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TITLE OF PROPOSED PROJECT RU-FAIR- Rutgers University for Faculty Advancement and Institutional Re-imagination						
REQUESTED AMOUNT	PROPOSED DURATION (1-60 MONTHS)	REQUESTED STARTING DATE	SHOW RELATED PRELIMINARY PROPOSAL NO. IF APPLICABLE			
\$ 3,702,117	60 months	08/08/08				
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PI/PD DEPARTMENT Plant Pathology			PI/PD POSTAL ADDRESS Foran Hall 59 Dudley Road New Brunswick, NJ 08901 United States			
PI/PD FAX NUMBER 732-932-9377						
NAMES (TYPED)	High Degree	Yr of Degree	Telephone Number	Electronic Mail Address		
PI/PD NAME Joan W Bennett	PhD	1967	732-932-9375	bennett@aesop.rutgers.edu		
CO-PI/PD Catherine N Duckett	PhD	1993	787-565-6044	cduckett@rci.rutgers.edu		
CO-PI/PD Patricia A Roos	Ph.D.	1981	732-445-5848	roos@rci.rutgers.edu		
CO-PI/PD Lynn Schneemeyer	PhD	1978	973-353-5541	lschneem@rutgers.edu		
CO-PI/PD						

N. B. Dr. Nancy Rosoff of Camden was substituted for Dr. Schneemeyer as Co-PI in August 2008. Final award amount is: 3,677,332.

Project Summary

Rutgers University for Faculty Advancement and Institutional Re-imagination (RU FAIR)

Rutgers University, The State University of New Jersey, will promote the participation and advancement of women in science, engineering, and mathematics (SEM) on all three campuses of Rutgers University (Camden, Newark and New Brunswick) through five interrelated initiatives. Specifically, we will:

- **Recruitment and retention initiatives:** Develop a targeted strategy for increasing the number of women in general, and minority women in particular, on the SEM faculty of Rutgers University, including skills training for search committees (RU-InSTRIDE), leadership training for established faculty, and a coordinated mentorship program.
- **Communication Initiatives:** Enhance communication among faculty within a geographically and structurally complex multi-campus university. We will build on existing initiatives to enhance our web presence and establish RU FAIR professorships within different schools and campuses. We will sponsor social events, such as lunches and picnics, to give SEM faculty from different campuses more opportunities to network. RU-FAIR professors will be selected by competitive application. We have designed the RU-FAIR professorships to stimulate creativity among female Rutgers professors to propose solutions to problems for women in SEM at the grassroots (department and school) level. RU- FAIR professors will also work on the Recruitment and Retention, Networking and Liaisons, and Visibility Initiatives depending on their proposed activities.
- **Networking and Liaisons with Women's Programs Initiatives:** Develop RU-FAIR mini-grants for faculty development and to encourage interdisciplinary research across schools and campuses and to work closely with the nationally acclaimed Rutgers Institute for Women's Leadership (IWL) to deliver leadership training, to encourage research, and to develop interdisciplinary courses.
- **Visibility Initiatives:** Achieve greater visibility for our women faculty by creating a bigger web presence, instituting a lecture series, nominating our faculty members and postdoctoral associates for prestigious awards, and working with the Rutgers Media Relations to generate increased press coverage for their research accomplishments.
- **Family Initiatives:** Bolster the resources available for dual career families, families with children, and families caring for elderly members. We will institute a dialogue among administrators, faculty, and staff concerning what changes in current campus structure, tenure regulations, and other policies would best accommodate the needs of families.

Broader Impacts. The influence and stature of Rutgers University in the state and the nation will be enhanced through our diversity initiatives. We expect our program to have the following specific outcomes: increase recruitment of female and minority faculty; reduce attrition of women and minority faculty; increase the number of women promoted to full professor and professor II; increase the number of women rising to leadership positions in either academic administration or areas of scholarly leadership; increase faculty satisfaction by encouraging collaborative projects and creating opportunities for science faculty to become involved in such projects, especially in collaboration with faculty in the Institute for Women's Leadership or Women's and Gender Studies; and increase the visibility of female Rutgers SEM faculty as measured by press coverage and awards received.

Scientific Merit. By collecting indicator data for the proposed programs, evaluating their impact and then disseminating them to the scientific and women's and gender studies communities, this program will make a significant contribution to understanding techniques and tactics that promote advancement and retention of women scientists.

Rutgers University for Faculty Advancement and Institutional Re-imagination (RU FAIR)

Project Outline

We plan to re-imagine what can be done to support the participation and advancement of women in science, engineering, and mathematics (SEM) on all three campuses of Rutgers University through five interrelated initiatives. Specifically, we will:

1. Recruitment and retention initiatives: Develop a targeted strategy for increasing the number of women in general, and minority women in particular, on the SEM faculty of Rutgers University, including skills training for search committees to enhance the recruitment of women and minority SEM faculty, leadership training for established faculty, and a coordinated mentorship program. Wherever appropriate, we will use “best practices” built on programs that have been developed at other institutions through ADVANCE support.

2. Communication Initiatives: Enhance communication among faculty within a geographically and structurally complex multi-campus university. We will build on existing initiatives to enhance our web presence and establish RU FAIR professorships within different schools and campuses. We will sponsor social events, such as lunches and picnics, to give SEM faculty from different campuses more opportunities to network.

3. Networking and Liaisons with Women’s Programs Initiatives: Develop mini-grants to encourage interdisciplinary research across schools and campuses and to work closely with the nationally acclaimed Rutgers Institute for Women’s Leadership (IWL) to deliver leadership training, to encourage research, and to develop interdisciplinary courses.

4. Visibility Initiatives: Achieve greater visibility for our women faculty by creating a bigger web presence, instituting a lecture series, nominating our faculty members and postdoctoral associates for prestigious awards, and generating greater press coverage for their research accomplishments.

5. Family Initiatives: Bolster the resources available for dual career families and for families with children. Further, we will institute a dialogue among administrators, faculty, and staff concerning what changes in current campus structure, tenure regulations, and other policies would best accommodate the needs of families.

Introduction

In recent years, the central administration of Rutgers University has instituted new policies and directed financial resources toward increasing gender and racial diversity. The university is poised to become a national model for institutional transformation. Our student body is among the most racially and ethnically diverse in the nation. During the 2007-2008 academic year, Rutgers has transformed undergraduate education on the New Brunswick campus, forming a single School of Arts and Sciences that brings together faculty and students and creates a campus-wide climate for change. Our chemistry department ties for first place (with the University of California–Los Angeles) for having the highest proportion of women of any major chemistry department in the nation (Marasco, 2006). Our departments of animal science, civil engineering, and electrical and computer engineering have greater percentages of women on the faculty than are represented in the pipeline. President Richard McCormick has stated publicly, “We need more women on the faculty in many areas and more faculty of color everywhere.” Both the President and the Executive Vice President, Philip Furmanski, have taken a strong position on the need to increase diversity. Despite difficult fiscal cutbacks imposed by the state legislature, several concrete steps already have been taken under their leadership. For example, the Faculty Diversity Initiative was established in 2004 to make funds available for special diversity hires. The Office for the Promotion of Women in Science, Engineering and Mathematics (OWiSEM) was established in 2006. Joan W. Bennett and Catherine Duckett -- PI and co-PI, respectively, on this proposal--were hired on permanent state

lines to develop this office. In addition, working with several women's groups and the Office of Institutional Research, the central administration has supported a number of gender and equity studies to gather data on the state of the university (see below).

Two especially auspicious provisions were ratified in August 2007 in a contract between the American Association of University Professors-American Federation of Teachers (AAUP-AFT) faculty union and the administration. First, a new Faculty Development Fund has been established to increase the number of full-time Rutgers faculty lines by at least 100 over the next four years. In this unprecedented move, the administration and the union each agreed to contribute \$6 million, for a total of \$12 million. In addition, the administration has promised to provide separate funds for start-up costs and other requirements needed to fill these positions (AAUP/AFT-Rutgers 2007). This places Rutgers in a strong position to change its faculty gender composition and increase the number of women faculty in science and engineering. An additional outcome of the union negotiations is an expanded work-family leave provision. Dr. Karen Stubaus has been appointed to direct a newly formed Office of Institutional Diversity and Equity starting in the fall of 2007. Using funds from an internal Center of Excellence grant, Rutgers has awarded \$50,000 to the OWiSEM for a leadership program for academic SEM women, which provides additional evidence that the administration is "putting its money where its mouth is." Finally, the initiation of a major new capital campaign led by the Rutgers Foundation, with women's issues as one of the centerpieces, makes this an auspicious time for our planned RU-FAIR initiatives.

Our RU-FAIR proposal will build on this strong foundation and offers several interdependent strategies to increase the number and retention of SEM women faculty. It places a particular focus on minority hiring because we believe that New Jersey in general, and Rutgers in particular, offer particularly hospitable climates for both African American and Hispanic scientists. Our proposal incorporates several portable strategies developed by NSF ADVANCE programs at other universities. The ultimate goal is institutional change, with improved outcomes for *all* scientists and engineers. Our letters of support demonstrate an extraordinary sense of common purpose from key officials across the university. This gratifying level of-institutional buy-in is essential, given Rutgers' extreme structural and geographical complexity.

Context

The 2006 National Academies of Sciences report, *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering*, documented the continuing problems faced by academic women in science, engineering, and mathematics fields. The total number of women students majoring in SEM disciplines has increased over the last four decades to reach 50% (or more), although the percentage of women on faculties of engineering, math, and the physical sciences remains small (NSF, 2000; Long, 2001; Nelson and Rogers, 2005; NAS, 2007). The pipeline is the usual metaphor used to describe the differences in the education and career trajectories of men and women, a metaphor that has become so pervasive that it may limit the conceptual framework for research on the causes of men's and women's differential career outcomes (Xie and Shauman, 2003). The pipeline is only part of the problem. In the social sciences, for example, women have made up more than 30% of the doctorates for more than thirty years, yet their numbers are not reflected in senior faculty ranks. Women from racial and ethnic minorities are "virtually absent from the nation's leading science and engineering departments," and Rutgers is no exception (NAS, 2007, pg. 2).

The Massachusetts Institute of Technology (MIT) report on the marginalization and inequities experienced by tenured women faculty at MIT received extensive coverage both inside and outside MIT (Committee on Women Faculty in the School of Science, 1999). Subsequently, numerous other studies have documented the continuing problems that women

and minorities face in science and engineering (Etzkowitz et al., 2000; NSF, 2000; Long, 2001; Xie and Shauman, 2003; Rosser, 2004; Valian, 1998; Ceci and Williams, 2007; NAS, 2007). Remarkably similar complaints were voiced across disciplines by the women interviewed for Rosser's book, *The Science Glass Ceiling* (Rosser, 2004), which reported a lack of camaraderie, a difficulty in gaining credibility and respect from peers, a dearth of mentoring and dual career placements, and acute time management issues. As Rosser concluded, "[W]omen in all fields of science and engineering in a diverse set of institutions encounter similar barriers and problems," adding "the problem is not with the women, but with the institution of science as currently practiced" (Rosser, 2004). There is considerable evidence that gender schemas create implicit differential expectations and evaluations of men and women; moreover, small disadvantages accumulate to hinder the advancement of women (Valian, 1998). Minority women are even more underrepresented than women in general and suffer from a double burden of racial and gender schemas that undervalue their potential for achievement.

In examining the reasons why so many talented young women and minorities choose not to enter the academic life, we at Rutgers encounter every important issue in SEM faculty life: inconsistent recruitment and mentoring policies; professional isolation and exclusion of people who do not look like the stereotypic white male scientist; intense competition for funding; and difficulties in balancing personal and workplace responsibilities. Women with young families face exceptional demands on their energy, time, and creativity

Rutgers University

Overview. Rutgers University is one of the most historically, geographically and organizationally complex universities in the country. The original Rutgers College was a private, colonial college founded in 1766 (as Queens College). It was designated the State University of New Jersey by acts of the New Jersey Legislature in 1945 and 1956. The current Rutgers University also encompasses Douglass Residential College, founded as a public coordinate college for women in 1918 as the New Jersey College for women and The School of Environmental and Biological Sciences (SEBS; formerly the New Jersey College for Agriculture and Cook College), founded as a land grant school in 1864. The Newark campus (formerly the University of Newark), founded in 1936, was merged into the Rutgers system in 1946. The Camden campus (formerly the College of South Jersey), founded in 1926, was added in 1950. Rutgers University is centrally administered from New Brunswick, however provosts at the Newark and Camden campuses hold significant autonomy. There is no provost on the New Brunswick where the Executive Vice President, Philip Furmanski, serves this role. Chancellors Margaret Marsh and Steve Diner serve as the chief academic and executive officers of the Camden and Newark campuses, respectively.

In summary, as currently constituted, the university has three geographically dispersed campuses (Fig 1a). The Rutgers'- New Brunswick "campus" is actually composed of five constituent colleges and 10 graduate and professional schools, sprawled across two cities (New Brunswick and Piscataway), and which are connected by a large inter-campus bus system (Fig. 1b) On the New Brunswick campus, most SEM faculty members are found in the School of Arts and Sciences (both sides of the Raritan River), SEBS(Cook campus), The Pharmacy School (Busch campus) and the School of Engineering (Busch campus). This geographical sprawl and complexity presents a formidable impediment to cross campus communications and cross school communication.

The university offers more than 100 distinct bachelor, 100 master, and 80 doctoral and professional degree programs across 175 academic departments and 29 degree-granting schools and colleges, which enroll approximately 50,000 students (34,392 students in New Brunswick, 10,203 students in Newark, and 5,165 students in Camden in 2006). There are over 2,200 tenured or tenure track faculty members and 8,822 graduate and professional students

(on all three campuses). Of total graduate and undergraduate students, 16,729 are non-white, with Asians constituting the largest minority group, comprising about 10%. More than half of Rutgers students, at both the undergraduate and graduate level, are women. Despite the large number of women students and the university's long focus on the education of women at Douglass College, women are underrepresented at all levels on the faculty. (See section on gender equity below). The distribution of faculty women varies between campuses, schools, and disciplines and at different ranks. For the years 2004-2006, slightly more than one third of assistant professors were women, but only 21% of full professors were women. Women were underrepresented as department chairs, an important gatekeeper role. More women served as deans and directors than as department chairs.

Gender Equity at Rutgers. No single study has examined gender equity for faculty women across all of Rutgers University. However, several excellent studies have focused on the status of women in the Faculty of Arts and Sciences (now School of Arts and Sciences, SAS) on the New Brunswick campus. Currently, SAS employs nearly half of the total New Brunswick faculty. The FAS Gender Equity Committee (2001), chaired by Noemie Koller, deliberated and wrote "A Study of Gender Equity in the Faculty of Arts and Sciences, Rutgers University-New Brunswick." Roos and Gatta (2007) updated these data for 2003-2004. A separate Committee on Increasing Faculty Diversity, chaired by Mary Hartman, Director of the Institute for Women's Leadership (IWL), recommended strategies to address the under representation of women and faculty of color (FAS, 2004). This Committee used data compiled by Mary Hawkesworth, Chair of the Department of Women's and Gender Studies. Hawkesworth and her colleagues documented the declining number of faculty of color at Rutgers (Hawkesworth et al., 2005).

Fig 1a. Location of three campuses of Rutgers - The State University of New Jersey. (Source: <http://ruweb.rutgers.edu/about-the-university.shtml>)

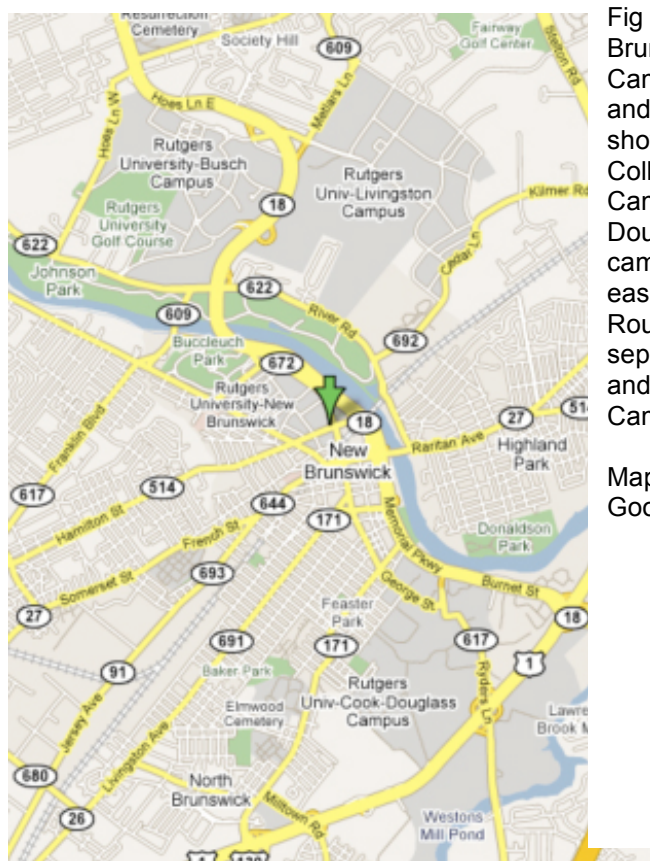


Fig 1.b New Brunswick Campuses. Busch and Livingston are shown North of College Ave. Campus (arrow). Douglass and Cook campuses are south east just north of Route 1. Six miles separates Busch and Cook Campuses.

Map courtesy of Google.

The FAS Gender Equity Committee reviewed data on faculty women's status with respect to salaries, hires, start-up funds, promotion rates, research support, leadership opportunities, and "climate" issues as of 1999-2001. Although the percent female among total FAS hires as a whole increased from 26% in the 1970s to 36% in the 1990s, relative to academic labor pools women remained seriously underrepresented in the life and physical sciences and in mathematics. Further, women were significantly underrepresented at the PII (Professor II) rank. There were three times as many male PIs (Professor I) as compared to female PIs; there were ten times as many male PIIs as compared to female PIIs. In addition, women held few leadership positions. Men who left the university typically retired, while women moved to other academic jobs. Particularly disturbing for scientists was the sex gap in discretionary funds (research accounts, start-up packages, and summer salaries). The respondents also reported that women were more likely than men to feel "personal or professional isolation."

Roos and Gatta (2007) updated the FAS Gender Equity Committee's findings for the 2003-04 academic year, confirming and strengthening the original Committee's conclusions. By 2003-04, women were significantly underrepresented in two-thirds of the 28 FAS departments. Women's representation was particularly low in the life (23%) and mathematical/physical sciences (10%). The number of senior (PII) women had increased. One important reason for women's under representation in the PII rank was that PIIs were primarily in the mathematical/physical sciences, the disciplines in which women were least well represented. Men were only slightly more likely than women to be promoted during the full 1997 to 2004 period, but the sex gap grew over time. Few women served as deans, chairs, or directors, particularly in SEM fields. Between 1981, when FAS was formed, and 2003-04, only one woman served as chair of any science department (chemistry). Male faculty continued to be more likely to earn discretionary summer salaries, receive out-of-cycle merit increases, and have larger research accounts.

Looking more broadly at all Rutgers faculty, Hawkesworth et al. (2005) found that by 2004 women represented 35% of the tenured/tenure-track faculty, up from 27% in 1976. These statistics masked a decline in the total number of women faculty on the New Brunswick campus, from 573 in 1978 to 510 in 1992. Figures were bleaker for African American and Hispanic faculty. The percent of full-time African American faculty at Rutgers declined from 6.8% in 1976 to 4% in 2004. In absolute numbers, there were 175 African American faculty members in 1976, but only 97 in 2004. The number of Hispanic faculty dropped as well, from a high of 63 in 1999 to 50 in 2004.

The 2004 Committee on Increasing Faculty Diversity was charged to "recommend realistic goals and strategies to address the under representation of women and faculty of color" in FAS departments. The committee collected and reviewed the relevant data, assessed perceptions, and developed a plan to address inequities. Using the data outlined above, the task force recommended "structural" changes and a transformation of the "existing institutional climate." In preparing this proposal, we supplemented the Roos and Gatta's (2007) SAS data for 2004 with 2006 data from the Office of Institutional Research and Academic Planning for the SEBS and Engineering faculty for Rutgers-New Brunswick. The number and percent of female members for each Rutgers science department is given in Table 1 along with the National Research Council (NRC) data on percent female of cumulative doctorates (1981-98) and the percent female in the top 100 departments in the relevant disciplines (Nelson, 2007). Women's representation is greatest in two social science departments in SAS (anthropology, 45%, and sociology, 48%) and in one department in SEBS (nutritional sciences, 46%). No other Rutgers department comes close. Women are 5.5% (Marine & Coastal Sciences) to 26.9% (Genetics) of the faculty in the life sciences and less than 10% in most of the math/physical sciences and engineering. (Note: The SAS faculty data are from 2004 so we are pleased to report that

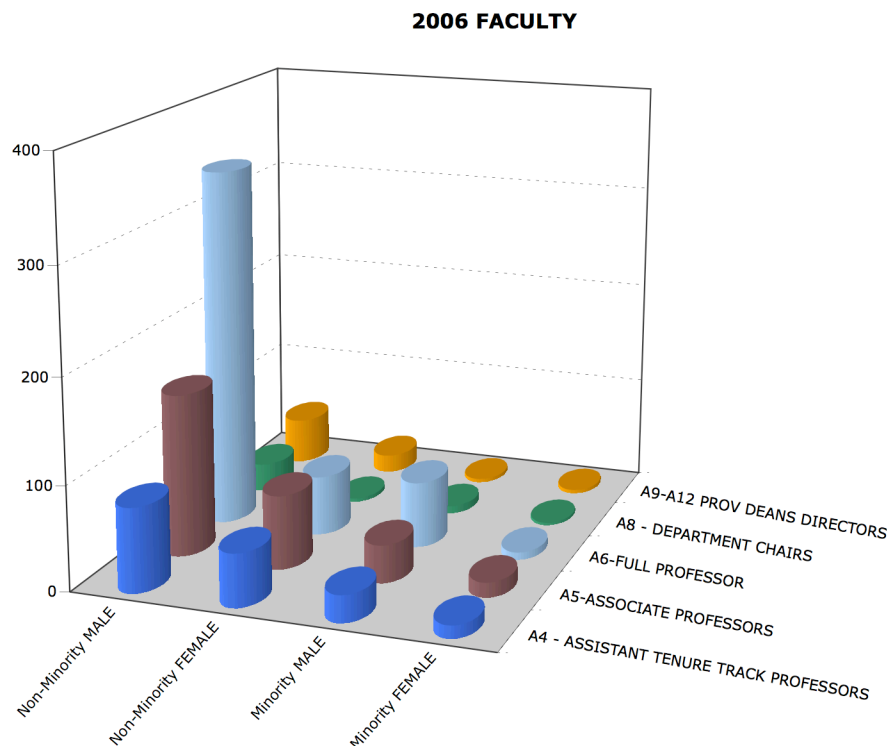


Fig. 2. 2006 Science, math, and engineering faculty by rank, showing the under presentation of minorities at all three Rutgers campuses. (Data courtesy of the Rutgers office of Institutional Research.)

computer science, listed at 2.6% female, has hired two women over the last year and a fourth is scheduled to start in January 2008. Thus far, no other SAS department has had major changes in gender ratio.)

Gender composition varies from discipline to discipline. The distribution of women and minority SEM faculty is shown in Figure 2. There are very few minority women at any rank among the SEM faculty. To estimate how well the fraction of women faculty in individual departments reflected the pool of female candidates, we compared the fraction of women faculty to the fraction of women PhD recipients. Data from the NRC on PhDs granted between 1981 and 1998 were used to allow for the lag between the receipt of a PhD and the usual time for hiring into a faculty position. We divided the percent female for the Rutgers department by its relevant percent female from the NRC data to calculate a "utilization index". Using 0.8 as an arbitrary cut point, we found that 10 of the 31 Rutgers departments have utilized the existing pool of women PhDs in their respective disciplinary pools reasonably well. Eleven departments scored less than or equal to 0.5 on this index: geography, psychology, molecular biology and biochemistry, computer science, mathematics, statistics, biochemistry and microbiology, food science, marine and coastal sciences, chemical and biochemical engineering, and materials science. These data suggest that the majority of Rutgers SEM departments are failing to tap into the existing pool of women candidates, especially in mathematics and statistics, computer science, materials science, and most of the life science departments. Finally, we compared percent female in Rutgers departments with the top 100 departments in their respective disciplines, using data from Nelson (2007, Table 11). Where data are available for comparison, the following Rutgers departments had lower percentages of women faculty than their peer institutions: psychology, computer science, geology, mathematics, and most of the life sciences

In summary, while women constituted 3.8-45% of the SEM faculty on the New Brunswick campus, in the majority (18 out of 31) of departments women constituted less than 30%. Currently, 3.7% of the full-time SEM faculty is black and 2.3 % is Hispanic, for a total of 33 minority SEM women.

Table 1. Total Number and Percent Female in Rutgers-New Brunswick Social Science, Life Science, Mathematical & Physical Science, and Engineering Departments, With National Comparison Data

	(1)	(2)	(3)	(4)	(5)
	Rutgers Departments		NRC Cumulative Doctorates, 1981- 98 ^b	Utilization Index ^c	Top 100 depart- ments, FY 2007 ^d
School of Arts & Sciences (AY 2003-04)^a	Total	% Female	% Female	%	% Female
<u>Social & Behavioral Sciences</u>	<u>181</u>	<u>32.0</u>	<u>50.1</u>	<u>.64</u>	
Anthropology	20	45.0	54.2	.83	na
Economics	30	16.7	24.2	.69	16.3
Geography	7	14.3	28.6	.50	na
Political Science [Pol Sc. & Gov't]	30	30.0	30.5	.98	26.1
Psychology	50	28.0	57.4	.49	37.3
Sociology	31	48.4	51.7	.94	39.8
<u>Life Sciences</u>	<u>60</u>	<u>23.3</u>	<u>41.0</u>	<u>.57</u>	24.4
Cell Biology & Neuroscience	26	26.9	42.5	.63	na
Genetics [Microbiology, Human & Animal Genetics, Genetics]	17	23.5	43.5	.54	na
Molecular Biology & Biochemistry	17	17.6	38.6	.46	na
<u>Mathematical & Physical Sciences</u>	<u>248</u>	<u>10.5</u>	<u>20.4</u>	<u>.52</u>	
Chemistry	41	24.4	24.8	.98	13.7
Computer Science	38	2.6	19.0	.14	13.2
Geological Sciences [Geology]	16	12.5	22.5	.56	16.5
Mathematics	70	8.6	22.5	.38	12.9
Physics & Astronomy	62	9.7	11.3	.86	9.1
Statistics [Mathematical Statistics]	19	5.3	25.7	.21	na
<u>School of Environmental and Biological Sciences (Fall 2006)^a [Life Sciences]</u>	<u>165</u>	<u>21.2</u>	<u>41.0</u>	<u>.52</u>	24.4
Agricultural, Food & Resource Economics [Agricultural Economics]	15	13.3	21.7	.61	na
Animal Sciences [Animal Breeding & Genetics, Animal Husbandry, Animal Nutrition, Animal Science Other]	15	33.3	21.7	1.53	na
Biochemistry & Microbiology	16	12.5	38.4	.33	na
Ecology, Evolution & Natural Resources [Ecology]	18	22.2	31.3	.71	na
Environmental Sciences	18	27.7	28.1	.99	na
Food Science [Food Engineering, Food Science Other, Food Sciences]	15	20.0	40.4	.50	na
Marine & Coastal Sciences [Marine Sciences & Oceanography]	19	5.5	25.3	.22	na
Nutritional Sciences	11	45.5	72.3	.63	na
Plant, Biology & Pathology [Plant Genetics, Plant Pathology, Plant Physiology, Plant Breeding & Genetics, Plant Science Other]	27	18.5	29.5	.63	na

School of Engineering (Fall 2006)	<u>130</u>	<u>12.3</u>	<u>12.1</u>	<u>1.02</u>	
Biomedical Engineering [Bioengineering & Biomedical]	17	14.7	23.4	.63	na
Chemical & Biochemical Engineering [Chemical]	13	7.6	16.3	.47	12.6
Civil & Environmental Engineering [Civil]	12	25.0	11.2	2.23	13.0
Electrical & Computer Engineering [Computer & Electrical & Electronics]	26	15.4	8.6	1.79	9.5
Industrial & Systems Engineering [Industrial & Manufacturing & Systems]	11	18.2	19.2	.95	na
Materials Science & Engineering	26	3.8	19.5	.20	na
Mechanical & Aerospace Engineering	25	4.0	7.2	.56	8.8

^aNational Research Council (NRC) fields used for comparison purposes included in brackets. Small fields (Africana Studies, Puerto Rican & Hispanic Caribbean Studies, Exercise Science, Human Ecology, Entomology) included in disciplinary averages, but not separately.

^bPercent female of doctorates conferred in the U.S. from 1981 to 1998, by field (National Research Council).

^cUtilization index = (% female in department / % female in cumulative NRC doctorates, 1981-1998) (Nelson, 2002).

^dPercent female in top 100 departments, FY 2007; Nelson (2007:Table 11). Nelson sometimes used different discipline titles. Equivalences

include (her "biological sciences" for RU Life Sciences, and RU's School of Environmental and Biological Sciences; "earth sciences" for Geological Sciences; "physics" for Physics and Astronomy; chemical engineering for Chemical and Biochemical; "civil" for Civil and Environmental; "electrical" for Electrical and Computer Engineering; and "mechanical" for Mechanical and Aerospace.

Sources: SAS data: SAS Dean's office; NRC data: Rutgers University Office of Affirmative Action (March, 2001); Nelson (2007:Table 11)

Plans for action

We will focus on five major initiatives, outlined below. Proposed instruments are frequently overlapping. For example, the RU-FAIR professors, introduced in the first initiative (Faculty recruitment and retention) will be involved in all parts of institutional transformation. Similarly, the mini-grants described under the third initiative (Networking and liaisons) could be awarded for communications, visibility, work-family issues, or some combination so long as they further programs that bring different parts of the university together.

1. Faculty recruitment and retention initiative

Search committees need a tenacious and an aggressive approach to recruitment and hiring because discrimination in hiring remains a subtle but persistent problem (Trix and Penska, 2003; Rosser, 2004; Roos and Gatta, 2007). These facts are not necessarily well-known among administrators, search committees, and faculty members, nor do all faculty members believe that the recruitment of women (or minority) faculty is either needed or appropriate (Steward et al, 2007a).). For minorities, the pipeline issue remains acute. Between

2002 and 2006, in science and engineering fields the *total* number of African American PhD recipients was 3245 and of Hispanic PhD recipients was 3467. During the same period, there were more than 58,000 white PhD recipients (Lederman, 2007). On the positive side, the percentage of minority graduate students is increasing, with both African American and Hispanic groups showing substantial improvements especially in the biological and health sciences and in engineering (Council of Graduate Schools, 2007). For these reasons, we propose that engagement with the faculty in discussions about hiring for diversity and best practices in recruitment will have the strongest chance for making the most lasting changes in Rutgers' culture. We will adopt a proactive process that will require search committees to look beyond their usual applicant pools.

RU-In STRIDE (Institutionally Novel Strategies and Tactics for Recruitment to Improve Diversity and Excellence). We model our program on the successful University of Michigan STRIDE program, adjusting it to Rutgers' needs as RU-In STRIDE. Rutgers is in a unique position to change its faculty gender composition because of the commitment by the administration and the AAUP to provide funds for 100 additional faculty lines in the next four-year contract cycle. If properly leveraged, this opportunity could allow Rutgers rapidly to acquire a very different demographic profile. A similar endeavor at Brown University hired 51% women and minorities (O'Neil et al., 2005). Intellectual "buy-in" is critically important to the success of our proposed recruitment efforts (Stewart et al. 2007a; Ramos and Benítez, 2007; Jo Handelsman and Jennifer Sheridan, pers. comm.) and we are gratified by the intensity of institutional support (see letters of support).

The STRIDE model (see Stewart et al., 2004, 2007a) will be used to form committees of distinguished male (at least 50%) and female professors from across Rutgers' schools and campuses to study the relevant research literature and proposed techniques for recruitment. Materials and implementation materials developed at the Univ. of Michigan, the Univ. of Washington, Rice Univ. and the Univ. of Rhode Island will be distributed. The RU-In STRIDE committees will report back to their respective campuses and to us with a set of recommendations. They will develop a set of guidelines for best practices in hiring that will include recommendations for how departments should best be made accountable, while recognizing the differences in disciplinary, school, and campus cultures. The central administration then will hold deans accountable to these recommendations so that searches in their respective units follow In STRIDE guidelines (see letters).

We will also partner with the administration to facilitate interviews for additional female candidates for searches in those departments that contain significantly low numbers of women relative to the academic pipeline (See Table 1). The central administration has agreed to cover 50% of these costs for up to twelve SEM searches per year. Minority women candidates will be given priority.

Retention and Mentoring. Given the difficulty in hiring women in many SEM departments, it is important to retain those who are hired. A strong mentoring program increases faculty retention (Rabinowitz and Valian, 2007), and studies from corporate environments show that efforts to improve the diversity climate for minorities have had a positive impact on employee retention (McKay et al., 2007). Mentorship promotes both job satisfaction and professional success (Siebert et al., 1999; Kidd et al., 2003; Stewart et al., 2007b *passim*). Moreover, there is growing consensus that a suite of advisors in both formal and informal relationships and over different developmental stages improves worker job satisfaction and productivity. For this reason we propose to use several mentorship strategies employed by other institutions (RU-FAIR professorships, speed mentoring, and coaching) in order to provide women with institutional perspective and context for the evaluation of their perceived and planned professional development. Mentorship strategies will be appropriate to campus, school, and department and will include coaching on promotion and tenure requirements such

as the ADEPT Instrument developed at Georgia Tech (<http://www.adept.gatech.edu/download.htm>). We will work with the New Brunswick committee on university mentoring and with individuals on the Camden and Newark campuses to propose and implement this system in ways that are sensitive to the different traditions and cultures across Rutgers.

2. Communication initiatives

RU- FAIR professorships will be modeled on the ADVANCE professorships at Georgia Tech (Relaff *et. al.*, 2007; Fox *et al.*, 2007). They will be selected based on competitive application, including nomination by deans, and reviewed by a selection committee that includes the PIs, CoPIs, and Internal Advisory Board. There will be 3-4 termed professorships of 4.5 years. The application will include a narrative from the potential RU-FAIR professor outlining proposed activities that strengthen existing women's networks and fortify their ties to all relevant campus networks, including male dominated networks.

The professorships are intended for senior SEM women faculty who will organize and implement (with the help of staff) a planned program of activities, as outlined in their RU-FAIR professorship proposals. Each professor is expected to serve as a university leader who fosters mentoring, promotes diversity, facilitates communication among our geographically dispersed faculty, and mediates between faculty and administration. The successful application will detail mechanisms for improving conditions for the retention of women and minorities in specific units. Units may be a college or campus, or may be structured along lines of scientific inquiry, such as computer or biological sciences. The RU-FAIR professors will be provided with administrative and clerical support as well as discretionary funds. The Newark and Camden campuses in particular would benefit from having an RU-FAIR professor who can work with respective local departments to develop campus-appropriate interventions and special effort will be made to encourage applications from those campuses. However, we plan to award professorships based on the quality of the proposals, not only on their campus location. We expect that many ideas from proposals not funded as RU-FAIR professorship will be appropriate for the RU-FAIR mini-grant proposal competition (see below). The mentoring activities of RU-FAIR professors will be planned in conjunction with other mentoring activities implemented by the OWiSEM. RU-FAIR professors are also expected to take a visible role in our recruitment activities when searches are conducted in their discipline or academic unit.

Dissemination. The PI will attend the monthly meetings of the New Brunswick Dean's council and the President's Advisory council and make input, where appropriate, about the activities of the RU-FAIR ADVANCE program as well as other activities of the OWiSEM. At least once a year, she will be placed on the formal agenda of these groups to report more comprehensively on the progress of the RU-FAIR initiatives. Throughout, the PIs will coordinate with the activities of the Office of Institutional Diversity and Equity and the Office of Employment Equity.

Institutional research. In gathering data for the preparation of this proposal, we have discovered that the multi-campus and multi-school nature of the university has led to historically separate and incompatible systems of data collection and reporting. The PIs will work closely with the Office of Institutional Research to develop a more streamlined and unified system for Rutgers database management across the entire university so as to simplify future data collection and also to monitor progress.

3. Networking and Liaisons with Women's Programs

Rutgers has one of the strongest departments of Women's and Gender Studies (part of SAS) in the country and the New Brunswick campus is also home to the Center for Women and Work (School of Management and Labor Relations). These two units are part of the seven-member Institute of Women's Leadership (IWL) consortium. With the exception of a successful seminar offered in 2001-2002 ("Teaching Inclusive Science and Engineering") there has been little cross-talk between women from SEM disciplines and Rutgers women's programs, nor to date, have the latter programs included a component that focuses on the careers of SEM women. The potential synergy is enormous. We plan to offer RU-FAIR mini grants to bring these "two cultures" closer together. Similar mini grant projects at other institutions have proven to help faculty form stronger networks and enhance their professional stature (Dyer and Montelone, 2007).

RU-FAIR mini-grants. These grants are designed to stimulate course development, leadership and research as well as to increase retention through strengthened networks and informal mentorship. Grants will range in size from \$500 to \$15,000, with an expectation to award 5-10 grants yearly. Teams that include men will be eligible to apply. Funds will be offered for course development and to provide seed money for interdisciplinary research collaborations between Rutgers women's programs and Rutgers SEM faculty. Proposals that study the different career paths of men and women will be particularly encouraged. Possible topics for inquiry include: How do stereotypes and presentation of self affect perceptions of SEM women? Are laboratories inherently androcentric? Does the "hacker nerd" culture turn off women?

Leadership training. We have developed a pilot leadership training course for SEM women modeled on the successful Senior Leadership Program, an annual offering of the IWL, which provides a "short course alternative" to the traditional M.B.A. The current Senior Leadership Program for Women does not accept academic women so our program fills an important gap. Our leadership program is intended to prepare SEM women for leadership roles as department chairs, deans, center directors, society presidents and the like. A pilot program, supported by a Rutgers Center of Excellence grant, is being developed with the IWL and The School of Management and Labor Relations. This pilot leadership training program for Rutgers academic SEM women will be offered as OASIS ("Objective Analysis of Self and Institution Seminar"), for the first time during the spring semester of 2008. (see: <http://sciencewomen.rutgers.edu/news.shtml>). After we evaluate and refine OASIS, it will be extended to women beyond Rutgers with the intent that it becomes tuition-sustained and self-supporting.

Ultimately, as a long-term goal, OWiSEM hopes to establish a SEM Institute for Women's Leadership, which would become the eighth member within the IWL consortium. Rutgers is embarking on a major capital campaign and we are working closely with the Rutgers Foundation to identify private donors and foundations to support both the bricks and mortar and staffing needs of our proposed SEM Women's Leadership Institute.

4. Visibility initiatives

Rutgers Sciwomen website: One of the first acts of the OWiSEM was to establish a web site that includes a searchable database of faculty profiles for all female faculty members with C.V.s, images, and links to individual websites (<http://scienceowmen.Rutgers.edu/profiles/>). As of early December 2007, 151 of the tenure-track women in SEM fields at Rutgers were profiled.

For women from certain schools and departments (e.g. Pharmacy), this is the only Rutgers website with specific information about their research and teaching. The site has worked as an important aid for internal networking and is now receiving approximately 30,000 hits per month. Our recently developed Girl Geek/My Story web site features 1500-word autobiographical pieces, in which women tell their scientific coming-of-age stories. Most of these essays are illustrated with pictures of the women when they were young. This site gets approximately 10,000 hits per month, has sparked considerable discussion among Rutgers faculty, and has garnered some press attention. Neither the professional profiles nor the Girl Geek/My Story sites are completed. Approximately 20% of the time of the RU-FAIR Assistant Director will be used to complete the faculty profiles and Girl Geek stories and to expand the website so as to make SEM faculty at the three campuses more professionally and personally accessible to each other. In addition, we will add web pages to aid faculty recruitment, to facilitate internet discussions about needs and possible solutions related to making Rutgers a more family friendly institution, to publicize better the research of our faculty, and generally to promote more creative cyber networking.

Lecture series. We will also establish a lecture series to showcase prominent women in SEM disciplines. Each semester, at least one outstanding woman will be brought to Rutgers to lecture in her field of expertise. Lecturers will include alumnae who have been successful in SEM disciplines and participants from other ADVANCE programs who can share their experiences. Where possible, the lectures will be held in conjunction with existing departmental seminar series in order to maximize the chances that the male faculty will meet and interact with our distinguished lecturers. The Office of the Executive Vice President will provide funds for travel, board and receptions; we will cover room rental and honoraria. The lecture series will showcase accomplishments of non-Rutgers SEM women; the receptions will encourage social networking at Rutgers. RU-FAIR professors or mini-grant recipients will be responsible for organizing these programs in their individual schools and campuses. Depending on the location of the organizer, the lectures will be held in Camden, New Brunswick, or Newark. Publicity will be Rutgers-wide, but we recognize that most of the audiences will be drawn from the campus where the lecture occurs.

Awards, honors and press coverage. Outside verification of excellence is an important yardstick that complements publication and grant support in measuring scientific success. Almost all professional societies offer prizes to award distinction and discovery. We propose to nominate deserving Rutgers University faculty, postdoctoral fellows, students, and alumnae for appropriate awards. We will focus the nomination process on qualified women and minorities but will not limit it to them. The RU-FAIR professors and the Assistant Director, working with the co-PIs, will be charged with identifying at least four qualified candidates each year and with preparing the nomination materials for appropriate local, national, or international awards. Women and minorities at any level along the career path will be eligible for nomination, but we will focus on younger candidates because we hope to maximize probable impact on career advancement. Names of potential nominees will be solicited from department chairs and deans. Our Sciwomen home page will be made available for the submission of names for nominations. Criteria for choosing candidates to be nominated will be flexible because of the plethora of disciplines, awards specifications, and so forth.

Media attention can also bring prestige to both the individual and the institution. We will work with the office of Media Relations to bring attention to outstanding accomplishments of women scientists, based on major publications, grant awards or other newsworthy events (see Branson support letter). The RU-FAIR Assistant Director and Faculty Development Coordinator will coordinate activities that publicize women's achievements.

5. Family initiatives

Collaborations with AAUP and Office of Institutional Diversity. Women are earning more SEM degrees at the same time requirements for tenure and competition for grants has become increasingly intense. The classic academic career path clashes with the prime childbearing years and many women opt out of academic careers because they refuse to make choices that are against the interests of their family life. With the newly established Office of Institutional Diversity, we will facilitate a dialogue with the AAUP-AFT union about expanded on-site day care, dual career hiring, maternity leave, and other family friendly policies. Our discussions will be open-ended so as to maximize the opportunity for broad based input. Our Assistant Director will work with the AAUP committee and the Office of Institutional Diversity and Equity and will be charged with scheduling meetings and conducting interviews with faculty. Important topics to discuss include: whether the time to tenure should be increased, whether assistant professors should be given an automatic tenure extension when they become parents (with an understanding that they may choose to come up earlier if they so desire), what kind of workload relief would be most useful for people with emergency health problems, and what kind of on-site childcare facilities are most desirable.

Dual career families. An essential component of recruitment is the ability to accommodate dual career families. Rutgers' location places us at a comparative advantage in the area of dual hiring. Both the Newark and New Brunswick campuses are within commuting distance to New York City. The Camden campus is immediately adjacent to Philadelphia. In addition, New Jersey has many information technology and pharmaceutical companies that offer potential for spousal placements. Karen Stubaus, a member of our internal advisory board, was closely involved with the founding of the New Jersey Higher Education Recruitment Consortium (NJHERC), which hosts a web-based search engine that posts faculty and staff job listings at 29 member institutions and with links to the metropolitan New York area. The RU-FAIR staff will work with NJHERC to expand and improve the site. In addition, we will assess the site's effectiveness by surveying previous users of NJHERC to ascertain the rate of success and to solicit suggestions about how to improve spousal placement.

Life cycle grants. Women carry the majority of family responsibilities. The sickness of a child can shatter well-organized childcare arrangements; the sickness of a parent can require individuals to spend considerable amounts time away from home. Family emergencies can wreak havoc with the completion of research projects and cause professional derailment at crucial junctures in careers. We will offer "life cycle" grants, available to both men and women, to help tide individuals through times of crises. ADVANCE-funded research at the Women in Science and Engineering Institute (WISELI) has shown that women and minorities take disproportionate advantage of these funds (Pribbenow and Benting, 2004; J. Handelsman pers. com). Our Internal Advisory Committee will serve as the selection committee for these awards.

Program Management

RU-FAIR Board. The Director of the RU-FAIR program will be PI Joan W. Bennett, who will lead the RU-FAIR management board, which will consist of Co-PI Patricia Roos, Professor of Sociology, New Brunswick; co-PI Lynn Schneemeyer, Professor of Chemistry and Vice-Provost, Newark; and Co-PI Dr. Catherine Duckett, associate director of OWiSEM; the Assistant Director (we hope to hire a PhD level social scientist), and the RU-FAIR professors. The board will meet every month with interim conference calls scheduled as needed.

Advisory Committees. The RU-FAIR board will be advised by both an internal and an external advisory committee. The external advisory committee will be determined at the time

an award is made in consultation with NSF ADVANCE program officers. The internal advisory board will meet with the RU-FAIR board three times per year and receive monthly e-mail reports from PIs Bennett and Duckett. The following individuals have agreed to serve as members of our internal advisory board: Georgia Arbuckle, Dept. of Chemistry and Margaret Marsh, Interim Provost (Camden campus); Richard Falk, Dept. of Mathematics; Jayne Grandes, Director Employment Equity; Mary S. Hartman, Director, IWL and former dean of Douglass College; Mary E. Hawkesworth, Chair, Women's and Gender Studies; Barry Qualls, V.P. Undergraduate Studies; Barbara Ryder, Computer Science; Deborah Silver, School of Engineering, Karen Stubaus, Associate V.P. for Academic Affairs (all New Brunswick) and Nancy DiTomaso, Rutgers Business School (Newark).

Reporting: PI Bennett reports directly to the Executive Vice-President, Philip Furmanski and will keep him, the Dean's Council and the President's Advisory Council informed regarding policies, problems, progress, and issues pertaining to institutionalization. Co-PI Duckett will be responsible for managing the day-to-day activities of the program and will supervise the Assistant Director and Faculty Development Coordinator. The Assistant Director (to be hired) will plan and organize the mentoring program, department chair training program, and visiting lecturer program, and will manage the review of the applications for the leadership program. The Faculty Development Coordinator will work with the support staff of the program management team (Bennett has an executive assistant and OWiSEM has funds for part-time assistants and consultants). In addition, a graduate student Research Resource Specialist will report directly to Co-PI Roos, who among other management activities will be responsible for design and analysis of evaluations.

Plan for Sustainability and Institutionalization

Through the formation of the OWiSEM, and the assignment of several state lines to this office, the Rutgers administration has already shown significant financial commitment to the institutionalization of ADVANCE goals on the New Brunswick campus. PI Bennett, working with Qualls and Stubaus (both members of internal advisory board) will negotiate with the Executive Vice President, and with provosts Diner and Marsh, to expand RU-FAIR OWiSEM activities on a permanent basis to all three campuses and will update them on a regular basis about the results and benchmarks of RU FAIR yearly evaluations. Rutgers is entering a major capital campaign. Members of the IWL and OWiSEM have placed women's initiatives as a centerpiece of this capital campaign and we are optimistic that our fundraising will enable us expand our activities and join the IWL as a full fledged Institute for SEM Women's Leadership.

Evaluation Plan

We plan to use formative and summative evaluation involving our advisory boards and external consultant evaluators (to be chosen in consultation with NSF ADVANCE program officers). Every aspect of RU FAIR will receive careful assessment but the specific evaluation strategy will vary with the different goals and objectives. The ADVANCE program evaluation toolkit (Freehill et al 2006) will provide the blue print for our evaluation strategy. Co-PI P. Roos, working with staff and the external evaluator, will coordinate the evaluations and during year 1 will work with the internal advisory board to determine what additional baseline data are needed to measure milestones. Where appropriate, quantitative data concerning numbers of women interviewed, hired, promoted and so forth will be collected. The RU-FAIR team will collect evaluations after each RU-FAIR event; the type of evaluation to be administered (e.g.

questionnaire, focus interview, online survey) will be determined by the board at their regular meetings and informed by consultation. Some of the anticipated evaluation questions are listed in the summary table (below). Exit interviews will be given to both men and women who leave Rutgers. To ensure effectiveness, program elements will be adjusted and amended in response on going evaluation. A large formative evaluation, with the participation of the external evaluator and both the internal and external advisory boards, is planned for the beginning of year 3. A final summative evaluation will be conducted for the end of year 5 and will include quantitative data (numbers, tenure status and rank), to determine whether representations of Rutgers women and minority faculty more closely approximate academic recruitment pools.

Plan for dissemination and sharing best practices

Four mechanisms will be used for disseminating findings and sharing best practices. First, we will add an RU-FAIR component to the Sciwomen website that will initially describe the program, provide a copy of the proposal, and explain how the program is managed and organized. Second, we will produce and distribute our annual report and a newsletter that describes the past year's activity, the upcoming activities for the next year, and the most exciting news or results of the program. We will post our report on our website as well as making it available in printed form. Third, we will disseminate findings through publication in scientific and engineering journals; higher education journals; science policy publications; and/or other journals such as *SIGNS* and *Journal of Women and Minorities in Science and Engineering* that publish gender equity findings. Fourth, we will share best practices through professional technical society meetings and annual conferences of organizations such as AAAS, AWIS, and SWE. Co-PI Duckett and the assistant director will be responsible for producing posters and presentations about the results of RU-FAIR initiatives. All RU-FAIR professors and members of the advisory board will be encouraged to present these posters when they attend professional meetings to present their own scholarly work.

Summary of Proposed work.

Initiative	Mechanism for Change	Timing	Responsible party	Some Preliminary Evaluation Questions
Recruitment and Retention	Best Practices Training and Dissemination	Yr 1 develop /adopt pilot program Yr2-5 Expand & administer	RU-In Stride committee & Duckett & Bennett Yr2 Duckett & Asst. Dir ; yrs 3-5 Assistant Director	How have departments changed their practices? Has the number of women increased in targeted departments? Is there a net increase in the # of women and minority women at Rutgers? How many departmental search committees have participated in RU-FAIR recruitment programs?
	Speed Mentoring	Yr. 1-5 Advertise and Contact departments, programs every semester	Yr 1 Duckett & Asst. Dir Yr 2- Asst. Dir Faculty development coordinator	Do women faculty report a net increase in active mentor relationships? Do mentors and protégées report more professional satisfaction? Do young faculty report a decline in professional isolation? Do they report greater comfort with leadership roles when surveyed about their plans? Are more women faculty in leadership roles?
	Leadership Training			
	RU- mini Grants	Yearly, Publish final reports yrs 2-5	RU-FAIR Professors allocate funds/ Administration Duckett	Do grant recipients report active mentor relationships? Do grant recipients report more professional satisfaction? more invitations to visit other labs?
	RU- FAIR Professors	All years	RU- FAIR Professors Admin support by Asst. Director & Faculty development coordinator	Are female faculty taking advantage of the services provided? Do RU-FAIR professors report positive relationships with colleagues and more professional satisfaction?
	RU-FAIR Professorial Mentoring	Years 2-5		Do junior faculty report active mentor relationships and increased professional comfort because of RU-professorial activities?
Communication and Visibility	RU-FAIR professors (TBA Activities)	Yr 1 2 nd Semester	Individual RU-FAIR Professors	Are more Rutgers faculty members aware of the high-quality scholarship done by women at Rutgers? Are more queried faculty members comfortable with women in positions of leadership?
	RU-FAIR Lectures	Every Semester	RU FAIR Board invites, & Asst. Dir.	Do Rutgers faculty report collaborations with these visiting scholars? Or improved interactions?
	Nominations	Every semester	Bennett, Roos, Board, with Admin by faculty coordinator.	Are more Rutgers scholars receiving honors and awards? Do these awards result in more professional satisfaction or advancement?
	Website updates and new features	Weekly	Duckett and Asst. Dir. Design RU-FAIR admin	Do more people visit our website every month? Does our user survey report satisfaction with the information and services found on the website?
	Press coverage	Monthly	PI's and Board and Asst. Dir	Are Rutgers women in the media more often as measured by increased number of articles and page views in the electronic press?
Liaisons w/ Women's Studies	RU-FAIR Mini Grants	Yearly	Roos and RU-FaiR professors	Do we understand the professional environment for SEM faculty at Rutgers? Do feminist scholars show increased interest in the culture of science?
Family life issues and policies	Life Cycle grants	Every semester	Decisions by Board with Admin. By Duckett.	Do women and minorities report that this grant made a difference in their scholarly ability or their ability to remain employed at Rutgers?
	Family life policy	1 st year 1 st year 2 nd semester, 4 th year after evaluation.	AAUP, Duckett and office of Institutional Diversity	Do we have a better understanding of what faculty need in the way of childcare? The tenure clock? Family leave? Eldercare?
	HERC website		Assistant Director	Do evaluations given to spouses and to faculty not accepting jobs indicate that this website is helpful?

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Appendix A. Female professors in Camden and Newark.

Campus	Dept.	Total # Faculty	Number of Female Professors 2006					
			% Female Prof. All Ranks	Assist. Prof.	Assoc. Prof.	Full Prof.	Dept. Chairs	Deans/ Dirs./ Provosts
Camden	Biology	9	11.1%	1	0	0	0	
Camden	Chemistry	7	14.3%	0	0	1	0	
Camden	Math	13	7.7%	1	0	0	0	
Camden	Physics	4	0.0%	0	0	0	0	
Camden	Psychology	13	46.2%	4 (1)*	2	0	0	
Camden		6	50.0%					3
Newark	Biol. Sci.	16	31.3%	2	1 (1)*	2	0	
Newark	Chemistry	17	23.5%	2 (1)*	2	0	0	
Newark	Earth & Env. Sci.	4	25.0%	1 (1)*	0	0	0	
Newark	Math. & Comp. Sci.	14	14.3%	0	0	2	0	
Newark	Physics	4	25.0%	0	0	1	0	
Newark	Psychology	15	40.0%	1	1	3 (1)*	1	
Newark		9	33.3%					3

* In parentheses is the number of female minority professors from the total.