

CONFERENCE EVALUATION

Summary of Findings: Pre-Conference and Post-Conference Surveys

NSF Women in Engineering Leadership Development Conference
Cocoa Beach, Florida

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Summary of Findings
Pre-Conference and Post-Conference Surveys
NSF Women's Engineering Leadership Development Conference
Cocoa Beach, Florida

INTRODUCTION

This report presents pre- and post-conference survey results for the NSF Women's Engineering Leadership Conference in Cocoa Beach, Florida in April 2005. This conference is part of a larger series of conferences sponsored by the Women in Engineering Leadership Institute, whose primary mission is to facilitate institutional change from the "grass roots" and to ensure that a larger pool of women engineering faculty is ready to enter the academic administrative ranks. As part of this mission, the conferences are designed to ensure that women have equal access to the knowledge, preparation, and mentoring required for assuming leadership positions by fostering the training and networking of women across all types of academic institutions.

The series of conferences, funded by the National Science Foundation, the University of Utah, the University of Texas El Paso, the University of Connecticut, Guelph University, Canada, Syracuse University, Louisiana State University, and the University of Central Florida, includes two professional development conferences for women engineering faculty interested in exploring academic leadership opportunities; two advanced leadership conferences for women engineering faculty who are seeking more advanced, specialized training; and the establishment of a virtual (digital) presence for the Women in Engineering Leadership Institute as a web site¹ to highlight the professional development conferences, provide information on electronic mentoring, disseminate training materials and assessment results, and provide links to other similar organizations.

This conference was the second of two **Leadership Development Conferences** to be held regionally and structured as 3-day events. The conferences are modeled in the style of the Gordon Conferences, with daily activities and discussion forums. The conference mission is to inspire women in engineering to careers in academic leadership. While each of the Leadership Development Conferences may choose a slightly different theme, all of the conferences are intended to assist participants in examining various leadership models, roles and positions in academia, responsibilities of leadership positions, and the types of skills needed for such positions. The conferences are organized to include several common modules geared towards disseminating basic information on:

- The types of leadership roles, both positional and non-positional, that can be assumed and the individual career paths that can be taken toward these leadership roles;
- The development of a network to encourage and enhance relationships that will extend beyond the meeting; and,
- Exposure to the types of skill needed for successful leadership.

One of the key features of each of the Leadership Conferences is the inclusion of current or past women engineering leaders as speakers and panelists. The inclusion of speakers with firsthand

¹ <http://www.weli.eng.iastate.edu/index.asp>

experience was a highlight of the 1st Women in Engineering Leadership Conference held in October 2000. The hosting institution for each conference is responsible for the development of specific regional theme activities and coordinating the logistics of the conference.

The Florida Conference program blended philosophical and career-related discussions with other faculty and current women administrators with an introduction to certain types of leadership skills. The conference began with introductions by the NSF ADVANCE program officer and the WELI grant PI. From there, conference participants joined in a “Getting to know each other” poolside chat. The following day, panel sessions were held on positions associated with upper administration, department chairs, and alternative leadership roles. The focus of the second full day was on skill development. The agenda included presentations on negotiation skills, budget related issues and media training. The final day focused on case studies involving legal issues.

A total of 44 women attended the conference with nearly every field of engineering represented (Table 1). Approximately 96 women applied for the conference or were nominated by deans, chairs or prior leadership workshop attendees. Participants were selected based upon years of academic experience, evidence of diversity activities and commitment, and institution represented.

Table 1. Participants by Eng. Fields

Field	Frequency	%
Biomedical Eng	4	9
Chemical Eng	4	9
Civil & Envir.	8	19
Electrical	6	14
Industrial	4	9
Mechanical	12	28
Other ¹	5	12
Total	42	100

¹. Fields with fewer than four participants were collapsed to protect the confidentiality of responses. Collapsed fields include Biological Agricultural Engineering; Material Science; Engineering.

The conference attendees were surveyed twice, once before the conference and once after the conference. The actual survey instruments are included in Appendices C and D. All of the attendees completed both the pre-conference and post-conference evaluation surveys. This report summarizes the results of the pre- and post-conference surveys.

PRE-CONFERENCE SURVEY

The pre-conference evaluation survey was divided into two main sections: demographic and personal assessment and questions aimed at eliciting perceptions of leadership issues and expectations for conference outcomes. Many of the questions involved respondents providing extended answers. These responses can be found in their entirety in Appendix A.

Demographics

From the pre-conference survey (Table 2), nearly 70% of the participants reported they were married with approximately 72% having one or more children. Nearly everyone indicated that their father worked fulltime and 67% had a working mother. Nearly 90% of the conference participants attended public high school. The majority reported receiving tenure within the last 10 years and 27% identified themselves as full professors. Nearly all of the participants indicated that their home campus was either a balanced teaching-research institution or a major research institution. Participants also reported spending an average of 13.6% of their time on issues related to representation of girls and women in engineering. Finally, approximately 60% of the attendees had received educational grants such as an NSF REU Site or supplement, curriculum development or instruction grant, a Lilly Teaching Fellow, or a GAAAN.

Table 2. Participant Demographics

Demographic	
Married (% Yes)	69.0
Have 1+ Children (% Yes)	72.1
Father Worked Full-Time (% Yes)	95.5
Mother Worked Full-Time (% Yes)	67.4
Attended Public High School (% Yes)	88.1
Received Tenure Within 10 Yrs (%)	88.6
Full Professors (%)	27.3
Type of Institution (%):	
Primarily Teaching	7.1
Balanced Teaching-Research	38.1
Major Research Campus	54.8
Awarded an Educational Grant (% Yes)	58.1
Time Spent on Women/Girls Eng. Issues (%)	13.6

Participants described themselves as loyal, ambitious, high achieving, intelligent, with a high degree of autonomy and independence (Table 3). They also see themselves as compassionate, resourceful, highly adaptable, energetic, and possessing good interpersonal skills. Participants generally described themselves as having low self-centeredness and loneliness (mean of 2.4, 2.0).

Table 3. Participant Self-Descriptions

Aspect	Mean (1=Low; 5=High)
Loyalty/Commitment	4.2
Independence	4.4
Perseverance	4.0
Autonomy	3.9
Energy	3.8
Perceptiveness	3.9
Initiative	4.2
Adaptability	4.1
Interpersonal Skills	4.0
Intelligence/Related Aptitudes	4.1
Compassion	4.0
Resourcefulness	4.0
Curiosity	3.9
Ambition	4.1
Self-discipline	3.5
Achievement	3.5
Self-awareness	3.9
Intuition	4.0
Self-confidence	3.6
Kindness	3.9
Generosity	4.0
Creativity	3.8
Leadership	3.9
Tolerance	3.5
Risk-taking	3.4
Humor	3.8
Assertiveness	3.6
Spontaneity	3.1
Sociability	3.4
Physical Appearance	3.0
Patience	3.1
Self-centeredness	2.4
Loneliness	2.0

Nearly all the participants (~89%) reported that mentoring was important or very important for career advancement in academic administration (Table 4), with nearly 63% reporting they had no mentor themselves. Slightly more than half the participants were currently serving as a mentor. Attendees were also asked if they were interested in becoming department chair. Twenty-seven percent responded no, 37% indicated yes, and 35% indicated they were unsure.

Of those responding no, primary reasons given as a sense there was too little return on the investment of time and energy it took to do the job or the lack of a positive environment or the university support necessary to ensure success, *“At this time I do not think I am interested in a department chair position. It seems to be a very stressful job being caught between the dean and the faculty. Almost like serving two bosses.”* Of those responding yes, most identified a desire to introduce new perspectives and shape the future as the primary reason for their interest in becoming department chair, *“Yes. I am unhappy with many features of current departments:*

climate, equity issues, mentoring/treatment of junior faculty; I would like to address these issues.”

As noted earlier, however, the largest proportion of those responding indicated uncertainty about becoming department chair. The most frequently cited concern was the perceived stress and extensive time commitments associated with the position. A number of participants also stated concerns regarding departmental climate, “

“Not sure - ambivalent at this point. I am hoping that I will learn more about this at this conference! At my university, the chair has little power (and few perks - no reduced teaching load, etc.), and it is not absolutely essential for future leadership positions (our current Dean was never a Dept. Chair). ..Most of the chairs here seem to think it is a thank-less job that eats up too much time...”

Table 4. Career-Related Demographics

Aspect	
Mentoring Important/Very Important	88.6
Have a Mentor (% Yes/No)	37.2/62.8
Am Currently a Mentor (% Yes/No)	59.1/40.9
Interested in Becoming Dept. Chair:	
No	27.9
Unsure	34.9
Yes	37.2

Attendees were also asked to identify the two most important prior experiences for chairs (Table 5). Many prior experiences were identified and these could be organized into four categories: management experience; academic experience; administrative experience, and leadership experience. Many participants felt that building and running a large research program or complex initiative provided critical experience in working with teams and developing and managing budgets. Experience working within and knowledge of the department and campus governing structure was also cited as critical for developing a broader sense of faculty talent and performance, a deeper knowledge of policies, programs, and procedures, and a better understanding of the needs of the institution. Interestingly, many participants indicated a need for departmental leadership to have “gone through the ranks.” That is, to have progressed from assistant professor to full professor through the normal academic process (versus being hired in directly from industry).

Table 5. Two Most Important Prior Experiences for a Chair

Identified by Most Participants

- Management Experience
 - Managing large groups
 - Mentoring
 - Conflict resolution experience
- Academic Experience
 - Active participation in and successful coordination of Dept or Academic Senate Committees
 - Successful achievement of the various academics ranks
- Administrative Experience
 - Prior experience with staff and/or personnel issues
 - Budget experience
- Leadership Experience
 - Actual leadership training

In describing ways in which the campus fostered leadership experiences, nearly all of the respondents indicated either their campus had no such opportunities or they had no idea what options were available, “*None that I know of besides sending individuals to conferences such as this.*” At the university level, however, several participants noted that there were sometimes opportunities available through service on important committees, “*I can't tell that it does. I get put on a lot of Provost's committees, but I have no idea if that means I'm being groomed; it's mostly involvement in service and policy shaping, not mentoring or training. Both are needed, however, and at my institution, the former is utterly lacking. When I was preparing for a major NSF Center site visit, I got a LOT of mentoring and training and rehearsals with the Dean of our School of Engineering, who was himself an NSF Center Director. That was invaluable, but only became available once I had gotten through 3 levels of peer review and into the small circle of site visit finalists.*”

When asked to identify a single prior experience they would look for in candidates for a dean's position (Table 6), 69% identified serving as a department chair. When asked to identify what they thought their colleagues looked for in a candidate for a dean's position, again the majority identified serving as department chair.

Table 6. Key Prior Experiences for a Dean

<i>Prior Experience Participant Most Likely to Look For:</i>	%
Chair of Ac. Senate Com.	2.0
Dept. Chair	59.0
Dean/Assoc. Dean	22.0
Other	17.0
<i>Prior Experience Colleagues Most Likely to Look For:</i>	%
Chair of Ac. Senate Com.	---
Dept. Chair	72.0
Dean/Assoc. Dean	14.0
Other	14.0

Expectations and Perceptions

Attendees were also to identify two specific outcomes participants desired from the conference (Table 7). The responses (provided verbatim in Appendix B) generally fell into the same categories used to classify responses to a similar question for prior leadership conferences. Nearly all participants identified some aspect of career advancement as one, and sometimes both of the desired conference outcomes. The majority of participants also identified development of leadership skills as the one of the most important outcomes desired.

Table 7. Briefly describe two specific conference outcomes you would like:

CATEGORY	EXAMPLE PARTICIPANT RESPONSES
CAREER ADVANCEMENT	<p><u>Networking and Mentoring:</u> “...Of primary interest to me is improving my leadership skills and becoming part of a wider network of women engineers in academia.”</p> <p><u>Pathways to Administration:</u> “What are the typical Pathways to Administration? What is nontypical and does it matter?”</p> <p><u>Understanding Administrative Jobs:</u> “What are the challenges [of administrative positions] and how to overcome them.”</p> <p><u>Career Preparation:</u> “What kinds of things should I be doing at this stage in my career (Harvard Management Programs, Bryn Mawr, etc.); What kinds of things should I be reading?”</p>
LEADERSHIP SKILLS	<p><u>Leadership Potential:</u> “I would like to understand more about leadership skills and how to be a better leader. I am also interested in life/work balance and situational leadership.”</p>

Participants were also asked to identify one question they would like to have answered by deans and chairs during their respective discussion sessions (Table 8). These responses were then provided to speakers prior to the conference. Participant questions tended to be organized along two dominant themes: the development of leadership skills and issues associated with career advancement. With respect to leadership skills, participants were interested in how to lead change among faculty with disparate viewpoints and how to be an effective manager. As with prior conference responses, this issue of effective management arises mostly with respect to workload balancing between faculty members. Participants were interested in hearing chair perspectives related to career preparation for administrative positions such as chair and trajectory issues such as balancing research and service given that someone is chair. By far, the most frequent questions were related to effective management practices.

Table 8. Identify one question you'd like discussed by dept. chairs:

CATEGORY	EXAMPLE PARTICIPANT RESPONSES
LEADERSHIP SKILLS	<p><u>Leading Change.</u> <i>“How do you contribute to a positive morale in your department?”</i></p> <p><u>Principles of Effective Management.</u> <i>“[What are] creative approaches: to rewarding healthy, active, contributing faculty; to motivating less motivated faculty; to preventing a hostile environment/culture; leadership.”</i></p>
CAREER ADVANCEMENT	<p><u>Career Preparation.</u> <i>“What are different experiences that you found to be critical for a Chairperson? What are those that you wish you had?”</i></p> <p><u>Career Trajectory.</u> <i>“Has being a department chair, so far, been beneficial to your career (as an engineer with a research program, and as a leader)?”</i></p> <p><u>Why Chair?</u> <i>“Why did you want to be a chair?”</i></p>

The questions respondents identified for deans also included two categories of information related to leadership skills and career advancement (Table 9). Participants were looking for information related to the types of leadership skills deans had relied upon to motivate change and the ways in which deans were able to collectively manage college resources. Participants were also interested in a dean’s perspective about the experiences needed for, and the characteristics of a successful campus leader. By far, the largest numbers of questions posed by respondents were related to career preparation.

In addition to the career advancement/leadership questions, there were also a number of questions related to moving women up through academic leadership roles and recruitment and retention of women; this category of questions has been labeled as “Best Practices.” In these questions, respondents were looking for successful examples of activities leading to change that could be transferred to their home campuses. All of these questions posed to the deans in this

category related to their role in, or suggestions for improving the climate for women in engineering. Although it might seem to be somewhat unusual to ask about best practices under the circumstances of this conference, the responses may be indicative of a frustration related to climate-oriented issues/solutions on home campuses or a willingness to initiate institutional change as a non-positional leader given new ideas.

Table 9. Identify one question you'd like discussed by academic deans:

CATEGORY	EXAMPLE PARTICIPANT RESPONSES
LEADERSHIP SKILLS	<p><u>Leading Change.</u> <i>“How do you articulate a vision for your College, use it in your decision making process, and bring the various constituents (faculty, students, staff, alumni, upper administration, industry,..) on board?”</i></p> <p><u>Principles of Effective Management.</u> <i>“How do you juggle the shrinking budget with increasing enrollment in a science and engineering college?”</i></p>
CAREER ADVANCEMENT	<p><u>Career Preparation.</u> <i>“What are the characteristics or specific qualifications that you look for in leaders within your college?”</i></p> <p><u>Career Trajectory.</u> <i>“I think I would make a good VP of research or associate dean of research. How can I prepare myself for such a position?”</i></p>
BEST PRACTICES	<p><u>Women in Engineering.</u> <i>“How to encourage/support leadership roles for women.”</i></p>

Finally, participants were also asked to identify the three most important characteristics of good leadership. Table 10 summarizes the responses into three categories in order of most responses received. The first category represents indicates those characteristics noted by the most participants, with second and third categories of characteristics each being identified by fewer participants. The characteristics most often identified in association with good leadership were good communication skills, both as listener and a converser, personal values that included honesty and fairness and being willing to set an example of ethical behavior, and having a future vision.

Other key characteristics noted by participants included the ability to make informed decisions and a respected reputation in scholarly and personal conduct. Among the characteristics identified by 5 or fewer participants included an ability to foster consensus, to build teams by

incorporating multiple perspectives, and possessing good organizational skills, dedication, persistence and the ability to problem solve as characteristics of good leadership.

Table 10. The 3 Most Important Characteristics of Good Leadership

<i>Identified by 10 or more Participants</i> <ul style="list-style-type: none">- Good communicator/listener- Honest/Fair/Ethical/Strong Values- Has a vision
<i>Identified by 5 to 10 Participants</i> <ul style="list-style-type: none">- Ability to make and implement informed decisions- Respected in the research field (scholar)
<i>Identified by 5 or fewer Participants</i> <ul style="list-style-type: none">- Able to foster consensus/build team- Creative- Organized- Persistent- Problem solver

POST-CONFERENCE EVALUATION SURVEY

The post-conference evaluation survey was divided into three main sections: questions aimed at rating specific conference events and speakers, questions aimed at eliciting qualitative assessments related to conference goals and objectives. As with the pre-conference survey, many of the questions involved respondents providing extended answers. These responses can be found in their entirety in Appendix B. Here, the focus is on general trends and categories of assessment.

Conference Event Ratings

Participants were asked to rate panel discussions and speaker presentations on a scale of 1 to 5, with 1 representing *Very Helpful* and 5 representing *Not Helpful*. In Table 11, the results for the panels are shown and in Table 12 for the speaker presentations. Most of the mean ratings for the panel events and speakers indicate that attendees generally found them very helpful. The greatest variability in responses were found in participant assessments related to the panel on alternative leadership roles in academe, the women and gender session, the media training and the discussion on balancing and growing the budget. However, in general, most respondents found these sessions helpful to very helpful. The speakers were also rated highly, with the presentation by Susan Blanchard (Florida Gulf Coast University) rated most highly.

Table 11. Evaluation of Conference Panels/Events (N)

Event	1 <i>Very Helpful</i>	2	3	4	5 <i>Not Helpful</i>	Mean
Chairs Panel	25	14	1			1.4
Upper Admin	29	9	3			1.4
Alt. Leadership Roles	12	14	9	3	2	2.2
Social Issues: Gender	15	16	7	1	2	2.0
Negotiation Skills	38	3				1.1
Media Training	29	9	2	1		1.4
The Budget	29	5	6	1		1.5
Legal Issues	21	12	3			1.5

Table 12. Evaluation of Conference Speakers (N)

Event	1 <i>Very Helpful</i>	2	3	4	5 <i>Not Helpful</i>	Mean
Jacqueline Whitmore	14	13	9	3	2	2.2
Mary Anderson-Rowland	20	8	9	1	2	1.9
Susan Blanchard	21	9	4	1		1.6

Conference Outcomes

To assess conference outcomes, participants were asked in a variety of ways to evaluate conference goals and objectives. The first question on the survey asked conference attendees to describe two specific personally important conference outcomes. As with previous conferences, nearly every participant identified some aspect of networking and/or the experiential effect of seeing and talking with role models as the most personally important conference outcomes.

With respect to networking, participants expressed significant appreciation at the opportunity for *“Networking and exchanging “stories” with other women. Ideas/skills gained in negotiating and other interactive sessions.”* and the sense of belonging: *“I have got[ten] to know many women in academics (engineering) and developed a friendship with several women. I have learned [much] from the workshop and [have] become aware of many available resources.”* that the conference imparted to them. Attendees also noted the value of the sharing of experiences of other women.

With respect to the availability of role models for discussion, participants noted that the *“opportunity to interact informally with current women chairs and deans [provided reaffirmation] of my skill set and level of preparation for an upper level position.”* Many participants noted they felt that the conference increased their awareness of the skills needed for successful leadership: *“[One personal outcome was] a raised awareness of all/some of the issues and skills needed for advancing in higher education administration.”*

Participants were also asked to assess specific conference goals (outcomes) in terms of their personal experience at the conference. These results are shown in Table 13. Participants were clear that attendance had made them feel part of a stronger network of women engineering professors. Participants were in strong agreement that their understanding of leadership in academia and possible administrative paths had increased as a result of attending the conference. Participants generally expressed continued or new interest in an administrative position such as department chair, dean or provost, or research center director. Conference attendees also indicated strong support for additional conferences of a similar nature.

Table 13. Evaluation of Conference Outcomes (N)¹

Conference Outcome	1	2	3	4	5	Mean
Feel Part of Stronger Network	30	8	3			1.3
Better Understanding of Ac. Leadership	32	9	1			1.3
Better Understanding of Admin. Paths	25	12	3			1.5
More Interested in Admin. Positions	8	12	16	4	1	2.5
Less Interested in Admin. Positions	1	5	17	9	9	3.5
More Interested in Leadership Positions	16	15	9	1	1	2.0
Less Interested in Leadership Positions		1	10	13	18	4.1
Would Encourage Others to Attend Similar Conf.	41	1				1.0
Would Support Holding Additional Conf.	42					1.0

¹ Scale: 1=Strongly Agree; 5=Strongly Disagree

Participants were also asked to identify those aspects of the conference they found most and least helpful. In general, responses can be organized into the broad categories shown in Table 14. In terms of the top three most helpful aspects, participants cited the availability of and interaction with role models, the opportunity for networking, and the concentration of skills building sessions. Many attendees found the skills development sessions particularly useful, *“Specific tools from the 2nd day-excellent sessions [were most helpful]. I feel I can negotiate much better (hope so)...”* Many participants also reported that interacting with role models was also very useful, *“Meeting with other women faculty [was the most helpful]-seeing that no one has followed any one path.”*

Table 14. Top Three Most and Least Helpful Aspects (N)

Aspect of Conference Found Most Helpful:
<ul style="list-style-type: none"> ▪ Interaction with Role Models (6) ▪ Networking (10) ▪ Skills Development (21)
Aspect of Conference Found Least Helpful:
<ul style="list-style-type: none"> ▪ Gender Presentation (8) ▪ Conference Facilitation (6)

There were very few aspects of the conference that participants found least helpful. The least helpful comments focused mostly on a specific session, Social Issues: Gender, and the general need for better facilitation of speaker time and discussion.

A few illustrative comments related to each of the categories are shown below (all responses can be found in Appendix B):

What aspect of the conference did you find most helpful?

“Media training/awareness, negotiating, interaction/discussion with peers.”

“Specific tools from the 2nd day-excellent sessions. I feel I can negotiate much better (hope so). I also better understand the need to become a full professor first before pursuing a chair/dean position...”

“Sharing experiences of career paths with other women in the academia.”

What aspect did you find least helpful?

“There were several "ramblers" who tried to dominate the work groups Friday afternoon with issues specific to their own situation.”

“Social and gender issues-not because it was not prepared well but because these issues are not new.”

Similar to prior workshops, a number of participants expressed a desire for slower (or fewer) workshops as a way of gaining additional free time for networking and one on one interactions. A fair number of participants also indicated they would have preferred more aggressive facilitation. In general, however, other than the *Social Issues* presentation and the need for stronger facilitation, there were virtually no other aspects of the conference that were identified as least helpful.

Attendees were also asked to assess how the conference had changed their perceptions or attitudes about positional and non-positional leadership roles. In general, women tended to acknowledge that the workshop had helped them develop a broader perspective on types of leadership roles available, particularly non-positional and center director types of positions. Several women spoke of feeling better prepared and “*going in with their eyes opened.*” Other comments on this question included,

“I realized that my role as Research Division Director is a significant role and I should embrace it-make it my own-lead as though I was born to the role-don't wait for permission or encouragement to lead...”

“It did not change my perceptions but it gave me quite a lot of specific lessons, which is what I was after; also seeing all women leaders is highly encouraging...”

A few women spoke of the need to become full professors before really pursuing positional leadership opportunities and expressed some concern or reservations about moving into leadership,

“I am still uncertain about aggressively pursuing leadership roles but sure that when I do make a decision-it will be based on a better understanding. I am convinced I must channel efforts into being promoted to full prof.”

“It convinced me that I may not be cut out for administrative leadership. It also reaffirmed my belief that other leadership positions are important.”

The interesting thing about these comments is that while they express some hesitation about positional leadership, they are remarkably positive about the need for leadership and their ability to use non-positional leadership opportunity to achieve. In this regard, the workshop seems to have been very successful at balancing motivation with opportunity.

Finally, participants were asked how the conference helped to prepare them to overcome the barriers to advancement in leadership positions at universities. Women spoke of the need for reinforcing “*the role of mentors*”, of having achieved “*greater self-awareness*”, and identifying and sharpening key leadership skills “*Negotiating and growing the budget [sessions] were both*

encouraging...take control of the situation and don't get discouraged.” The majority of participants expressed a great deal of enthusiasm and appreciation for the skills development workshops.

Suggestions for Future Conferences

Attendees also offered a wide range of suggestions to enhance future conferences. In Table 15, the most frequently mentioned suggestions are identified. A large number of participants identified the need for a conflict resolution skills building session and the need to teach women how to become effective mentors. Informational related sessions that would be helpful in future conference include greater elaboration on the issues and efforts aimed at center/institute leadership, how to develop a strategic plan, how to develop a career plan and negotiating career-life balance.

Table 15. Suggestions for Future Conferences

Skills Development:
<ul style="list-style-type: none"> ▪ Conflict resolution ▪ Effective mentoring
Informational Sessions:
<ul style="list-style-type: none"> ▪ Developing a career plan ▪ Strategic Planning ▪ More information on center/institute leadership positions ▪ Work-life balance
Program Organization:
<ul style="list-style-type: none"> ▪ Improved conference facilitation ▪ More case studies

APPENDIX A: PRE-CONFERENCE SURVEY RESULTS

Extended Participant Responses

NSF Women's Engineering Leadership Conference, Cocoa Beach, Florida

1. Briefly describe two specific things you would like to get out of this conference:

<ul style="list-style-type: none"> I have been successful in leadership positions in my own technical community, but I did get to choose whom I was going to work with in that setting and I enjoyed the experience a great deal. I would like to see whether an administrative position in my own institution could be the right career path for me, and am curious to see what the issues are. I am also curious as to how well I can function in a group when I do not have the luxury of selecting those I will work with.
<ul style="list-style-type: none"> What are the typical Pathways to Administration? What is nontypical and does it matter? How to prepare for an administrative position - What kinds of things should I be doing at this stage in my career (Harvard Management Programs, Bryn Mawr, etc.); What kinds of things should I be reading?
<ul style="list-style-type: none"> 1. Methods & advice for career advancement in department where, as the single female professional, advancement is still perceived by many as a 'token gesture'. 2. What qualities and experiences do I need to develop to become chair?
<ul style="list-style-type: none"> pathways to career advancement, additional contacts
<ul style="list-style-type: none"> networking and leadership discussions
<ul style="list-style-type: none"> negotiation skills, tips on how to improve leadership skills
<ul style="list-style-type: none"> experiences of women in administration; balancing admin & research/teaching participation
<ul style="list-style-type: none"> Pathways to career advancement in administration; Development of a support network
<ul style="list-style-type: none"> (1) how to be a good administrator, from chair to dean; and (2) what type of expectation one should set to achieve the goal of being an administrator (e.g., as a chair, as a dean, etc.)
<ul style="list-style-type: none"> Identify what pathway would work best for me. Develop strategies to "get there".
<ul style="list-style-type: none"> Should I become a chair, how to be a good chair
<ul style="list-style-type: none"> Contacts with successful women engineering leaders and practical tips on what can be done to enhance one's chances of having access to leadership opportunities
<ul style="list-style-type: none"> I would like to learn from other women's experiences on how to be an effective administrator in academia. Of primarily interest to me is improving my leadership skills and becoming part of a wider network of women engineers in academia.
<ul style="list-style-type: none"> How to be a good research center director/chair
<ul style="list-style-type: none"> How to obtain a leadership position (chair); how to manage/deal with non-cooperative faculty members who are not team players.
<ul style="list-style-type: none"> How to advance in administrative careers; Developing programs for attracting women to engineering programs and careers; How to motivate women students into academic careers;
<ul style="list-style-type: none"> 1. Determine if I am best suited for leadership via the administrative route or within my existing faculty role; 2. Understand how to prepare myself to compete for leadership positions
<ul style="list-style-type: none"> what are the challenges and how to overcome them.
<ul style="list-style-type: none"> how to be a good chair, conflict resolution skills
<ul style="list-style-type: none"> 1) pathways to administration , 2) management styles effective to be a good chair
<ul style="list-style-type: none"> improvement of career and leadership skills in general, learning what I don't yet know; I am not going into it with a particular narrow agenda
<ul style="list-style-type: none"> improvement of career and leadership skills in general, learning what I don't yet know; I am not going into it with a particular narrow agenda
<ul style="list-style-type: none"> I am interested in exploring my leadership potential in an academic context. I am strongly considering career advancement in administration - potentially at the university level - so I am particularly interested in hearing about pathways to those types of positions, e.g. provost. I consider myself to be a visionary person. I would like to build my leadership skills so that I can convince others to share in and implement my vision!
<ul style="list-style-type: none"> finding out the rewards and drawbacks of an administrative career path; networking
<ul style="list-style-type: none"> how to communicate effectively, how to handle departmental budgets
<ul style="list-style-type: none"> the characteristics of good administrators & impacts of motherhood on ability to obtain/retain an admin position
<ul style="list-style-type: none"> Do paths to deans/admin always start with department chair? What other pathways are good

options?
<ul style="list-style-type: none"> • How to be a good chair without giving up on research; Advice for managing faculty (herding cats) in a large research center
<ul style="list-style-type: none"> • A network of women academics at all levels that have a tangible mechanism for working as a team to advance the careers of women in engineering at all levels (admin, advisory boards, outside offers, hiring, tenure, etc)
<ul style="list-style-type: none"> • Career advancement in administration, coping with stresses and setbacks of academic leadership
<ul style="list-style-type: none"> • pathways to career advancement, How to handle gender equity issues
<ul style="list-style-type: none"> • 1. Networking with other women (I am the only one in my department!); 2. See what it takes to advance in administrative positions.
<ul style="list-style-type: none"> • what it takes to be a great chair; identify what skills I need to acquire to advance
<ul style="list-style-type: none"> • Strategies to build my sense of self worth; a plan for the next 3 years of my career
<ul style="list-style-type: none"> • As I may ultimately be interested in an administrative position, I would be interested in learning about different pathways to this option, including how to deal with people both above and below you. However, given that my current focus is research, I would also be very interested in learning about the experiences of other more senior women related to success in research.
<ul style="list-style-type: none"> • Identify additional opportunities for academic (and perhaps non-academic) leadership and/or career advancement, effective communication promoting buy-in from colleagues
<ul style="list-style-type: none"> • Pathways and needed credentials to career advancement in administration. Strategies for obtaining resources within university for initiatives.
<ul style="list-style-type: none"> • What kinds of things should I be doing in preparation to be a leader (at department or administrator level)? I see so many areas for improvement at the department, college, and university levels. I have made attempts at pointing them out to who I believe are the right people. But, I am mostly ignored and I believe they are starting to see me a complainer. How can I more effectively communicate my ideas with out alienating people?
<ul style="list-style-type: none"> • How to network and get career advancement into administration; how to be taken seriously in business meetings as a female
<ul style="list-style-type: none"> • Best ways to share vision; leadership techniques such as being persuasive, assertive, etc.;
<ul style="list-style-type: none"> • How to be a good chair, networking
<ul style="list-style-type: none"> • I would like to understand more about leadership skills and how to be a better leader. I am also interested in life/work balance and situational leadership.
<ul style="list-style-type: none"> • Pathways to career in academic administration.
<ul style="list-style-type: none"> • learn from other people their career success, learn pathway to career advancement, meet people and make friends.

2. Identify one question you would like to see discussed by *upper administrators* at the conference:

A candid discussion of what the major challenge they have faced and which aspect of their job they have truly enjoyed.
What are the skills necessary to hold an administrative position
How do you balance life and career in what I see as a very demanding job
What are the characteristics or specific qualifications that you look for in leaders within your college?
How does the shortage or lack of women role models within leadership effect both women and men in engineering colleges? If this is a serious concern, how is it being addressed?
Does your gender affect your ability to raise money in your position?
are they still able to keep up their academic work
what kind of skills do you need to be successful?
how do you realign a campus to constantly meet the need of constituents - program expansion vs program closures and appropriation based on performance
How can the university encourage, support and reward a diversity of contributors to the academic enterprise.
What qualities are they looking for in new administrators, how to be a good advocate for departmental needs while keeping University's overall goals in mind when conflicts occur (eg, shrinking budgets, reorganizations, disagreement with administrators vision,..)
What is the best time to transition to administration from science/eng?
What are some of the most worthwhile committees to participate on so that faculty can start to develop a network with upper administration and learn about the broader operations of their universities (in anticipation of future leadership opportunities)?
How do you stay connected with the faculty so that decisions made at the upper administrative level are understood and accepted by the faculty?
Does taking an administrative position more or less lock you into the administrative track?
How to deal with administrators who are openly hostile to diversity.
Improving career advancement paths for women
Project the short-term climate for openings in engineering leadership
what do you percieve as challenges for female faculty in male only departments and how have you addressed them
what are the biggest challenges in your job and how do you address them?
What was the best preparation to be an upper administrator?
what are the worst mistakes faculty should avoid if aiming for administrative posts
what are the worst mistakes faculty should avoid if aiming for administrative posts

How does one identify the appropriate pathway to academic administration at the university level?
What is most challenging about your job?
whether or not faculty members who are not fully promoted (i.e. associate professors) should take on department chair responsibilities
What makes an effective upper administrator
When/how did you learn to start thinking at a University level, rather than at a school level?
Keys to success of multidisciplinary centers that cross department and college boundaries
What are examples of creative incentives that departments have used to diversify their faculty so that it reflects the demographic makeup of the student and general population?
Steps taken at respective institutions to recruit and retain women faculty in sciences and engineering
How do you assess gender equity in engineering?
(For each one of the panelists) What is their understanding and contribution in the issue of equal opportunities for women in academia
What is the best part of your job - what is the worst
What recourse does a woman have against non-sexual harassment by male colleagues?
I would be interested in knowing what role they would like to see women in general and women engineers in particular play at their respective institutions.
How do you stay in touch w faculty, students? Is this important for an administrator?
How do you manage the immense demands on your time (meeting deadlines with unanticipated items added to the list daily?)
I think I would make a good VP of research or associate dean of research; How can I prepare myself for such a position?
what is the reluctance in promoting females into upper administration
What are the biggest challenges you have faced in administrative positions, and what are the most effective strategies you have learned to overcome those challenges.
What are some of the major obstacles in your career path?
What do you look for in selecting Academic Administrators
Special challenge faced by women in career path

3. Identify one question you would like to see discussed by *academic deans* at the conference:

A candid discussion of what the major challenge they have faced and which aspect of their job they have truly enjoyed.
What is the greatest challenge with being a dean
What have you found as the most valuable skill / characteristic for this position?
What are the characteristics or specific qualifications that you look for in leaders within your college?
Is there a perceived need to establish mentors for new faculty within your college? If so, how is this accomplished and is it generally successful?
How do you make personal connections with the faculty?
ways they mentor younger faculty re. leadership positions
same as 2
how do you juggle the shrinking budget with increasing enrollment in a science and engineering college
How to encourage/support leadership roles for women.
How do you articulate a vision for your College, use it in your decision making process, and bring the various constituents (faculty, students, staff, alumni, upper administration, industry,..) on board?
What was your career progression?
Why is there a discrepancy (that is secretly guarded), at some institutions, between what is expected in terms of performance (especially with regard to service and teaching) and what is actually rewarded in terms of merit raises? Regardless of good teaching and service, it seems that only the faculty with the highest research dollars get the significant raises -- if this is the case, then why wouldn't we all only pay attention to our research programs, at the detriment of the functioning of the departments and at the expense of our students' educations? This discrepancy provides mixed messages to the faculty, and may actually discourage young faculty from seeking out administrative opportunities and exploring their leadership options.
How do you treat all departments equally so that you are not biased to your home department?
How to effectively reward best practices while appropriately punishing noncooperative chairs/department without making it seem like they are being punished.
Quantifying and executing equity in teaching assignments/faculty evaluations/workloads/etc.
How to attract more women faculty into the engineering programs?
Differences between department head versus academic dean responsibilities
what do you perceive as challenges for female faculty in male only departments and how have you addressed them
what are the biggest challenges in your job and how do you address them?
What was the best preparation to be an academic dean?

what are the worst mistakes faculty should avoid
How does one prepare for leadership at the dean's level while maintaining a strong research program?
What is most challenging about your job?
Effective strategies for recruiting and retention
What makes an effective dean
How much of your time is devoted to fund raising?
Advice to chairs and center heads about good strategies in negotiating for resources
Pros and cons of spousal hires: how they are done, what has been successful, what are the benefits, what are the incentives, what are the problems, what are the negative impacts?
Should statistical evidence and numbers related to gender/diversity influence decisions to hire?
What are post tenure expectations for promotion and raise negotiations.
How deans assess the contribution of a woman in service, teaching and research; in order to identify her leadership qualities and promote her
What is your strategy for getting people to buy into your ideas or ideas that you would like people to buy into?
How much power does a female faculty have and how does it scare you.
What qualities do they possess that they believe was important for their success?
How do you balance the need for travel, fundraising with staying in touch with day-to-day college activities?
How do you split your time over major activities (fundraising, meetings, administration, new initiative development, etc)?
I think I would make a good VP of research or associate dean of research; How can I prepare myself for such a position?
what is the reluctance or hesitation if any for promoting or hiring a female into the deanship.
How do you make sure that resources are fairly distributed?
What qualities do you like to see in the department chairs in your college, and why?
What is the best advice you can give to a tenured female faculty member in engineering?
What characteristics do you look for in selecting members in an administrative team?
how to help them

4. Identify one question you would like to see discussed by *chairs* at the conference:

A candid discussion of what the major challenge they have faced and which aspect of their job they have truly enjoyed.
What are the responsibilities of a department Chair?
What are suggested methods to cultivate earned respect, without undue bias, amongst other chairs?
What qualities or special qualifications did you possess that caused you to be promoted to the level of chair?
How can women faculty within engineering establish an effective mentoring relationship with another member of their faculty?
How do you deal with personality conflicts within the department?
transition from faculty to chair (and possibly, back to faculty as some universities have chairs with term appts)
how do you know when you are ready?
how to motivate the faculty especially those tenured one in an institution with faculty union
Strategies for improving recruitment and retention of women faculty.
Why did you become a chair, what are the most rewarding and the most aggravating outcomes of the position?
What skills are important for being a successful chair?
Has being a department chair, so far, been beneficial to your career (as an engineer with a research program, and as a leader)?
How do you work through unpopular or controversial situations?
How do you deal with low performers?
Quantifying and executing equity in teaching assignments/faculty evaluations/workloads/etc.
How to mentor both male and female faculty.
How much of time is spent on routine administration versus effecting actual pedagogical change
what do you perceive as challenges for female faculty in male only departments and how have you addressed them
what are the most important things to know about leading a department and why
What management style works for female chairs of predominantly male departments?
how do you affect change given the inertia in a top-heavy department
How do chairs choose faculty members to "groom" for leadership positions, and how do I convince my department head to choose me?
What is most challenging about your job?
How to mentor untenured faculty

What makes an effective chair
How do you deal with "unproductive" faculty?
Strategies for handling difficult people, particularly faculty who may be highly valued for their technical achievements but who often cause HR or other problems.
Creative approaches: to rewarding healthy, active, contributing faculty; to motivating less motivated faculty; to preventing a hostile environment/culture; leadership.
Should mentoring of junior faculty be handled at department level or college level?
How do you balance administration, research, teaching, and family
What is their attitude towards the intricacies of being a woman faculty (i.e., more flexible hours) and how they deal with it come promotions time
What do you wish you had known or what skill do you wish you had had before becoming chair
How pushy do I have to be to get what is being given to my male peers? (Waiting for you to even things out doesn't work.)
In my experience, when my male colleagues go to my chair with issues, they are treated as being more serious than when I go - I see that I am perceived differently by my chair and my issues are somehow less important. I have also noticed that in the past I was assigned the jobs that my more senior male colleagues did not want. Did the female chairs on the panel experience anything similar? How did they deal with this? How do they deal with similar issues at their institutions?
How can one effectively delegate administrative responsibility to faculty so as to encourage buy-in, awareness (and free your time for curricular, development initiatives) - and yet protect faculty from administrative responsibility to promote their research & teaching?
How do you contribute to a positive morale in your faculty?
How can you be a leader when you are swamped by the daily necessities?
in general, how to overcome gender bias and what are the different or extra effort females need to undertake to promote oneself
How do you manage aggressive faculty members?
Would you recommend the chair position to others, and if so, what do you like about it?
Why did you want to be a chair?
What are different experiences that you found to be critical for a Chairperson? What are those that you wish you had?

5. What do you think are the three most important characteristics of good leadership (e.g., a good listener, excellent scholar, etc.):

Ability to listen to and work well with others. Good scholarship is important but to a degree, if the individual is self-confident it is not particularly important in my view
Good Communication Skills; Vision; Working with others
1. Ability to understand and appreciate diverse personalities, working to encourage each individual's strengths and goals; 2. Ability to make the hard decisions and sufficiently justify them amongst a sometimes difficult group, 3. Confident intelligence with a broad background
excellent scholar, organized, efficient (either in delegating work or doing it themselves)
consistency, emotional intelligence, intellectual intelligence
open-minded attitude, balanced decision maker, limited ego
scholarship, empathy, organization
excellent scholar; decisive; ability to work for the good of the group
good communication skill; decisions made based on data instead of emotion, and visionary; and fair and firm
Flexibility, creativity, good listener
Good people skills (includes listening and communication skills, patience, and be a good judge of character), good problem solving abilities, ability to be a catalyst for change
Have a vision, good negotiator, well-respected
Clear vision for the future, good communicator/ negotiator, well-respected scholar in their field
1) integrity, 2) interpersonal skills, 3) Always works "above board"
Excellent scholar, fair, visionary
Salesmanship, team-building, trust-inspiring
Good listener; Fair; Neutral to all
listener, consensus builder, facilitator
excellent scholar, fair and just, strong
honest/ethical, open-minded, forward thinking
1) being authentic, 2) being fair, 3) having vision of what to lead
having a strong vision based on the greater good for the constituency, sharing it with the constituency, and never giving up
Having a vision, being able to unite disparate groups to work toward a common goal, being inclusive and listening
doing things for right reasons, considerations of multiple perspectives, being a grown-up
excellent communicator, good listener, good manager of budgets
Camaraderie/approachable/good listener, ability to make decisions - especially the hard

decisions, ability to delegate & supervise
a motivator, a person who is able to get the best of of people, a good listener
integrity; good communication skills (inspirational speaker, attentive listener); has respect from colleagues on both research and teaching fronts
integrity, creativity, advocate for subordinates
Broad thinker, excellent communicator, respected scholar
Good time management skills, good interpersonal communication skills, ability to delegate responsibility
Vision, accessibility and critical thinking
integrity; clarity; good listening skills
Integrity, Vision, Energy
Scholarship is very important - it is difficult for colleagues in a research institution to see a leader as having skills if they are not excellent scientifically. Leaders should also be empathetic and able to see the views of others despite their own personal views. A leader should also be willing to deal with both good and bad situations. Telling a colleague about not being selected for something is a very important job, although it is less pleasant than telling the colleague that they have been selected.
vision, effective communication, appreciation/acknowledgement of individual's work in relation to team goals
Good listener, time management, enthusiasm/passion for organizations objectives
Have the ability to convey a vision, the ability to motivate, and the ability to make hard decisions
good listener; equitable treatment of all; be decisive and willing to take risks
1. Ability to share vision (get others "on board"). 2. Fairness. 3. Excellent, though not necessarily the best, competence in the field.
Keeping focus on key issues, running efficient and focussed operation, strong vision/plan for future directions
vision, honesty, perspective
1.Vision 2. Communication skills. 3. Accountable
interpersonal skill, management skill, passion

6. What do you think are the two most important prior experiences a department chair should have:

Should be familiar with the academic culture -- I have suffered a great deal as a result of a chair who had spent all his life outside the academia and was hired directly as a chair after he retired from his government post. Perhaps would be good if the individual has held an administrative type position such as grad/undergrad program directorship to see the level of commitment required by such an appointment.
Budgetary Skills and Issues; Scheduling and Managing Resources
1. Balancing political and academic issues without obvious solutions; 2. Managing a diverse group of people with frequently conflicting goals
negotiating experiences with people outside of the department, fundraising (for faculty and grad student stipend endowment funds)
proven management skills and leadership training
chairing a national committee, leading a research center
faculty member; member of some decanal or provostal level committees
leadership role in dept as associate head or chair of dept P&T comm; recognition as a superb research scholar
demonstrated achievement and vision (including execution)
Management of a significant project/group/committee or other organization beyond a research group (where the goals are common and there are few conflicts in resource allocations and personnel issues.). Significant experience with funding agency or national or international organization - e.g. rotating NSF program manager, etc. For our institution, close experience with undergraduate students beyond just classroom contact - e.g. mentor, advisor, club/organization advisor, etc.
Some administrative experience, some experience dealing with personnel issues
associate chair of grad/undergrad, pi on a major training/center grant
Some prior organizational / leadership experience (with large program grant, center, training grant, etc.) and experience in positions or on committees that provide interaction and networking opportunities with higher administration
1) Formal leadership and management training, 2) Has worked closely with both undergraduate and graduate students so that he/she understands student needs and concerns, 3) management of federally funded research projects.
Extramural funding research, supervising graduate students
Some leadership experience in which he/she was effective; mediation abilities.
professional experience, leadership at the committee level or other experience
1. established good academic record (research/teaching depending on requirement of institution); 2. interpersonal skills
promotion/tenure experience (chair of committee), managing budgets

Not sure? I imagine management and people skills but usually they are stature in science
1) rising through the ranks as a faculty member in the same type of institution; 2) having to work hard for some collective goal (group, subgroup, academic community)
Significant project management experience and leadership experiences outside of the department
leadership of groups of people (on committees, for example); implementation of large initiatives (research, curricular, etc.)
managing budgets, managing staff
faculty position to understand faculty, university-level committees to understand university culture & issues
should have directed a good sized lab at some point, should have experience with curriculum issues
a) some sort of management experience, b) experience interacting with dean or above in negotiating for resources
1) Managing a successful research group. 2) Creating a new program or initiative, which would give them experience with Administration and University procedures.
Manage multi-people research projects, teach large undergraduate classes, serve on important college committees reporting to administration
Mentoring experience with staff and students, managing research and teaching
Exposure to the everyday administrative operations of the dept./upper administration; Research and service active
conflict resolution; training in evaluation and development of staff/faculty
Running a research center and being a full professor
A department chair should have experienced both success and failure to be able to empathize with colleagues and students. A department chair should also have a good rapport with students prior to becoming chair. While prior administrative experience tends to be viewed as important, success as a department chair does not depend on previous experience but rather on the ability of the person to deal with people at higher levels.
dept/college/university involvement (in positions of responsibility, i.e. committee chair), involvement in national program-related organizations (i.e. IEEE, BMES officer, regular attendee at national meetings, etc.)
PI of major research projects involving collaborators and budgets to manage. Participation in teaching excellence through personal initiatives, local and/or national workshops.
Have the teaching and research record that you expect from your faculty
familiarity with departmental affairs; with the strength and weakness of the faculty and the program
1. Having been a faculty member. 2. Having good leadership training.
Experiences through committees, mentoring, water-cooler conversation, etc., that give a sense

of how the dept. has been operating, respect of colleagues
climbing faculty ranks to full professor, managing budgets
Administrative and Academic
some administrative duty, good research experience
Industry experience; Research experience

APPENDIX B: POST CONFERENCE SURVEY RESULTS

**Post-Conference Survey – Extended Participant Responses
NSF Women’s Engineering Leadership Conference, Cocoa Beach, Florida**

1. Briefly describe two specific things that you consider to be personally important outcomes of this conference:

<ul style="list-style-type: none"> • Ideas about alternative leadership roles. Media training/tips/do's and do not's. Avenues for budget growth within the institution
<ul style="list-style-type: none"> • Information enabling decision making, whether to pursue leadership positions. Meeting peers/networking
<ul style="list-style-type: none"> • Networking/Learning inside stories of other women in the field and find out how they tackle their challenges.
<ul style="list-style-type: none"> • Sharing experiences of other women
<ul style="list-style-type: none"> • Connecting/Networking with a group of awesome women. A raised awareness of all/some of the issues & skills needed for advancing in higher education administration.
<ul style="list-style-type: none"> • Network established/ Learned about workings of dept./administrators especially budget issues
<ul style="list-style-type: none"> • Learned new negotiating skills/Met several women who will become part of my network
<ul style="list-style-type: none"> • Learned about Deaning skills and ways to get this experience/Expanded my network.
<ul style="list-style-type: none"> • Meeting and getting to know other women in engineering/An insight into the information and skills needed to undertake leadership roles.
<ul style="list-style-type: none"> • Women can be reaching administrative success and personal success at the same time/There are a lot of women there who made it.
<ul style="list-style-type: none"> • Network of mentors, advisors, and new friends/Re-energization of my leadership quest
<ul style="list-style-type: none"> • Unquestionable value in all leadership positions of full prof status/rectify any budget issues/concerns/solutions at dept. level.
<ul style="list-style-type: none"> • Networking and exchanging "stories" with other women. Ideas/skills gained in negotiating and other interactive sessions.
<ul style="list-style-type: none"> • This was an excellent retreat for me to readjust. AT this stage in my career. It helped me to realize my worth and appreciate better the talents that I have to offer. I am now thinking about building my CU and preparing myself for academic leadership.
<ul style="list-style-type: none"> • First is the opportunity to really network with colleagues. I got lots of ideas of who to ask for help, advise, research direction. Second is validation of my recent decision to concentrate on getting a full professor appointment at my current university before moving on up in a formal sense.
<ul style="list-style-type: none"> • Understanding all of the issues faced by university administrators/networking with other women faculty.
<ul style="list-style-type: none"> • Confidence in ability to "take my turn" at being chair/Some specific information regarding negotiating, media, budgets
<ul style="list-style-type: none"> • excellent, pointed, useful advise or "whatever to do" in many situations which frequently arise in leadership positions...has given me confidence that I could do them!/I will redirect my energies to develop my leadership skills.
<ul style="list-style-type: none"> • The opportunity to interact informally with current women chairs and deans/Reaffirmation of my skill set and level of preparation for an upper level position.
<ul style="list-style-type: none"> • Networking-realize how many women are at mid/senior level positions and how similar the stories are/Specific advice to use to better manage my career. Wish I heard some of this years ago.
<ul style="list-style-type: none"> • Networking/Strategies-negotiation, budget, dealing with the media etc.
<ul style="list-style-type: none"> • phone numbers, cards, email addresses of women engineers-new friends.
<ul style="list-style-type: none"> • Topics on dealing with difficult people/people I've met

<ul style="list-style-type: none"> • I have got to know many women in academics (engineering) and developed a friendship with several women. I have learned a lot from the workshop and become aware of many available resources.
<ul style="list-style-type: none"> • Learning some techniques in negotiating skills/Networking
<ul style="list-style-type: none"> • Networking-meeting and connections/exposures guidance for "what next"
<ul style="list-style-type: none"> • New resources (personal contacts) for advice with difficult issues
<ul style="list-style-type: none"> • New leadership skills gained and goals to work toward/a new sense of the cohort
<ul style="list-style-type: none"> • Hearing personal jimmies (?) of women leaders/learning how to negotiate/establishing a network of women Eng. for support and advice.
<ul style="list-style-type: none"> • I wanted to do a good job as a keynote. I am very gratified and pleased by the response I've received from the participants. I believe that I have been able to help some of them and inspired them. Wonderful experience to be with all female engineering faculty.
<ul style="list-style-type: none"> • strategies on how to bring together faculty members in the department who I've been wanting to avoid/Ways to alter my negotiation interactions toward a collaborative solution.
<ul style="list-style-type: none"> • A much cleaner understanding of negotiations that are needed and useful to a faculty member/The understanding of where budget dollars come from and how they can be used.
<ul style="list-style-type: none"> • Increased confidence/Contacts with other faculty women
<ul style="list-style-type: none"> • meeting so many people/hearing from so many women in positions of authority
<ul style="list-style-type: none"> • do I want to pursue future administration positions/am I ready to pursue future admin positions and what types
<ul style="list-style-type: none"> • role models and being surrounded by so many successful women/concrete advice on what to do next
<ul style="list-style-type: none"> • 1) Knowledge about budget relationships and importance of aligning budget with dept. goals. 2) Legal implications of leading and lack of knowledge of policies.
<ul style="list-style-type: none"> • Self reflection-review of priorities in my life.
<ul style="list-style-type: none"> • Skills needed for new dept. co-chair position/network
<ul style="list-style-type: none"> • New styles of dealing with issues is (?) in some cases/you can be successful without following a direct plan.

5. What aspect of the conference did you find most helpful?

<ul style="list-style-type: none"> • The alternate leadership roles as center/institute directors. More on pathways how to establish such entities would be helpful.
<ul style="list-style-type: none"> • Negotiating/Meeting women in very similar circumstances
<ul style="list-style-type: none"> • Sharing experience of career path with other women in the academia.
<ul style="list-style-type: none"> • Meeting other women engineers
<ul style="list-style-type: none"> • Networking with other women in similar situations/Gaining an understanding of the administrative issues in academia. I recently came from the Air Force Academy and don't have a good picture of "civilian life"
<ul style="list-style-type: none"> • The networking with experienced leaders was very valuable.
<ul style="list-style-type: none"> • The opportunities to network with each other. The exposure to issues I had not thought of before (e.g. the value of faculty senate)
<ul style="list-style-type: none"> • The opportunity to interact with 40-50 other women academics
<ul style="list-style-type: none"> • networking, workshops that helped break the ice during networking
<ul style="list-style-type: none"> • Networking and renewing acquaintances/Dean's panel/Media skills
<ul style="list-style-type: none"> • Having a lot of women prof to network with
<ul style="list-style-type: none"> • Sessions on deans and chairs
<ul style="list-style-type: none"> • all of the panels were very helpful
<ul style="list-style-type: none"> • Chair and Dean's panels/Budget session
<ul style="list-style-type: none"> • Personal stories
<ul style="list-style-type: none"> • Strong support and role models.
<ul style="list-style-type: none"> • Inspiration from other successful women...especially speakers, but also informal conversations
<ul style="list-style-type: none"> • Meeting with other women faculty-seeing that no one has followed any one path.
<ul style="list-style-type: none"> • Energy of the role-models
<ul style="list-style-type: none"> • size of group;type of attendees-nearly all similar place in our careers
<ul style="list-style-type: none"> • Everything, but the interactive sessions were the most fun. There was time for questions and some very good questions were asked and answered.
<ul style="list-style-type: none"> • Balancing and growing the budget
<ul style="list-style-type: none"> • Day 2 (Sat.) Workshops, especially negotiating
<ul style="list-style-type: none"> • Skills development activities(negotiating, media training)
<ul style="list-style-type: none"> • Media training/awareness, negotiating, interaction/discussion with peers.
<ul style="list-style-type: none"> • The negotiation session was the most helpful to me.
<ul style="list-style-type: none"> • "skills-based" session and stories/interaction with other women faculty
<ul style="list-style-type: none"> • The interactive presentations, in that we were able to guide discussions into areas where we were particularly interested.
<ul style="list-style-type: none"> • The discussions about career paths from the Chair's Deans. Media training.
<ul style="list-style-type: none"> • Specific tools from the 2nd day-excellent sessions. I feel I can negotiate much better (hope so). I also better understand the need to become a full professor first before pursuing a chair/dean position.
<ul style="list-style-type: none"> • negotiating skills
<ul style="list-style-type: none"> • negotiation skills
<ul style="list-style-type: none"> • group activities, skills sections are very valuable.
<ul style="list-style-type: none"> • Leadership session and media training
<ul style="list-style-type: none"> • Negotiation and meeting others and learning "their story"

<ul style="list-style-type: none"> • The negotiation skills seminar.
<ul style="list-style-type: none"> • Hearing the experiences of recently appointed chairs, like Julia Fulghun. The negotiating workshop was particularly helpful.
<ul style="list-style-type: none"> • Negotiation skills/informal conversation
<ul style="list-style-type: none"> • Legal info session and budget session and media training, but it was too short!
<ul style="list-style-type: none"> • Media training and negotiation skills discussion were both very helpful
<ul style="list-style-type: none"> • Skills needed for new dept. co-chair position/network/hearing stories of those who have btdt/I got ideas about workshops we can hold at my own institution with internal speakers.

5. What aspect did you find least helpful?

<ul style="list-style-type: none"> • The accommodations/food were substandard though it is probably because of interest in getting as many women as possible to participate. But, doesn't excuse the smoking rooms and lack of vegetarian options.
<ul style="list-style-type: none"> • It is a very intense conference. Perhaps extend the days and add more breaks. Also, you can consider having packages sent earlier for participants to read.
<ul style="list-style-type: none"> • Felt day 1 could be shorter since skills info was sometimes clipped.
<ul style="list-style-type: none"> • too many events
<ul style="list-style-type: none"> • Timing of con tough right at end semester. Very enjoyable sessions compressed into very intense short times. Hard to digest at present. Will take a while to think all this through.
<ul style="list-style-type: none"> • On Saturday during workshops..., How long some of the participants discussed school/Dept./College specific situations. This was generally not helpful and wasted precious time.
<ul style="list-style-type: none"> • There were several "ramblers" who tried to dominate the work groups Friday afternoon with issues specific to their own situation
<ul style="list-style-type: none"> • The budgeting presentation was very finely focused on state institutions. Perhaps backing up a bit and spending less time on many state-specific or purely state-oriented policies would be better.
<ul style="list-style-type: none"> • some breakouts were overly negative
<ul style="list-style-type: none"> • Sometimes there was too much autobiographical content in the presentation; it has a place but it is not what I find most helpful or important
<ul style="list-style-type: none"> • Social and gender issues-not because it was not prepared well but because these issues are not new.
<ul style="list-style-type: none"> • The social issues workshop. Although I really liked the speakers the workstudy was rushed and no "real" (in depth) discussions/conclusions could be made.
<ul style="list-style-type: none"> • Etiquette skills-some good points but she needed framework/context and knowledge of women in Eng.
<ul style="list-style-type: none"> • gender issue
<ul style="list-style-type: none"> • The social speaker was not particularly helpful.
<ul style="list-style-type: none"> • Friday Dinner Keynote/Social issues/alternate leadership roles
<ul style="list-style-type: none"> • 1)advice on makeups and handshaking (the wrong crowd for this discussion!) 2) by Sunday morning, my brain had sort of stopped-have last speaker on Thursday night instead.
<ul style="list-style-type: none"> • Social Issues session/Didn't address women of color issues
<ul style="list-style-type: none"> • The first speaker had some good points but not a good grasp of our environment.
<ul style="list-style-type: none"> • While entertaining, I think the opening speaker on protocol would be better if it were more specific to academia.

<ul style="list-style-type: none"> • It was all wonderful
<ul style="list-style-type: none"> • Nothing-it was all great.
<ul style="list-style-type: none"> • No aspect was unhelpful
<ul style="list-style-type: none"> • None-all quite valuable. Organization very good too. (?) having interactive program on Day 2- after comfort level established.
<ul style="list-style-type: none"> • The sharing of negative stories was sometimes disheartening.
<ul style="list-style-type: none"> • none
<ul style="list-style-type: none"> • all was helpful
<ul style="list-style-type: none"> • The sessions were all worthwhile.
<ul style="list-style-type: none"> • If the speaker on Thursday night has more experience in the conservatives, make dominant field, the seminar would be more beneficial.
<ul style="list-style-type: none"> • opening session on waking the room not so relevant
<ul style="list-style-type: none"> • Enjoyed it all!
<ul style="list-style-type: none"> • Since everything was so helpful, this isn't negative, simply the lowest on the list:how to work a room.

7. In what ways, if any, did the conference change your perceptions or attitudes about positional and non-positional leadership (leadership from an administrative position such as chair or dean versus other academic leadership roles such as directing a research center, being a full professor or a fellow of your technical society)?

<ul style="list-style-type: none"> • The leadership is self motivated and planned.
<ul style="list-style-type: none"> • I am still uncertain about aggressively pursuing leadership roles but sure that when I do make a decision-it will be based on a better understanding. I am convinced I must channel efforts into being promoted to full prey.
<ul style="list-style-type: none"> • It seems that achieving a high administrative position while having small kids is unattainable...Thus, I will opt to be a center director first and later go to chair
<ul style="list-style-type: none"> • I need to join administrative positions that can ensure implementing changes in academic policies pertaining to women in academia.
<ul style="list-style-type: none"> • It made me really want to move into administrative positions. It made me appreciate the job of a Center Director etc. as compared to a Chair/Dean. They are more similar than I thought they that they were.
<ul style="list-style-type: none"> • didn't (?) perception-just provided more info about my initial perceptions...getting full (?) admin. Is key-already knew it but have lots of stories/info to illustrate it.
<ul style="list-style-type: none"> • Realized that a septematic approach to attaining leadership positions is effective/Better understanding of importance of obtaining full professor rank within engineering.
<ul style="list-style-type: none"> • The main change I under went was a realization that I didn't want to beat a state-school. I have not changed my perspective that I'd rather have a positional leadership position.
<ul style="list-style-type: none"> • More excited about the challenges but more wary about the issues. It's great going in with eyes wide open!
<ul style="list-style-type: none"> • Perceptions, interests not charged-just reinforced. Many of my impressions, intuitions now appear well-grounded.
<ul style="list-style-type: none"> • Still enthusiastic, but more cautious of things to be aware/cautious of.
<ul style="list-style-type: none"> • I think the conference helped me envision myself in a leadership roles.
<ul style="list-style-type: none"> • I realized that my role as Research Division Director is a significant role and I should embrace it-make it my own-lead as though I was born to the role-don't wait for permission or encouragement to lead men.
<ul style="list-style-type: none"> • It convinced me that I may not be cut out for administrative leadership. It also reaffirmed my belief that other leadership positions are important.
<ul style="list-style-type: none"> • Need to be full professor to go into administration/But have basic abilities to do job/But okay if decide against it...there are other leadership opportunities/And there is time
<ul style="list-style-type: none"> • It made me feel more confident that I could be a positional leader, inspire of the impostor syndrome.
<ul style="list-style-type: none"> • The conference helped me to see the importance of attaining the full professor rank which has motivated me to crank up my publication production.
<ul style="list-style-type: none"> • Feel I understand the responsibilities better and how they differ. I have a better idea of the path that's best for me.
<ul style="list-style-type: none"> • I think I am more open-minded about positions
<ul style="list-style-type: none"> • become full professor first before becoming administrator.
<ul style="list-style-type: none"> • It solidified my commitment to achieving full rank before considering administrative position.
<ul style="list-style-type: none"> • Increased appreciation for networks and support system
<ul style="list-style-type: none"> • It did not change much
<ul style="list-style-type: none"> • The conference confirmed my perceptions on positional leadership. There was little new

<p>revelations on the position. Between positional and non-positional leadership positions, I still prefer the non-positional leadership. However, the non-positional leadership is less financial rewarding.</p>
<ul style="list-style-type: none"> • Yes, helped me define the positions and see the really true paths to them. Helped me to see the steps I need to take to clear my path, although I still need to think things through.
<ul style="list-style-type: none"> • It did not change my perceptions but it gave me quite a lot of specific lessons, which is what I was after; also seeing all women leaders is highly encouraging
<ul style="list-style-type: none"> • It makes me much more aware of what's involved in being a Chair and on up. All the expiated attitudes and responsibilities that go with it. It makes me think about whether I want to consider it when it becomes available.
<ul style="list-style-type: none"> • really n/a
<ul style="list-style-type: none"> • I was reminded again of the importance of becoming a full professor.
<ul style="list-style-type: none"> • It made me more interested in Chair positions, after being turned off from the opportunity due to perceived negative aspects.
<ul style="list-style-type: none"> • Didn't really change my views, but solidified many of them.
<ul style="list-style-type: none"> • I developed a broader perspective of opportunities available
<ul style="list-style-type: none"> • no change
<ul style="list-style-type: none"> • I recognized that faculty in your dept. will for the most part respect you if they perceive you as fair (even if they don't agree with you). I also understand better the importance of achieving full prof rank
<ul style="list-style-type: none"> • Somewhat-good to be exposed to this.
<ul style="list-style-type: none"> • no change...I missed these sessions

8. Do you believe women face significant barriers to advancement in leadership positions at universities?

If yes, [how] did conference discussions help you to identify skills to overcome these barriers?

<ul style="list-style-type: none"> • discussion with others how they did it
<ul style="list-style-type: none"> • Yes, in terms that there are not "fast-food" type solutions. One has to search within to find where inner peace and strength lies and decide when and how she will pursue her goals.
<ul style="list-style-type: none"> • offered different paths for leadership/network
<ul style="list-style-type: none"> • It made me more aware that my institution probably has things available to help develop skills that were identified at this conference. I plan to find out about them when I return.
<ul style="list-style-type: none"> • Narratives illustrate dealing with difficulty
<ul style="list-style-type: none"> • Reinforced need for mentors, both internal and external/Clearly demonstrated common negotiating pitfalls that women practice with recommended remedies.
<ul style="list-style-type: none"> • All of the activity sessions were very helpful.
<ul style="list-style-type: none"> • Negotiating, budgeting, how others made it.
<ul style="list-style-type: none"> • Self awareness of behaviors and skills/tools such as negotiation techniques are invaluable/ insight from every direction on how to find out information.
<ul style="list-style-type: none"> • Many great ideas-just not too easy (if even possible) with my current institution and research resources (collaborative opportunities), any my priorities i.e.. Family life.
<ul style="list-style-type: none"> • Negotiating and growing the budget were both encouraging...take control of the situation and don't get discouraged. Mary Anderson-Rowland was also very inspiring.
<ul style="list-style-type: none"> • The conference helped me to recognize critical skills that it should be developing to be successful in pursuing leadership opportunities.
<ul style="list-style-type: none"> • More understanding of how to arm (armor) myself to address and overcome them.
<ul style="list-style-type: none"> • The negotiation skills session taught helpful techniques to avoid emotional confrontation.
<ul style="list-style-type: none"> • It gave me a skill set which I can develop, and which I believe will make me "clearly stand out" as the best candidate.
<ul style="list-style-type: none"> • Specific tools on the 2nd day. Against the barriers are not women but against certain character traits that women may have more of (?) Men experience much of the same. It's the system.
<ul style="list-style-type: none"> • The negotiation session was particularly helpful
<ul style="list-style-type: none"> • knowledge is power
<ul style="list-style-type: none"> • understanding common pitfalls, negotiation skills, tactics, etc.
<ul style="list-style-type: none"> • increased awareness of issues and skills
<ul style="list-style-type: none"> • negotiating skills
<ul style="list-style-type: none"> • It demonstrates it can be done. Suggestions and ideas presented in the conference should prepare me a little better for the leadership position if I choose to pursue that path.
<ul style="list-style-type: none"> • Good overview of the skills necessary and the means to gain them and some of the mis-steps to try to avoid, or how to recover from them. Very helpful.
<ul style="list-style-type: none"> • negotiation skills; media skills! Identifying areas in which to increase knowledge
<ul style="list-style-type: none"> • Negotiation skills
<ul style="list-style-type: none"> • Negotiating skills; networking with other women faculty engineers. Seeing how other

women leaders got these.
• negotiation session was very good/new contacts
• it made me think about how I would approach situations that might be challenging (now I have a tool box and am better prepared-the hardest interaction come when I am unprepared)
• It made clear what skills one would need to get past these barriers.
• negotiating skills!
• negotiation was very good
• emphasis on building a network, asking for help, using network for coaching
• Knowing relationship to budget/ (?) needed steps-full prof before anything.
• examples of pathways to leadership skills helpful to position
• negotiation skills/lots of success stories