

Creating Chemistry for Success: Women Faculty in Science & Engineering



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Purpose of Project

- Evaluate perceived efficacy of activities found in the literature relative to diminishing structural and cultural barriers to success
- Collect quantitative and qualitative methods for campus-wide program
- Data for National Science Foundation grant:
ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers



Background

- Over the past 20 years the number of women entering S & E as undergraduates and proceeding to graduate school has increased
- More doctorates awarded to American women than American men in 2001-2002
- Traditional assumption of S & E academic “pipeline”



Barriers to Success

- Barriers faced by women in academia
- Structural and cultural barriers
- Minimal change over time and a need for activities designed to change infrastructure and culture



Methods

- Thirty-two women faculty in the engineering and sciences fields discussed barriers to recruitment, retention and advancement
- Participants responded to a 24-item questionnaire and questions regarding mentoring
- Activities suggested in the questionnaire were derived from the literature on women scholars in S & E



Results

Participants agreed (ratings of 4 & 5) that the following activities would be effective:

- Devising specific career plans and educating department chairs and area committees regarding issues of equity
- Improving access to child care
- Facilitating dual career couple employment opportunities and
- Conducting exit interviews using professionals external to the institution



Results

Additional Activities:

- Stopping the tenure clock during childbearing years
- Providing funding to support scholarly efforts
- Provision of leadership training
- Clear identification of opportunities for advancement and identification of specific criteria for promotion and tenure
- Reduction of the “housekeeping syndrome” and the development of a strong advocacy program



Results on Mentoring

- Seventy-Six percent (N=30) of participants did not find their mentoring experience valuable in relation to their career
- Appointed mentors were limited to the institution of employment and frequently from another field
- Mentors were not rewarded and not actively involved
- Reliance on a single person to meet all professional needs was perceived as unrealistic



Results on Themes

- Themes from the small group discussions were categorized into the following three groups:
 - Data
 - Structure
 - Climate



Discussion

- Identification of strategies by women in academic S & E
- Data reveals present mentoring approaches are not effective
- Model of Advocacy
- The design of new activities

Activities Designed to Diminish Barriers to Success: Responses of Women Faculty in S&E (N=35)									
					4.5 - 5	4.0 - 4.49	3.5 - 3.9		
Structural Barriers					Cultural Barriers				
Activity	M	SD	Response to Items (# & %)	Desire Participate in Activity (# & %)	Activity	M	SD	Response to Items (# & %)	Desire to Participate in Activity (# & %)
					Devise a career plan for women in S&E	4.5	0.75	34/97%	27/77%
					Provide seminars for dept. chairs on equity	4.6	0.6	33/94%	24/69%
					Institute dual career program	4.5	0.78	35/100%	20/57%
Funding for startup packages	4.2	0.96	33/94%	24/69%	Educate area committees	4.2	1	35/100%	22/63%
Funding for summer research grants	4.0	1.1	35/100%	24/69%	Conduct exit interviews-external	4.2	0.98	35/100%	25/71%
Funding for travel to conferences for consultation, etc.	4.1	1.05	35/100%	29/83%	Improve campus child care options	4.1	0.86	35/100%	13/37%
Grant writing seminars	4.1	1.02	35/100%	25/71%	Stop tenure clock for childbearing	4.1	1.17	35/100%	13/37%
Establish Visiting women S&E scholars program	4.2	0.93	35/100%	26/74%	Develop database of gender equity	4.2	1.01	34/97%	24/69%
Develop term professorships for 5-6 women faculty in SEM	4.0	1.2	35/100%	25/71%	Meet with area committee	3.8	1.27	35/100%	24/69%
Develop policies/procedures that would encourage the hiring of dual career couples	4.0	1.0	35/100%	24/69%	Develop website for women in S&E	3.6	1.2	34/97%	21/60%
Provide leadership workshops	3.8	1.2	34/97%	24/69%	Provide Educational support for teaching	3.7	1.4	35/100%	25/71%
Hold monthly lunches with administration	3.6	1.3	35/100%	25/71%	Provide clerical support to facilitate research	3.9	1.36	35/100%	24/69%
Recognize S&E success at seminars	3.7	1.2	35/100%	21/60%	Hold mandatory sexual harrassment workshops	3.9	1.22	35/100%	23/66%
Advocacy	3.9	0.99	35/100%	29/83%	Require SEM women to be	3.2	1.23	35/100%	22/63%



References
