporting requirements evolve? In April 2002, the nine first-round ADVANCE: IT awardees met at their first PI meeting. The last session of the meeting consisted of a brainstorming session and discussion about what data we thought would be essential to collect to document women's relative status. The 1999 MIT Report formed the basis for much of the discussion. There were a number of issues that were important during the discussion. First, the ADVANCE: IT awards had been set up as cooperative agreements, which meant that awardees would have a certain amount of leverage to gain access to data that is sometimes not readily available. So, during the discussion, there was a strong sense that this was an opportunity to have more comprehensive data than what we may have been able to previously access given that our institutions had formally agreed to do so.

Second, there was much debate concerning the "ease" of collecting each of the indicators. After the list of indicators had been generated representatives from each school indicated the ease with which they thought they could comply with the reporting requirement:

(1) "can do easily"
(2) "not easy, but would like to do"
(3) "just can't do, i.e., no way"

After discussing these issues, the group agreed on 12 indicators of institutional transformation, which are shown later in this appendix.

In addition to the 12 initial indicators, 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. At the time, none of the institutions had collected all of the data or set up reporting for the indicators, so the first-round awardees informally collaborated with each other on how to set up tables for reporting.

Finally, the first round awardees were keenly aware of the opportunity to collect a number of indicators across institutions to serve both an evaluative purpose for the ADVANCE: IT program and a research purpose of understanding the impact of different approaches to institutional change upon women's status in STEM. The PIs were interested in developing a dataset that could be used to accomplish these goals, while serving as a model for other institutions that wanted to study the status of women.

For the 2003 PI meeting, Frehill attempted to compile a common dataset based upon the reports of all ADVANCE: IT institutions[7]. She found that it was impossible to make the kinds of comparisons that were originally of interest to ADVANCE: IT awardees. At the 2004 ADVANCE conference she presented a new set of indicators. This presentation led to the formation of the ADVANCE: IT Indicators Working Group, which convened in January 2005, under Lisa Frehill's leadership, to evaluate the previous recommendations and make new ones.

Comparison: Original and New Indicators

Many of the proposed indicators are not different from those in the original list (see Appendix 1 for the original list). In the case of indicators 1, 2, 6, 7, 8 and 9, this toolkit simply provides more specific guidance about how to collect and report data related to these indicators, especially in terms of the level of aggregation. Likewise, indicators 10, 11, and 12 remain fundamentally the same, except instead of providing annual reports of data that are likely to be of limited utility, this toolkit recommends that ADVANCE: IT institutions undertake more focused studies of these important resources (i.e., salary, start-up and space) less frequently so that the study takes into account the significant issues within each institution.

The most radical changes were suggested for indicators 3, 4, 5a and 5b. In the case of these indicators, after three years of collecting and analyzing data, the consensus among the members of the ADVANCE: IT Working Group was that institutions needed more guidance on how to obtain these data and how to report these in a way that would be useful both within our institutions as well as for cross-institutional comparison. We added the highlighted indicator, a measure of recruitment success, as a direct measure that an institution is progressing towards the stated goals of the ADVANCE: IT program. We also omitted indicators that appeared to offer little value such as 5a (time at institution) and modified reporting on #4 (years in rank) to indicate that this be reported only for associate professors. The Working Group felt that these modifications would provide data that would be more useful.

[7] Frehill examined reports or data from: UC-Irvine, University of Colorado, Georgia Tech, University of Michigan, NMSU, University of Washington and University of Wisconsin.

Original NSF Indicators

Outcome	1	2	3
1. # and % of women faculty in science/engineering by department	9		
2. # and % of women I tenure-line positions by rank and department	9		
3. Tenure promotion outcomes by gender	4	5	
4. Years in rank by gender	8	1	
5.a.Time at institution and b.attrition by gender	9, 5	0,3	0,1
6. # of women in S & E who are in non-tenure-track positions (teaching and research)	5	3	1
7. # and % of women scientists and engineers in administrative positions	8	1	
8. # of women S & E faculty in endowed/named chairs	5	4	
9. # and % of women S & E faculty on promotion and tenure committees	7	2	
10. Salary of S & E faculty by gender (controlling for department, rank, years in rank)	6	3	
11. Space allocation of S & E faculty by gender (with additional controls such as dept., etc.)	4	2	3
12. Start-up packages of newly hired S & E faculty by gender (with additional controls such as field/department, rank, etc.)	3	4	2

Baseline – 2000 and 2001

Rate: (1) Can do easily

(2) Not easy but would like to do

(3) Just can't do – i.e., no way

Non-institutional Indicators

Climate

Productivity

Family/work-friendly policies

Appendix 2. Aggregation of Fields of Science Using NSF Categories

Many National Science Foundation reports concerning science and engineering aggregate to the level that is bolded, below. For purposes of comparison to national-level data, then, it is useful to aggregate department-level data to these same categories in your reporting.

Engineering

- Aeronautical/Astronautical Engineering
- Chemical Engineering
- Civil Engineering
- Electrical Engineering
- Industrial Engineering
- Mechanical Engineering
- Materials/Metallurgical Engineering
- Other Engineering

Physical Sciences

- Astronomy
- Chemistry
- Physics
- Other Physical Sciences

Earth, Atmospheric, and Ocean Sciences

- Atmospheric Sciences
- Earth Sciences
- Oceanography
- Other Environmental Sciences

Mathematical and Computer Sciences

- Mathematics
- Computer Science

Biological/Agricultural Sciences

- Agricultural Sciences
- Biological Sciences

Psychology

Social Sciences

- Economics
- Political Science
- Sociology
- Other Social Sciences (Anthropology, area studies, criminology, geography, statistics, urban affairs/studies, social sciences, general, social sciences, other, history and philosophy of science and technology, linguistics, American studies, archeology)

Non-S&E

- Health and Medical Sciences
- Humanities
- Education

Professional/Other

- Business Management and Administrative Services
- Data Processing
- Information Fields (e.g., communications)
- Other Professional Fields (including: architecture environmental design, home economics, law, library science, parks/recreation/leisure/fitness, social service professions, theology and religious education)

Appendix 3. Policies, Practices, and Structures: Other Possible Institutional Impacts of the ADVANCE: IT Program

You might consider how ADVANCE has impacted changes in your institution in the areas of policies, practices and structures as follows:

Policies:

- Family friendly policies (paid leave for children/eldercare, etc)
- Dual career policies
- Tenure clock extension
- Part time tenure track
- Transitional support
- Committee composition
- Professional development (e.g., faculty advising)
- Collecting and monitoring gender equity data

Practices:

- The way people talk about issues—gender and ethnic equity (training about bias and discrimination) are incorporated into existing programs and new programs are initiated such as:
  - Department head training
  - Administrators' training
  - Search committee training
- Continual climate survey
- Continual salary equity studies
- Professional development—tailored for different groups and targeted at under represented groups
- Collecting and monitoring gender equity data
- Increased recognition of women's scientific accomplishments and development of diverse human resources in science and engineering
- Increased visibility of women's scientific accomplishments and development of diverse human resources in science and engineering.
- Leadership training
- Dual career program that actually works
- On campus childcare
- Regular exit interviews of faculty who leave

Structures:

- Monitoring structures like equity advisors, STRIDE, commission on the status of women
- Committee composition
- Administrative structure to support and monitor practices (including professional development)
- Creation of collaborative networks
- Collecting and monitoring gender equity data
- New positions
- Increased recognition of women's scientific accomplishments and development of diverse human resources in science and engineering (e.g., database of awards in science and engineering for which women need to be nominated and providing info

about these opportunities to nominators & response to instances in which women have not been among nominees)
Dual career program office with a budget
Increased visibility of women's scientific accomplishments and development of diverse human resources in science and engineering.
Leadership training
On campus childcare

Appendix 4: Examples of tenure and promotion analyses from longitudinal data

Example 1. Cohort analysis from New Mexico State University (NMSU).

You will need to collect cohort level data, using cohorts defined appropriately for your institution to conduct a more in-depth analysis of the processes of promotion and tenure at your institution. One such process has been used at NMSU, and will be discussed here as an example. At NMSU, the cohorts were defined by the year in which the faculty member was first an assistant professor or was first an associate professor. It should be noted, however, that the process outlined here is time and labor-intensive process so you will need to decide which of the transitions are essential to study to understand the differences in men's and women's advancement within your institution.

For this analysis, you need to have access to names and information about when faculty arrived and experienced various transitions so that you can construct a spreadsheet to track individuals over time. At NMSU, the institutional research office provided us with specific kinds of analysis that was requested with a list of the names of each person, plus information on the individual's time in rank, current rank, and tenure status for each year. We used these rosters to perform the cohort analysis. In this section we will step you through the analysis that we performed at NMSU.

The basic issue here is that your IR or human resources datasets about faculty are usually annual data sets and you need longitudinal data that combines information from each of these annual data sets. Someone who is good at programming will be able to perform this task differently than the manual strategy that we used at NMSU[8].

Step 1: Use rosters of faculty, to create a spreadsheet.

1995 Assistant Professor Cohort, STEM											
Dept.	College	Name[9]	Sex	96	97	98	99	00	01	02	03
EE	Eng	Bill Smith	M	S	S	S	S	P	S	S	S
CHEM	A&S	Paula Garcia	F	S	L						

In each column for each year, indicate the person's status.

S=same
P=promoted
T=tenured
P/T=promoted and tenured

[8] We have created SPSS data files to more accurately analyze data. We would be willing to discuss details of this procedure with you by phone or e-mail.
[9] These are not real people.

L=left
LD=left, denied p/t

Step 2: Analyze the data by cohort.
1995 # in cohort: 3 M, 2 F
left pre-tenure: 1 M, 1 F
% left pre-tenure: 33.3% M, 50.0% F

Step 3: Decide which cohorts to use in reporting.

This analysis should be conducted separately for the promotion from assistant to associate professor and the promotion from associate to full professor.

Example 2. Event history analysis of promotion to full professor from UW-Madison.

I'll provide this example later—I have a student who is working on it right now!

NEW MEXICO STATE UNIVERSITY
ADVANCE
Institutional Transformation

Funding Agency: National Science Foundation

Program Officer: Alice Hogan (ahogan@nsf.gov)

Funding Level for NMSU: $750,000/year for 2002-2006

The goal of the ADVANCE: Institutional Transformation program 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.

Objectives

(1) To increase women's recruitment, retention, and advancement at NMSU.
(2) To improve the climate for faculty at NMSU, especially work/life balance.
(3) To bring about policy changes based on the needs of the 21st century labor force.

Program Overview at New Mexico State University

19 Target departments in Science, Technology, Engineering, and Mathematics (STEM) in 3 colleges: Agriculture and Home Economics, Arts and Sciences, and Engineering

Institutional Transformation: some programs are available to faculty in non-STEM fields, including the Colleges of Business and Economics, Education, and Health and Social Services and the Library.

Recruitment

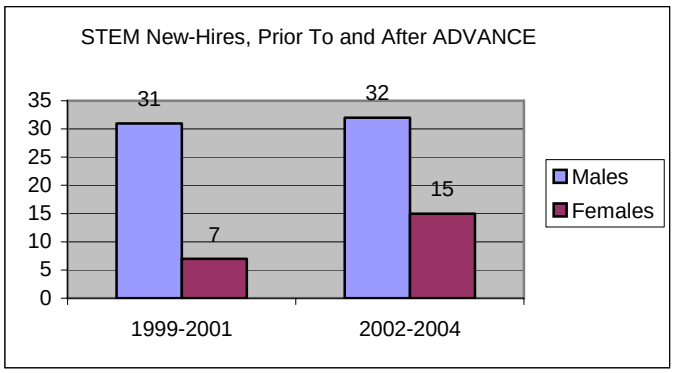
- Start-up package enhancement
- Workshops & work with departments
- Dual careers initiative—including work with UTEP on a "consortium" approach

Retention & Advancement

- Mentoring Program
- Research and Travel Awards
- Distinguished Visiting Professors Program
- Faculty Development and Department Head Training
- ADVANCING Leaders Leadership Development Program

Results

- 26 women in STEM have received $376,527 in research and travel awards
- 15 women in STEM have received $614,431 in start-up enhancement awards
- 80 Participants in mentoring program
- Faculty development, department head training and ADVANCING Leaders include faculty from the entire university
- Two STEM women moved from faculty positions to deans' positions at other institutions.



In the three years prior to ADVANCE, women accounted for only 18% of new faculty.

Women accounted for 32% of new STEM faculty hired since the start of ADVANCE.

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National-Level Program Overview

Funding mechanism within NSF: "tax" paid from each of the directorates.

Nine institutions of 76 applicants awarded grants in "first round" (2001):

- Hunter College, City University of New York
- Georgia Institute of Technology
- New Mexico State University
- University of California, Irvine
- University of Colorado, Boulder
- University of Michigan
- University of Puerto Rico, Humacao
- University of Washington
- University of Wisconsin, Madison

Ten institutions of 72 applicants awarded grants in "second round" (2003):

- Case Western Reserve University
- Columbia University
- University of Alabama, Birmingham
- Kansas State University
- University of Maryland, Baltimore County
- University of Montana
- University of Rhode Island
- University of Texas at El Paso
- Utah State University
- Virginia Polytechnic Institute

ADVANCE institutions will serve as exemplars for other colleges and universities to increase gender equity in science and engineering faculty.