

**Women Faculty in Engineering at Iowa State University
University Committee on Women
Subcommittee on Status of Women Faculty in the College of Engineering
October 15, 2005**

Abstract

*In this report, qualitative and quantitative data collected on recruitment and retention of women faculty in the Iowa State University College of Engineering are reported and used to make recommendations for improving both recruitment and retention. Data reveal that over the past five years, the percentage of women faculty in the College of Engineering has declined from a high of 9.6% in 2001 to a low of 7.8% in 2005. Without specific interventions, it seems unlikely that this situation will change at ISU. **In this report we suggest that the College of Engineering should strive to double the number of female faculty members in the next five years.** In order to achieve this goal, approximately 33% to 50% of the total number of new hires per year need to be female faculty, some of these hires need to include senior women faculty members, and additional specific steps to improve the climate and retention for women in the College of Engineering must be implemented.*

The Committee

In the Fall of 2002, the University Committee on Women formed the Subcommittee on the Status of Women Faculty in the College of Engineering to review the status of women faculty in the college and to make recommendations where appropriate.

Members of the committee include Mary Goodwin (COE), Amy Bix (Hist), Jackie Litt (Soc), Charles Glatz (ChE), Judy Vance (ME), and Carolyn Heising (IMSE) This report was composed with the assistance of Ann Thompson (CI).

Sources for this report include data collected from the College of Engineering that includes both quantitative and qualitative assessments.

Faculty Data

Although the recruitment and retention of women engineering faculty is a national problem, ISU's statistics are well below the national average. The national average for women engineering faculty employed as tenure/tenure track (t/tt) faculty is 11%. At ISU the percentage of t/tt female faculty members has decreased from a high of 9.6% in FY01 to 7.8% in FY05 (Table 1). There are 6 fewer female faculty members in the college in FY05 compared to FY01.

Table 1: Tenure/Tenure Track Faculty in the College of Engineering, 2001-2005

Fiscal Year	Professor			Associate			Assistant			Total		
	M	F	%	M	F	%	M	F	%	M	F	%
2005	80	3	3.6	59	5	7.8	38	7	15.6	177	15	7.8
2004	80	4	4.7	59	6	9.2	38	6	13.6	177	16	8.3
2003	87	3	3.3	64	8	11.1	42	7	14.3	193	18	8.5
2002	91	4	4.2	68	8	10.5	33	8	19.5	192	20	9.4
2001	91	3	3.2	68	6	8.1	39	12	23.5	198	21	9.6
1995	118	2	1.7	54	3	5.3	40	9	18.4	212	14	6.2

The departmental percentages vary from a low of 0% in Aerospace Engineering to a high of 20% in Industrial and Manufacturing Systems Engineering (Table 2). Five departments have ratios lower than the national averages for similar departments.

Table 2: Women Engineering Faculty by Department FY05

	ISU percentage women engineering faculty	National average percent women faculty ¹
College	7.8%	10.4%
IMSE	20.0%	14.6%
ChE	18.8%	11.9%
ME	13.3%	7.4%
ABE	8.3%	10.8%
CCEE	6.9%	11.3%
MSE	4.5%	11.6%
ECpE	2.3%	8.8%
AE	0.0%	5.8%

Data on the hiring of new faculty at Iowa State University between the years of 2001 to 2003 is summarized in Table 3. The College hired female faculty at a rate of 13.5% during this time period, however, due to resignations, the number of women faculty in the college decreased.

Table 2: Hiring of Women Faculty (CoE), 2001-2003

Fiscal Year	Candidates brought to campus		Offers extended		Candidates accepting offers		
	M	F	M	F	M	F	%
2003	48	8	13	4	10	2	16.7
2002	35	4	16	1	16	1	5.9
2001	27	7	16	2	6	2	25.0
TOTALS	110	19	45	7	32	5	13.5

This data shows that during the time period FY01 to FY03 there were 5 women faculty who accepted employment offers but the total number of women faculty in the college declined by 3 during this time period.

Interviews

In 2002, Jackie Litt (Soc) and Sharon Bird (Soc) interviewed 9 women engineering faculty representing various departments and academic ranks. They also conducted phone interviews with 4 women engineering faculty who had left the university. Details of their study can be found in Appendix C.

¹ ASEE Profiles of Engineering and Engineering Technology College, 2004 Edition

They identified five key findings:

1. The role of the department chair was critical in women's feelings of inclusion, knowledge of work expectations, and ultimately their commitment to the institution.
2. In general, working conditions were seen as deteriorating as budget cuts were creating increasing pressure to obtain grant dollars. Expectations for tenure and promotion were identified as increasingly unobtainable and absurd. Many women faculty indicated that this is not merely a "woman's issue". The women faculty explain that their male colleagues, particularly those with employed wives, were feeling similar pressures and unhappiness about the work environment.
3. Mentoring relationships seemed ineffective for most women in their experience as junior faculty, and virtually nonexistent once they were tenured.
4. Women uniformly expressed the need for an increase in the numbers of women in their departments. They noted the advantages of having women as scientific colleagues, and were interested in having more women who could understand the particular pressures of being a woman engineer, especially in the area of combining work and family.
5. Promotion was identified by Assistant as well as Associate Professors as a key concern. The women faculty explained that standards for tenure and promotion were not always clear and seemed to be rising.

Without specific interventions, it seems unlikely that this situation will change at ISU. In this report we suggest that the College of Engineering should strive to double the number of female faculty members in the next five years and we suggest specific interventions that will lead to achieving this goal.

Analysis

It is important to note that the data from the COE do indicate some improvements in specific areas. Metrics for the College of Engineering that show improvement include:

- The COE now has one woman department chair.
- The COE has appointed a woman associate dean.
- The departments of Industrial and Manufacturing Systems Engineering, Chemical and Biological Engineering, and Mechanical Engineering have percentages of women faculty which are above the national average.

Data also argue for immediate attention to:

- Recruiting and retaining more women faculty members.
- Placing more women in administrative and leadership positions in the college.

In a report to the Dean of the College of Engineering at the University of Illinois that is similar to this report, Purdue University is used as an example of an institution that has implemented successful programs to address the challenge of recruiting and retaining women in their College of Education (Grosshandler, D., DeStefano, L., Burke, M., & Fiedler, E., 2004). These data from Purdue University suggest that specific interventions can make it is possible to improve

recruitment and retention rates of female faculty in Engineering. With a sustained systemic program, Purdue has doubled its number of women faculty members in 5 years, and we believe that this is an appropriate goal for the College of Engineering at Iowa State University (Grosshandler, et al., 2004).

Recommendations

In this report, we suggest specific interventions in two areas: recruiting female faculty members for the College of Engineering and retaining faculty members in the College of Engineering. Clearly, addressing these two issues will result in a more diverse faculty at ISU. This ultimately will help in the recruitment and retention of undergraduate and graduate women students.

a. Recruitment of Women Faculty Members

- Appropriate hiring and retention target goals should be set with each department in the college and department chairs should be held accountable for reaching these goals over time.
- Search committees must make a special effort to recruit women to the candidate pool. The Dean should remind search committees of the importance of this effort. The Dean and Department Chair should also be willing to insist that committees provide a diverse set of candidates and be willing to turn back searches on these criteria.
- The search committees themselves need to have a diverse group of members, including faculty members who have a record of actively supporting recruitment of women.
- The Dean should create a pool of flexible hiring funds that can be used to hire exceptional women faculty when they are available. Thus, instead of waiting for an opening to occur, the College and departments could be in a position to actively recruit outstanding faculty when those faculty members are available.
- All faculty members must be educated about the extent of this problem and about possible strategies to address the problem. Although most faculty members speak about the importance of women in engineering, few have developed a deep understanding of the problem and of possible strategies for addressing the problem.

b. Retention of Women Faculty Members in Engineering

The interview data collected from women faculty members who have chosen to leave ISU provide valuable insights into possible strategies for improving retention rates. These data suggest that the College of Engineering needs to:

- Hire senior women faculty to help provide more mentors and potential leaders in the department.
- Provide structured and consistent mentoring for young women faculty members, choosing successful and empathetic mentors. Wherever possible, mentors should be successful senior women engineering faculty.
- Encourage and recruit more women to become department chairs in the College of Engineering.

- Ensure that women engineering faculty members do not receive more than their share of service responsibilities.
- Provide leadership training opportunities for women engineering faculty members, including administrative internships, chairing search committees, attending national meetings on women in engineering, and attending national courses and seminars on leadership.
- Consider offering college or department wide seminars and speakers on issues of women in engineering. Purdue has developed a model faculty development program in this area and has been one of the few COE's in the country to make significant improvements in their numbers of women faculty in Engineering (Grosshandler, et al., 2004).
- Report annually on the number of women faculty in each department in the college, providing a formal record of progress in this area.

Summary and Conclusions

We suggest that the College of Engineering embrace the goal of doubling the number of women faculty members by 2010. In order to achieve this goal, the College of Engineering will need to hire approximately 4 new female faculty members each year. Given the current number of hires annually in the college, this corresponds to achieving 33% to 50% female hires. Senior women hires should be included in this group.

Although the College of Engineering at Iowa State University has made some improvements in the number of women in leadership, there has been virtually no overall change in the number of women faculty members in the past decade. In fact, there has been a decline in the percentage of women faculty in the College of Engineering in the past five years. It is clear that specific interventions are necessary to address this issue and this report suggests several interventions that are based on approaches of Colleges of Engineering who have been successful in this area. These interventions emphasize aggressive policies in the recruitment and retention of women faculty members to Iowa State University.

References

Grosshandler, D., DeStefano, L., Burke, M., & Fiedler, E. (2004, July). *Report to the Dean on the Status of Faculty Women in the University of Illinois College of Engineering.*

University of Illinois at Urbana-Champaign, Bureau of Educational Research.

Taskforce on the Recruitment and Retention of Women and Minority Faculty Report, May 2003:

<http://www.provost.iastate.edu/reports/>.

Appendix A
Tenure/Tenure Track Women Faculty in the College of Engineering, 2001-2005

College Summary										
		Professor		Assoc Prof		Asst Prof		Total		
Fiscal Year		M	F	M	F	M	F	M	F	
2005		80	3	59	5	38	7	177	15	
2004		80	4	59	6	38	6	177	16	
2003		87	3	64	8	42	7	193	18	
2002		91	4	68	8	33	8	192	20	
2001		91	3	68	6	39	12	198	21	
1995		118	2	54	3	40	9	212	14	
Aerospace Engineering										
		Professor		Assoc Prof		Asst Prof		Total		
Fiscal Year		M	F	M	F	M	F	M	F	
2005		14	0	7	0	3	0	24	0	
2004		14	0	8	0	4	0	26	0	
2003		12	0	9	0	4	0	25	0	
2002		15	0	11	1	4	0	30	1	
2001		15	0	12	1	3	1	30	2	
1995		23	0	9	0	4	2	36	2	
Agricultural and Biosystems Engineering										
		Professor		Assoc Prof		Asst Prof		Total		
Fiscal Year		M	F	M	F	M	F	M	F	
2005		3	0	6	0	2	1	11	1	
2004		4	0	5	0	3	0	12	0	
2003		10	0	10	0	5	2	25	2	
2002		8	0	11	0	5	2	24	2	
2001		7	0	10	0	6	2	23	2	
1995		11	0	4	0	8	1	23	1	

Chemical and Biological Engineering									
	Professor		Assoc Prof		Asst Prof		Total		
Fiscal Year	M	F	M	F	M	F	M	F	
2005	7	1	5	1	1	1	13	3	
2004	7	1	5	1	1	1	13	3	
2003	10	1	3	1	2	0	15	2	
2002	10	1	3	1	1	0	14	2	
2001	9	1	4	0	1	1	14	2	
1995	13	0	1	1	2	0	16	1	
Civil, Construction and Environmental Engineering									
	Professor		Assoc Prof		Asst Prof		Total		
Fiscal Year	M	F	M	F	M	F	M	F	
2005	11	0	9	0	7	2	27	2	
2004	12	0	10	0	5	2	27	2	
2003	10	0	9	1	7	2	26	3	
2002	11	0	10	1	6	2	27	3	
2001	12	0	10	1	8	3	30	4	
1995	16	0	10	1	6	1	32	2	
Electrical and Computer Engineering									
	Professor		Assoc Prof		Asst Prof		Total		
Fiscal Year	M	F	M	F	M	F	M	F	
2005	15	0	15	1	13	0	43	1	
2004	15	1	14	2	12	0	41	3	
2003	14	1	15	2	12	0	41	3	
2002	16	2	15	1	7	1	38	4	
2001	18	1	15	1	8	2	41	4	
1995	21	0	12	1	11	2	44	3	

Industrial and Manufacturing Systems Engineering										
	Professor		Assoc Prof		Asst Prof		Total			
Fiscal Year	M	F	M	F	M	F	M	F	M	F
2005	4	1	7	2	1	0			12	3
2004	4	1	6	2	4	0			14	3
2003	4	1	7	2	3	0			14	3
2002	4	1	6	2	5	0			15	3
2001	4	1	6	1	5	0			15	2
1995	5	2	6	0	4	1			15	3
Materials Science and Engineering										
	Professor		Assoc Prof		Asst Prof		Total			
Fiscal Year	M	F	M	F	M	F	M	F	M	F
2005	13	0	3	1	5	0			21	1
2004	11	0	3	1	4	0			18	1
2003	12	0	2	1	5	0			19	1
2002	12	0	3	1	3	0			18	1
2001	11	0	4	1	4	0			19	1
1995	11	0	2	0	2	1			15	1
Mechanical Engineering										
	Professor		Assoc Prof		Asst Prof		Total			
Fiscal Year	M	F	M	F	M	F	M	F	M	F
2005	13	1	7	0	6	3			26	4
2004	13	1	8	0	5	3			26	4
2003	15	0	9	1	4	3			28	4
2002	15	0	9	1	2	3			26	4
2001	15	0	7	1	4	3			26	4
1995	18	0	10	0	3	1			31	1

Appendix B
Hiring of Women Faculty, 2001-2003

College Summary								
Fiscal Year	Candidates brought to campus			Offers extended			Candidates accepting offers	
	M	F		M	F		M	F
2003	48	8		13	4		10	2
2002	35	4		16	1		16	1
2001	27	7		16	2		6	2
TOTALS	110	19		45	7		32	5
Aerospace Engineering								
Fiscal Year	Candidates brought to campus			Offers extended			Candidates accepting offers	
	M	F		M	F		M	F
2003	5	0		2	0		1	0
2002	0	0		0	0		0	0
2001	4	2		1	0		1	0
TOTALS	9	2		3	0		2	0
Agricultural & Biosystems Engineering								
Fiscal Year	Candidates brought to campus			Offers extended			Candidates accepting offers	
	M	F		M	F		M	F
2003	2	3		1	1		0	1
2002	0	0		0	0		0	0
2001	0	0		0	0		0	0
TOTALS	2	3		1	1		0	1

Chemical Engineering									
		Candidates brought to campus			Offers extended			Candidates accepting offers	
Fiscal Year		M	F		M	F		M	F
2003		8	2		1	1		1	1
2002		3	0		1	0		1	0
2001		1	1		1	0		0	0
TOTALS		12	3		3	1		2	1
Civil, Construction & Environmental Engineering									
		Candidates brought to campus			Offers extended			Candidates accepting offers	
Fiscal Year		M	F		M	F		M	F
2003		9	0		4	0		4	0
2002		2	1		2	0		2	0
2001		3	2		1	1		1	1
TOTALS		14	3		7	1		7	1
Electrical and Computer Engineering									
		Candidates brought to campus			Offers extended			Candidates accepting offers	
Fiscal Year		M	F		M	F		M	F
2003		4	1		0	1		0	0
2002		21	1		9	1		9	1
2001		16	1		10	1		3	1
TOTALS		41	3		19	3		12	2

Industrial & Manufacturing Systems Engineering									
		Candidates brought to campus			Offers extended			Candidates accepting offers	
Fiscal Year		M	F		M	F		M	F
2003		5	0		1	0		1	0
2002		0	0		0	0		0	0
2001		0	0		0	0		0	0
TOTALS		5	0		1	0		1	0
Materials Science & Engineering									
		Candidates brought to campus			Offers extended			Candidates accepting offers	
Fiscal Year		M	F		M	F		M	F
2003		5	0		1	0		1	0
2002		0	0		0	0		0	0
2001		0	0		0	0		0	0
TOTALS		5	0		1	0		1	0
Mechanical Engineering									
		Candidates brought to campus			Offers extended			Candidates accepting offers	
Fiscal Year		M	F		M	F		M	F
2003		10	1		1	0		1	0
2002		4	0		2	0		2	0
2001		3	1		3	0		1	0
TOTALS		17	2		6	0		4	0

Appendix C

REPORT OF INTERVIEWS WITH WOMEN FACULTY IN THE COLLEGE OF ENGINEERING

NOVEMBER 2003

JACKIE LITT
SHARON BIRD

Note: This draft is intended only for consideration by members of the UCW sub-committee on the COE. Please do not distribute. Portions may be used in the final report of the sub-committee to UCW, but please send it to us first for review.

Note (1-8-08): *This portion of the document has been cleared for general release.*

National Picture: National data show that Engineering is the most male-dominated profession in the academy. Women make up 7% of engineering faculty, compared to 13% in the physical sciences, 22% in computer and information sciences, and 13% in math sciences (WEPAN 1998). In engineering, just 1% of full professors, 6% of associate professors and 14% of assistant professors are women. Women are also poorly represented in engineering academic leadership. In 2002 there were only 13 women engineering deans in the U.S. and Puerto Rico (WEPAN 1998). One study of 35 institutions found that women occupy a low number of dean and department chair positions: 9% are deans, 5% department chairs, and 6% associate chairs (Linnemeyer 2002).

ISU Picture: In 2002 the University Committee on Women at Iowa State established a committee to investigate the status of women in ISU's College of Engineering (COE). Of the tenure track faculty hires in engineering between 1990-2000, 22 were women and 99 men. In effect, 18.2% of all hires were women. In that time period, 32% of women assistant professors resigned compared to 27% of men.

The high attrition rates combined with the low representation of women in the COE prompted our decision to conduct a qualitative, interview study of faculty women's experiences at ISU. As stated in our letter to the women faculty in COE, "Our goal is to investigate the area of gender equity and to produce a report and publications on the status of women in the college. The report will examine potential institutional sources of inequity and, if identified, recommend changes."

Study Procedures

In 2002, Litt interviewed 50 percent (9 of 18) of the women faculty in the COE: 2 full professors, four associate and three assistant professors, representing various departments in the COE. In addition, Litt conducted phone interviews with four women faculty who had resigned from the COE in the past five years.

The interviews were designed to examine three primary areas: 1-work environment; 2-work/life balance, and 3-experiences with or anticipation of tenure and/or promotion. The interviews focused on these broad topics. Interviews were 30 - 90 minutes long. Each interview was tape-recorded and subsequently transcribed. Respondents were told that their identities would be protected in documents produced from the study. Hence, key identifying markers, such as department, age, gender and names of children, etc. have been changed. Litt received approval for the research project through the Institutional Review Board at ISU (documentation is available).

Jackie Litt and Sharon Bird, both faculty members in the Sociology Department at ISU, analyzed the interview data. Litt and Bird independently read each interview transcript and coded them along the three key domains under study, and noted additional emergent themes in the data. This report summarizes our findings.

Key Findings

We have identified five key findings that we believe should be addressed by the COE administration. We note that while additional research will be needed to determine the extent to which all ISU COE women faculty share the sentiments described by the participants in this study, the response patterns we found were prevalent among the 50 percent of faculty we interviewed. Thus, we are confident in our conclusion that the five key findings outlined below constitute issues of great concern to COE women faculty.

1-Role of **department chair** was critical in women's feelings of inclusion, knowledge of work expectations, and ultimately their commitment to the institution.

2-In general, **working conditions** were seen as deteriorating as budget cuts were creating increasing pressure to obtain grant dollars. Expectations for tenure and promotion were identified as increasingly unobtainable and absurd. Many women faculty indicated that this is not merely a "woman's issue. The women faculty explain that their male colleagues, particularly those with employed wives, were feeling similar pressures and unhappiness about the work environment.

3-**Mentoring relationships** seemed ineffective for most women in their experience as junior faculty, and virtually nonexistent once they were tenured.

4-women uniformly expressed the need for an **increase the numbers of women** in their departments. They noted the advantages of having women as scientific colleagues, and were interested in having more women who could understand the particular pressures of being a woman engineer, especially in the area of combining work and family.

5-**Promotion** was identified by Assistant as well as Associate Professors as a key concern. The women faculty explained that standards for tenure and promotion were not always clear and seemed to be rising.

These five key findings were derived from our analysis of the coded interview data. The data were initially organized according to the themes we explored in the interviews: work environment, work-life balance, and promotion issues. Appendix A contains our summary of coded data. This summary may provide additional direction for those seeking to address the issues outlined above.

Appendix A: Summary Findings

All Ranks

I. Work Environment

- Collegiality – Women faculty explain that in order to build collegial relationships they must first decipher informal workplace norms. Many find it difficult to break into existing social networks. Many feel they have succeeded in developing positive working relationships with colleagues and are engaged in collaborative work with men faculty. A number of women have developed collaborative relationships with women in other departments or colleges, sometimes in response to feelings of marginality in their own departments. Others, however, have had more difficulty establishing productive working relationships in or outside of their departments. Some explain that collegial relationships are difficult to establish when they are left off of grant proposals or are denied access to granting personnel or agencies.
- Integration / Isolation – Women faculty note in general that they are typically excluded from the male-dominated informal culture of their departments. This becomes more apparent the longer the faculty member is in the department. On rare occasions, a woman faculty will be included in informal activities. Those who are included explain that they are exceptions to the general pattern. Women faculty members explain that much of this kind of exclusion is the result of men faculty's routine practices, not intentional ploys to exclude women. The outcome for the women, nonetheless, is that they do not have access to information shared among men informally about the department, opportunities for research and grant writing, etc.
- Mentoring – Assistant professors felt that mentoring was generally poor. The lack of mentors made it difficult to learn the informal culture of the department. Assistant professors view tenured women professors as absent or very overcommitted. They identified the department chair as a key link to finding a suitable mentor. Mentoring relationships (if established) can be derailed by many factors (e.g., mentor leaves the university). In the words of one associate professor who reflected back on the disappointment of her experiences as a junior faculty: "And . . . I was assigned another [mentor] , we did have another female faculty, and then it was like, okay you're female, she's female, so she's your mentor. Some people are effective advocates with committees. She just wasn't."

Associate professors seemed to experience effective mentoring relationships only rarely and sporadically. They seemed to indicate that no structure was in place to provide them with mentors, that they were able to

have more freedom to choose their activities once tenured but that they were essentially alone in their efforts to achieve promotions. Department chairs were identified as possible significant mentors.

- General Climate - Many women reported a general climate in which women were made to feel like outsiders in their departments or research groups. Some women faculty feel marginalized from departmental decision-making processes, although not all do. The women who reported feeling included in key decision making and power in departments expressed some uncertainty about precisely why they were “inside” while other women were “outside.” This uncertainty, in itself, was a source of anxiety.

Specific examples include:

- Men faculty speaking negatively of other women faculty and administrators.
- Men faculty assuming women faculty’s professional work is or will be compromised by family life.
- Men faculty ignoring women faculty’s expertise or connections.
- Men faculty demanding more of a women faculty’s c.v. and references (i.e., women’s c.v.’s had to be “bullet proof.”)
- Men faculty speaking negatively of other women faculty and administrators, thereby undermining women’s credibility.
- Men faculty dismissing women as overly emotional while apparently more accepting of men’s emotional outbursts.
- Men insinuating or stating outright that women got their positions or promotions because they were women.

II. Work-Life Balance

- There was a serious and general concern among the women faculty that expectations for work were growing increasingly steep and were even becoming unrealistic. Many felt betrayed by the gearing up of expectations for grant money. Others felt that the “9 to 5” mentality fit better with the lives of men with no family responsibilities than with their own lives. Their own responsibilities to families were given little respect and were even used as evidence that they were not professionally committed. All reported that the expectations for hours worked is a moving target and harder and harder to catch. Most work at home every evening.

III. Promotion

- Not surprisingly, questions about promotion and tenure were at the forefront in the interviews with assistant professors. They expressed uncertainty about the standards that would be used to evaluate their candidacy. They saw the expectations and standards rising to a degree that they had not anticipated. Associate professors were also concerned

about promotion. While the concern did not dominate the interviews to the extent it did for junior faculty, associate faculty felt nonetheless that they were unsure about whether they would be promoted. In general, the areas of work expectations and promotion were creating a great deal of anxiety among women faculty of all ranks.

We also explored the particular experiences of faculty at various ranks. Next we summarize our findings for Assistant and Associate Professors. These summaries are based on interviews with faculty currently and formerly employed in the COE at ISU. Due preserve the confidentiality of respondents at the Full professor level, we do not provide a separate summary of for Full Professors.

Assistant Professors

I. Work Environment

- Collegiality –At this stage, collegiality is especially important in forming social networks so that the new faculty member can learn the norms of the department and become involved in grant proposals. Some women report feeling isolated from main networks of men, and other women. Most desire an increase in the number of women on the faculty.
- Resource Availability – Assistant professors were satisfied with the level of physical resources they have within their departments.
- Integration / Isolation – Some expressed higher levels of integration than others. All believe new women faculty (and tenured) are less integrated into the department than new men faculty.
 - *Grant proposals* – All note the importance of integration to collaborative grant writing activities.
 - *Committees* – Some view committee memberships as a form of inclusion; others say they view exclusion from committees as good for their research activities.
 - *Role of the Department Chair* – The chair was identified as a key point person in identifying mentors and ensuring inclusion, formally and informally.

II. Promotion

- There was general concern that the tenure and promotion standards are constantly rising, way beyond the expectation they entered with in making their decisions to work at ISU. This did not suggest that these faculty felt they were not up to the tasks required of them, but that they felt there seemed to be almost no stopping point to the new demands and expectations. Many also expressed concern that the increasing expectations for grants was starting to dominate their work lives. Finally, there was a general feeling that rising expectations for work productivity

made it increasingly impossible to devote time to family or other outside interests.

III. Work/Life Issues

- Number of hours worked per week – Norms within departments suggest very long work hours. These women fit that norm. They work during the day, at night and on weekends. They feel that they must demonstrate this work commitment to their colleagues. They view the time commitment as a barrier to healthy family relationships. Some note that it's a joke to think a woman professor can balance work and family in a healthy way.
- Flexibility of hours – They worry that they will be negatively evaluated if they shift their work hours to accommodate family needs. None, however, said they opted to work any less.
- Working at home – Work in the evenings is very common. Some feel they're "on call" all the time.
- Maintaining family relationships – In general "family issues" viewed as a "woman's problem," suggesting men colleagues do not find these issues worthy of consideration. Women assistant professors understand that it is advantageous for men faculty to have a wife to take care of responsibilities at home. In general, the work culture is viewed as not family friendly.

Associate Professors.

- We identified three key dimensions in the associate professor interviews that differ markedly from the non-tenured, assistant professors. First, tenured women describe having ever-expanding responsibilities for service and committee work. Yet there is little corresponding adjustments in other work responsibilities. One commented that she was given the jobs that had anything to do with women; another that she served as informal mentor to women junior faculty and graduate students, and another that she was moving into advising students in a formal capacity.
- This high demand for service ties to the second general area of concern among Associate Professors, and that relates to their lack of certainty about their chances for promotion and felt that they had little support on how to achieve that promotion. They felt there was little mentoring or structure that would help them achieve promotion. Some believed that they were departing from the normal trajectory of a relatively unidimensional focus on research and grants. Thus, while the Associate Professors identified administration, advising, or teaching as very compelling aspects of their work that they were able to pursue after tenure, they felt that these activities would go essentially unrewarded in evaluations for promotion and/or merit.
- Third, tenured women did not appear to view tenure as a safety net that would allow them to spend more time with outside commitments, such as children. Most

spoke of working 50-60 hour weeks, working every week night and weekend day. They did not view ISU as a family friendly work-place. Indeed, they saw themselves as having to set new standards about family; or in the words of one tenured faculty woman, "I trained the faculty fairly well." On the other hand, the women felt that some of their men colleagues disparaged their roles as wives and mothers. Thus, they were caught in a double bind: first they had to fit in family roles around a very demanding work schedule. Second, they had to convince their male colleagues that they were indeed good professionals.