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Dataset for Navigate, Balance, and Retain: Developing Success in Mid-Career For Female STEM Faculty

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Navigate, Balance, and Retain

DEVELOPING SUCCESS IN THE MID-CAREER FOR FEMALE STEM FACULTY
(NSF 1015932)

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- The Advisory Committee of faculty and administrators provided valuable insights as we progressed. Barbara Burrell ran our focus groups and interviews. Carolinda Douglass provided an assessment of our goals and outcomes.
- Many students worked on this project and helped move us towards completion. Special thanks goes to Shannon McCarragher, James Woehrle, Jade Jenkins and Michaela Holtz for their many and varied efforts!

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Survey Introduction

Northern Illinois University (NIU) is a Carnegie research-high activity university, located in DeKalb, Illinois, a community of 35,000, 65 miles west of Chicago. The university's location provides many opportunities for dual career faculty couples and for collaboration with nearby industries and government laboratories. Two national laboratories, Argonne National Laboratory and Fermi National Accelerator Laboratory, are both within an hour's drive from campus. Several STEM (Science, Technology, Engineering, Mathematics) faculty members hold joint appointments from NIU and from a government laboratory.

Prior to 2008, NIU faculty demographics in STEM disciplines displayed many of the same characteristics as the national statistics: relatively low recruitment rates for women and high attrition rates. Following a preliminary review, the grant team explored the possibilities and mechanisms for creating mentorship opportunities and peer support programs, addressing two key concerns of our STEM faculty: (1) that of achieving a balance in midcareer among teaching, research, service, and personal responsibilities, and (2) that of developing a sense of agency or power within the workplace, and enabling faculty to advance through tenure and promotion processes that are not always fully transparent. The award of the Advance IT Catalyst Grant allowed the researchers to gather data broken down by sex/gender, discipline (STEM/non-STEM), and other employment variables, such as time at rank.

A work-life survey was administered in 2010-11 to STEM and non-STEM faculty in two colleges. 120 faculty responded to the survey, which included 169 Likert-type questions and 14 open ended questions in which participants were invited to provide detailed responses; key results follow.

Survey Introduction

Satisfaction: Respondents were generally satisfied with their current position, with a large proportion indicating departmental atmosphere was the factor that most contributed to satisfaction, and work-life balance was the factor that most detracted from satisfaction.

Hiring Process: A majority of the respondents reported being satisfied with the hiring process at NIU, and noted successful negotiations. Key variables in the hiring process were the interaction with the search committee and the perception that faculty made an effort to meet with interviewees.

Teaching and Service Workload: There was a general perception among faculty that they were able to teach the courses they wanted and that teaching was assigned equitably. However, self-reporting of workloads suggest that female faculty, especially in STEM, have an overall higher undergraduate teaching load. With regards to service, most participants serve on departmental level committees.

Research: The top five productivity indicators identified by respondents were: number of articles published in refereed academic/professional journals, prestige of publication outlets, number of monographs, number of presentations at national/international conferences, and number of book chapters. While most respondents believed their colleagues valued their research, a proportion of STEM faculty believed their colleagues did not value their research.

Resources: Respondents were generally satisfied with the resources available to them.

Survey Introduction

Networks and Mentoring: Less than a quarter of all respondents took part in a formal mentoring program, with STEM females reporting the least participation and the greatest sense of isolation within their departments.

Perceptions of Respect and Inclusivity: A majority of respondents believed they could voice their opinions openly within their department, but STEM females indicated that they tended not to be included in departmental informal networks. A majority of participants agreed with the statement that their department chair treated them with respect.

The Tenure Process: A higher proportion of STEM faculty disagreed with that research, teaching, and service are given appropriate weight in promotion, tenure, and merit decisions. 100% of STEM female respondents were satisfied with the tenure and promotion process overall.

Work-Life Balance: A majority of respondents agreed that most faculty in their department were supportive of colleagues who want to balance their personal and career lives, but a higher proportion of female respondents suggested that personal responsibilities had slowed down their career progress.

Survey details and summary statistics, including disaggregated proportions for discipline (STEM/non-STEM) and gender, follow in the next sections.

1. Demographic Characteristics of Respondents

Of the 120 respondents to this faculty survey, 57% were male and 43% were female (Table 1). As expected, almost all individuals reported having a Ph.D. as their terminal degree (98%). Of the male respondents, most reported receiving their terminal degree during the 1990s (45%), while female respondents reported a high number of terminal degrees received during the 1990s (40%) and 2000s (38%) (Figure 1a). Most respondents were hired by NIU between 1999 and 2010 (61% females, 58% males) (Figure 1b) as Assistant Professors (84% females, 77% males) (Figure 1c). Of all the respondents, most reported that they did not come to Northern Illinois University (NIU) with tenure (100% females, 96% males). However, at the time of the survey, a majority of the respondents reported that they had since earned tenure (73%).

Of survey respondents, 38% reported working in a STEM discipline, with 62% reported working in a non-STEM discipline. Most reported their current rank/title as Associate Professor (46%), while others reported holding the rank of Assistant Professor (28%) or Professor (26%) (Table 1).

The majority of respondents reported being either married or unmarried but living with their spouse/partner (79%). For those who it applied to, a majority reported that their spouse/partner was employed full time (60%). Additionally, most respondents reported having between one to three children (66%) (Table 1).

Table 1

Table 1: Demographic Information.

CHARACTERISTIC	Frequency (%) Total N= 120	Male N= 66	Female N= 49
Gender			
Male	66 (57%)		
Female	49 (43%)		
No response	5		
Discipline			
STEM	43 (38%)	31 (48%)	11 (24%)
Non-STEM	69 (62%)	33 (52%)	35 (76%)
Total	112	64	46
No response	8		
Current Rank/ Title			
Adjunct	1 (0%)	1 (2%)	0 (0%)
Assistant Professor	32 (28%)	22 (34%)	9 (20%)
Associate Professor	53 (46%)	25 (38%)	27 (57%)
Professor	30 (26%)	17 (26%)	11 (23%)
Total	116	65	47
No response	4		
Current Tenure Status			
Tenured	87 (73%)	45 (68%)	39 (80%)
Not tenured	32 (27%)	21 (32%)	10 (20%)
Total	119	66	49
No response			
Full-Time Status			
Full-Time	120 (100%)	66	49
Part-Time	-	-	-
No response	0		
Marital Status			
Married/ Unmarried living with spouse/partner	93 (79%)	54 (82%)	34 (74%)
Married/ Unmarried living in different locations	5 (4%)	2 (3%)	3 (6%)
Single/Divorced/ Widowed	19 (16%)	10 (15%)	9 (20%)
Total	117	66	46
No response	3		
Spousal Employment Status			
Employed full-time	59 (60%)	27 (47%)	28 (78%)
Employed part-time	19 (19%)	17 (29%)	2 (6%)
Unemployed	8 (8%)	4 (7%)	3 (8%)
Not in the Labor Force	8 (8%)	6 (10%)	2 (5%)
Retired	5 (5%)	4 (7%)	1 (3%)
Total	99	58	36
No response	21		
Number of Children			
None	34 (30%)	16 (25%)	18 (41%)
1-3	74 (66%)	47 (72%)	24 (55%)
>4	4 (4%)	2 (3%)	2 (4%)
Total	112	65	44
No response	8		

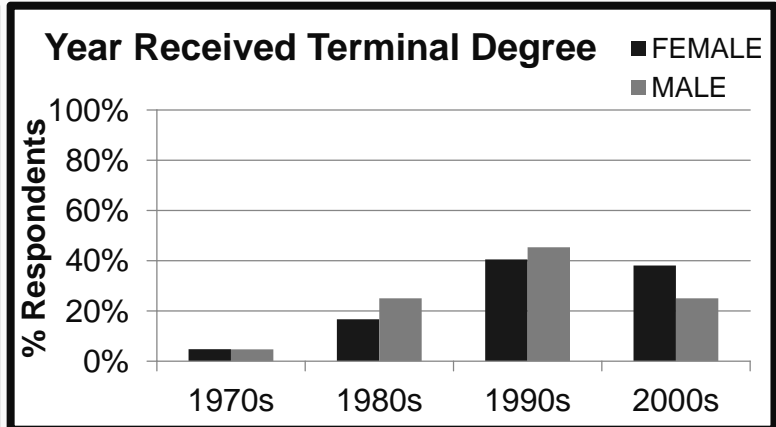


Figure 1a

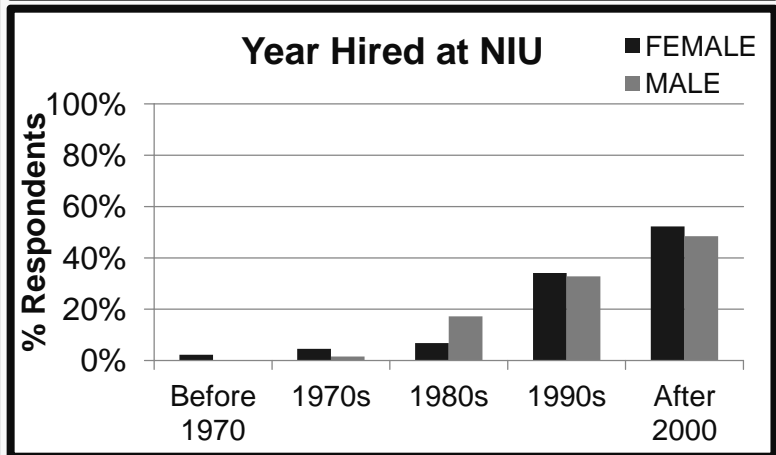


Figure 1b

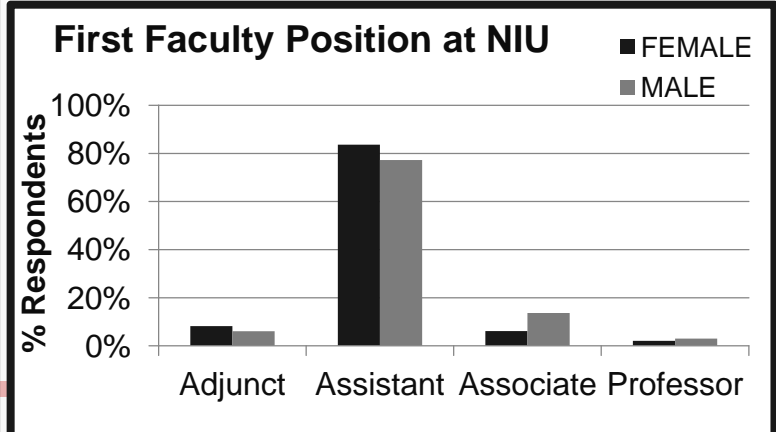


Figure 1c

2. Satisfaction

This section of the survey contained ten questions that addressed the following notion of satisfaction: (A) satisfaction or dissatisfaction with current position and career progression at NIU, (B) considerations and attempts to leave NIU or academia in general, and (C) what factors contribute to or detract from satisfaction at NIU.

A. Satisfaction or dissatisfaction with current position and career progression at NIU

Both female and male respondents were generally satisfied (49% females, 53% males) or very satisfied (22% females, 27% males) with their current position at NIU, with males reporting only slightly higher overall satisfaction (Figure 2a). When analyzed based on STEM versus non-STEM disciplines, STEM faculty were generally less satisfied than non-STEM faculty, regardless of gender (female: 64% STEM, 74% non-STEM; male: 71% STEM, 88% non-STEM) (Figure 2b).

Women were more dissatisfied with career progression, with 23% of females reporting dissatisfaction (dissatisfied or very dissatisfied), compared to only 10% of males (Figure 2c). Within disciplines, STEM faculty reported lower satisfaction with their career progress at NIU (36% STEM females, 64% STEM males) as compared to non-STEM faculty (64% non-STEM females, 81% non-STEM males) (Figure 2d).

Figure 2a

Satisfaction with position at NIU

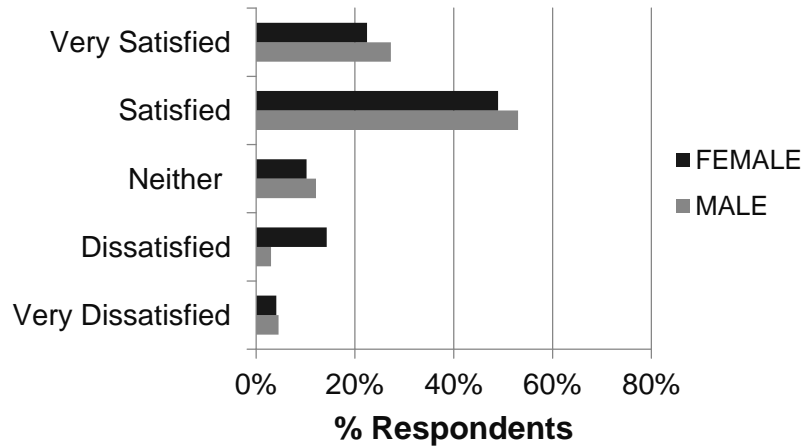


Figure 2c

Satisfaction with career at NIU

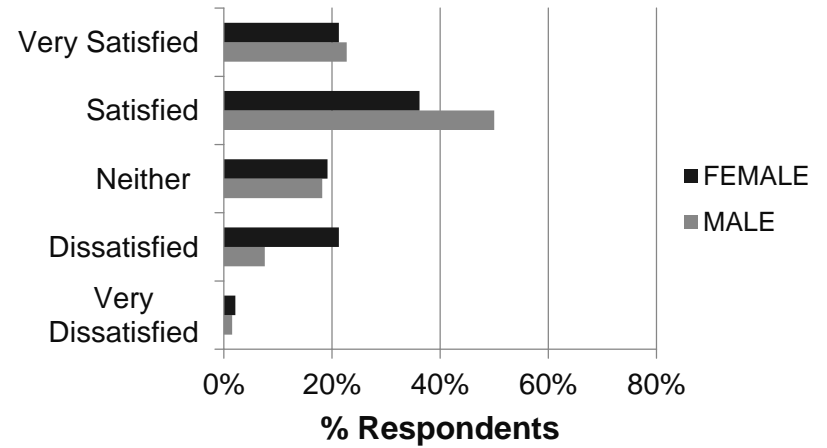


Figure 2b

Satisfaction with position at NIU

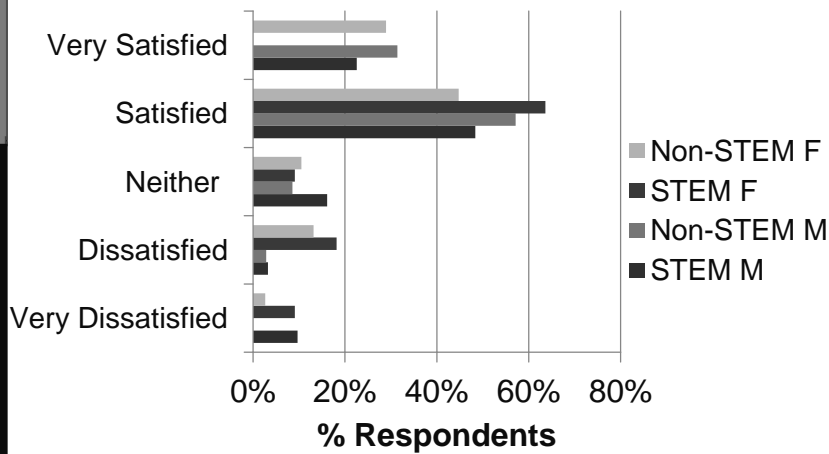
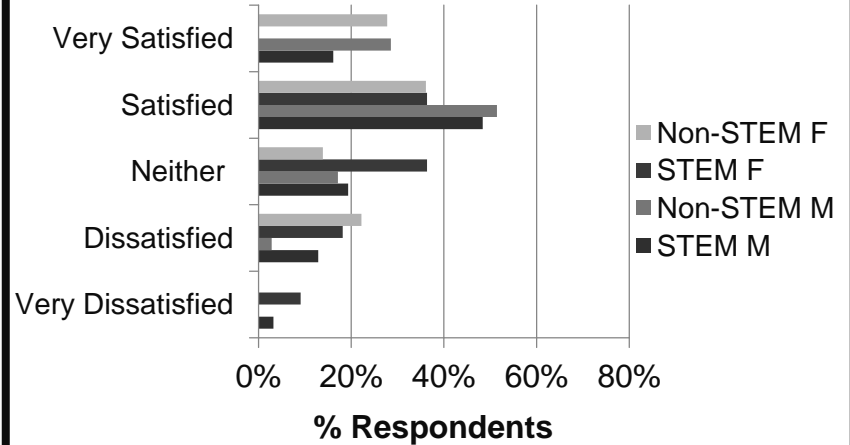


Figure 2d

Satisfaction with career at NIU



2. Satisfaction

B. Considerations and attempts to leave NIU or academia in general

In general, most respondents reported having seriously considered leaving their current position at NIU for another academic institution, with females being more inclined to consider leaving (female, 70% and male, 50%) (Figure 2e). When analyzed based on discipline, STEM males (55%) were more likely than non-STEM males (46%) to consider leaving their current institution, but the trend reversed when it came to STEM and non-STEM females (63% and 71%, respectively) (Figure 2f).

Of all participants, 65% reported disagreeing to some extent with the statement: “I have seriously considered leaving academia.” A minority of faculty reported having seriously considered leaving academia all together (female, 32% and male, 21%). When analyzed based on discipline, non-STEM females had the highest proportion of respondents who reported having seriously considered leaving academia (37%), followed by STEM male participants (32%) (Figure 2g).

Survey participants were also asked to report whether they had applied for a job at another university or college while working at NIU. Just over half of all participants reported that they had not applied for another job (52%). When analyzed based on discipline, STEM disciplines had a slightly lower proportion of respondents reporting that they had applied for a job at a different university/college (44% STEM and 50% non-STEM). Both STEM and non-STEM females had a higher proportion of respondents who reported that they had applied for a job at a different university/college than their male counterparts (50% STEM females and 42% STEM males; 58% non-STEM females and 41% non-STEM males) (Figure 2h).

Figure 2e

Considered leaving NIU for another academic institution

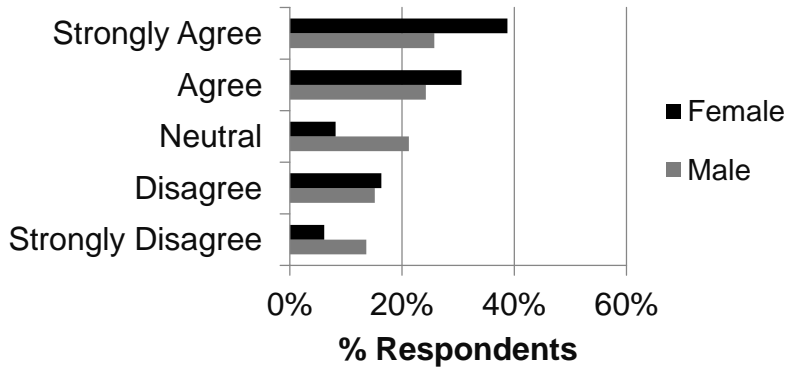


Figure 2g

I have strongly considered leaving academia

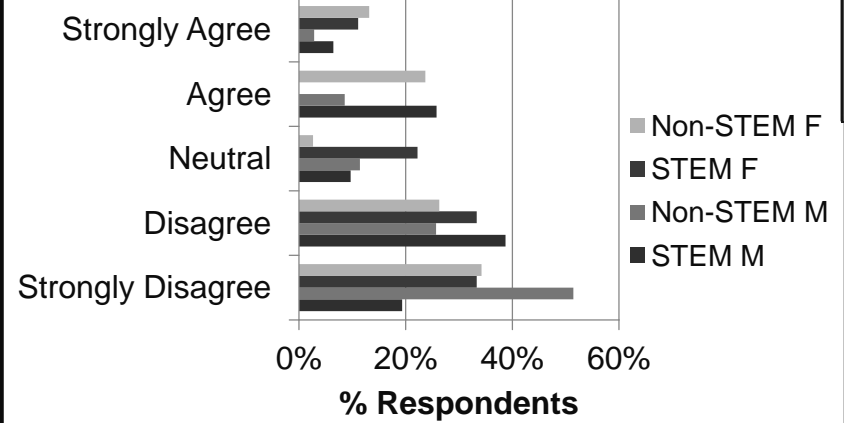


Figure 2f

Considered leaving NIU for another academic institution

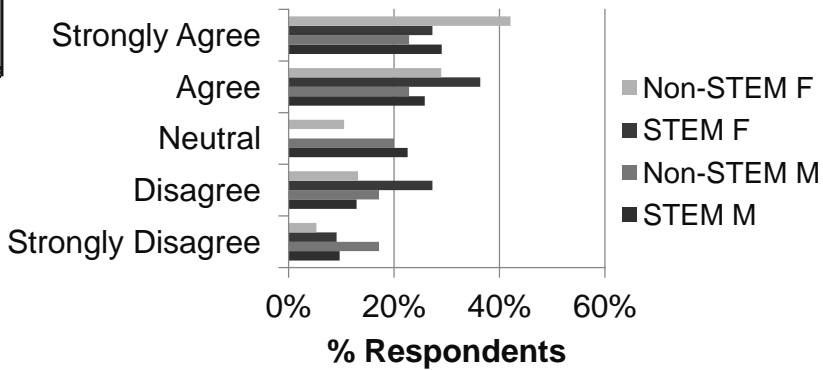
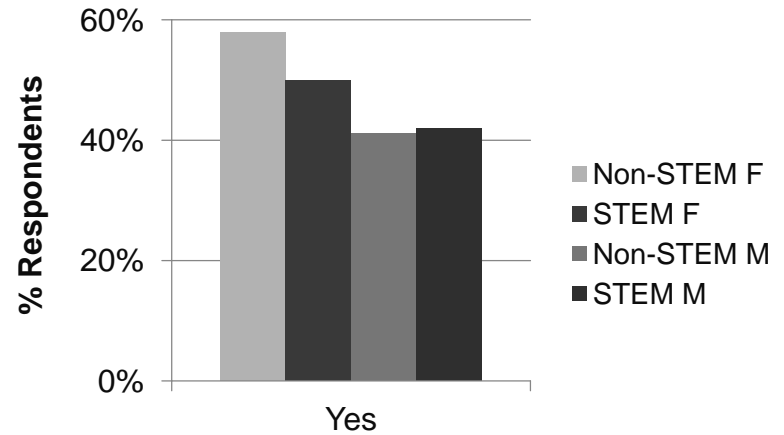


Figure 2h

Applied for job elsewhere?



2. Satisfaction

C. Contributing and detracting factors to satisfaction at NIU

Based on two separate open ended questions, the top ten factors contributing to and detracting from satisfaction at NIU, regardless of discipline, are shown in Table 2 and Table 3, respectively. Multiple responses were accepted, so proportions reported within the tables do not sum to 100%. Only 109 of the 120 respondents provided answers to this question. Regardless of gender, 42% of the respondents said that departmental atmosphere was the top factor that most contributed to satisfaction at NIU (Figure 2i). This was followed by student quality (31%), research support (20%), flexibility (17%), teaching (17%), and chair support (16%) (Table 2). All other categories were mentioned by less than 15% of the respondents, respectively.

A representative sample of written responses for factors contributing most to satisfaction at NIU:

- *“Good students, colleagues, the ability to teach classes in my specialty area.”*
- *“Support for research in the form of time to do it. Reduction of teaching load to 3:2.”*
- *“The freedom and flexibility to provide instruction to a diverse population of students. Working with engaged students that seek information beyond just the grade on the transcript.”*

2. Satisfaction

Regardless of gender, 33% of the respondents reported that balance of work priorities was the top factor that detracted most from satisfaction at NIU (Figure 2i). This was followed by student quality (29%), salary (22%), upper administration support (21%), research support (21%), and departmental atmosphere (17%) (Table 3). All other categories were mentioned by 15% or less of the respondents, respectively.

A representative sample of written responses for factors detracting from satisfaction at NIU:

- *“Teaching load is heavy in home department, especially when research expectations are high. Interesting to note that home department has more stringent requirement than other humanities departments for research.”*
- *“That I haven't had more colleagues who were interested in collaborating, including interdisciplinary collaboration, rather than follow their own research.”*
- *“Quality of students. Poor culture of research productivity.”*

Table 2

Table 2: Ten factors that most contributed to satisfaction at NIU

Response Category	Count (n=109)	% of Respondents*
Dept. Atmosphere	46	42%
Student Quality	34	31%
Research support	22	20%
Flexibility	19	17%
Teaching	18	17%
Chair Support	17	16%
Research freedom	15	14%
Research	15	14%
Upper Administration Support	14	13%
Teaching freedom	14	13%

*Because multiple responses were accepted, the % does not sum to 100.

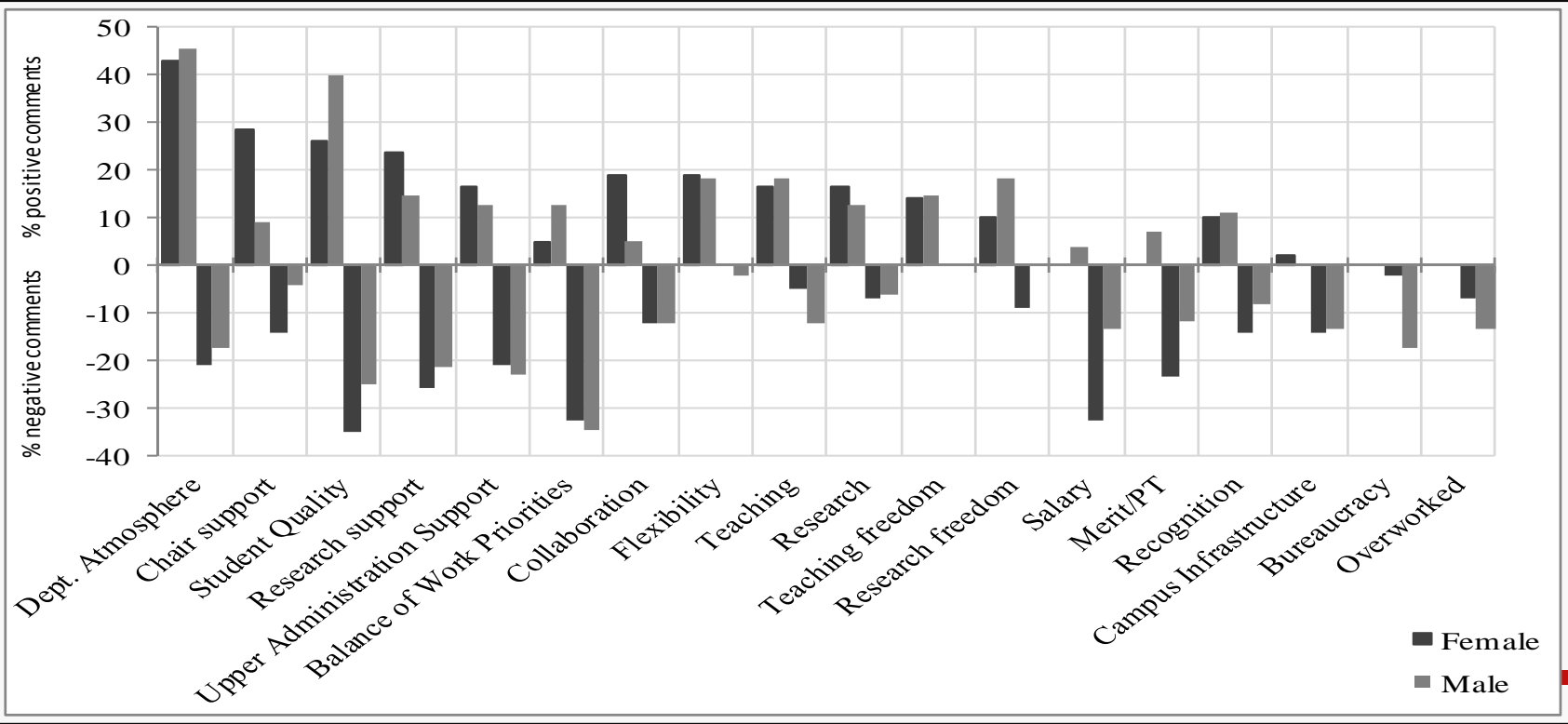
Table 3

Table 3: Ten factors that most detracted from satisfaction at NIU

Response Category	Count (n=109)	% of Respondents*
Balance of Work Priorities	35	33%
Student Quality	31	29%
Salary	24	22%
Upper Administration Support	22	21%
Research Support	22	21%
Dept. Atmosphere	18	17%
Merit/PT	16	15%
Campus Infrastructure	14	13%
Overworked	13	12%
Collaboration	12	11%

*Because multiple responses were accepted, the % does not sum to 100.

Figure 2i



3. Hiring Process

This section of the survey contained a five part question that addressed the following aspects of the hiring process at NIU: (A) overall satisfaction; (B) negotiation process; (C) interactions with the search committee and department faculty; and (D) perceptions of support in the form of resources.

A. Overall satisfaction with hiring process at NIU

Regardless of gender or discipline, 74% of the respondents reported being satisfied with the hiring process at NIU. STEM faculty reported slightly less satisfaction compared to non-STEM faculty (71% and 76%, respectively) (Figure 3a). Across gender and discipline, non-STEM male respondents reported the highest satisfaction (79%) (Figure 3a). Of non-STEM faculty, 19% were dissatisfied with the NIU hiring process, with non-STEM females reporting the group with the highest dissatisfaction (16%). It is noteworthy that none of the STEM faculty reported dissatisfaction with the hiring process at NIU.

B. Perceived success of negotiation during hiring process at NIU

Respondents were asked how successful they believed they were at negotiating for what they needed during the hiring process at NIU. Regardless of gender or discipline, a majority of the survey respondents reported that they negotiated successfully for what they needed (51%), with the remainder reporting either a neutral response (27%) or unsuccessful negotiations (22%). In general, STEM faculty reported a lower proportion of successful negotiations than non-STEM faculty (40% and 58%, respectively) (Figure 3b). The proportion of STEM female respondents reporting disagreement that they negotiated successfully was higher than that for STEM males disagreeing (30% and 20%, respectively). Overall, non-STEM males had the highest proportion of respondents reporting successful negotiations for what they needed during the hiring process at NIU (60%).

Figure 3a

"I was satisfied with the hiring process overall"

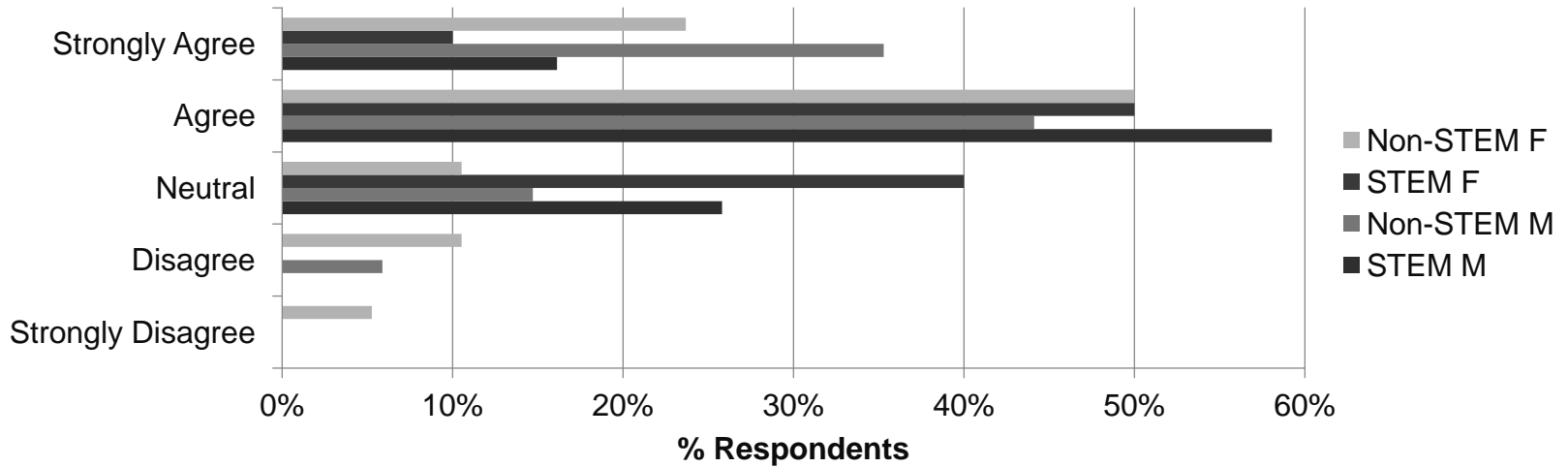
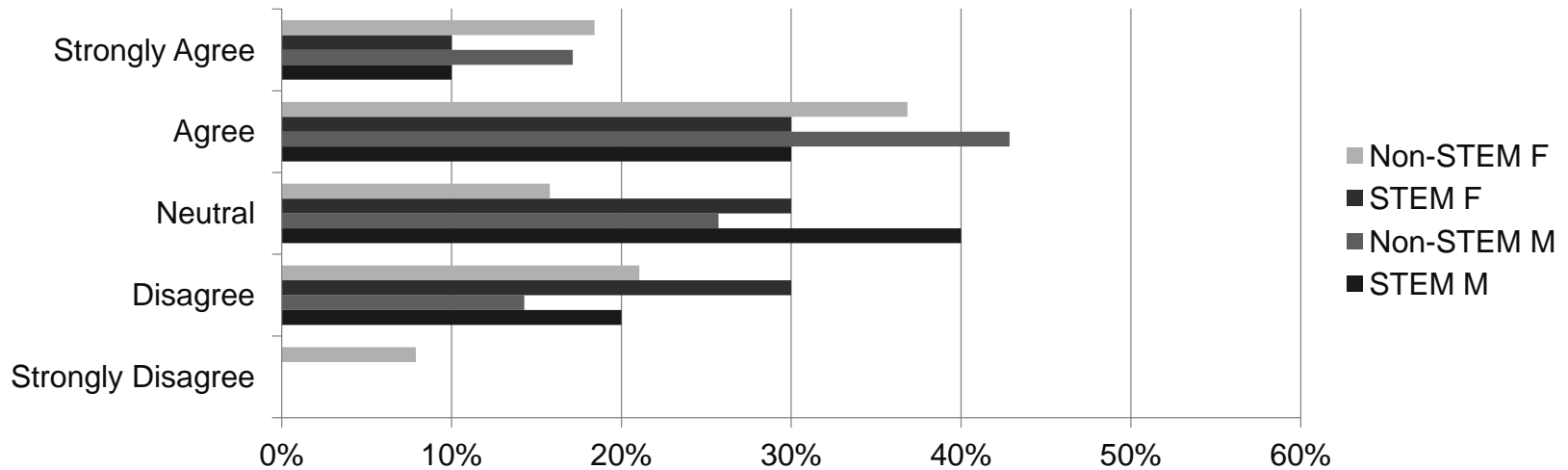


Figure 3b

"I negotiated successfully for what I needed"



3. Hiring Process

C. Perceived interactions made during the hiring process at NIU

Participants were asked to report whether they believed that the interactions with the search committee were positive during the hiring process at NIU. Regardless of gender or discipline, a majority of respondents reported that they had positive interactions with the search committee (89%). With respect to discipline, STEM faculty had a higher proportion of respondents reporting positive interactions with their search committees than non-STEM faculty (93% and 88%, respectively) (Figure 3c). STEM males had the highest proportion of respondents reporting positive interactions with the search committee during their hiring process at NIU (97%).

Regardless of gender or discipline, a majority of respondents reported agreeing or strongly agreeing that faculty in the department made an effort to meet them during their hiring process (82%). STEM faculty had a higher proportion of respondents reporting that effort had been made by departmental faculty members to meet them as compared to non-STEM faculty (85% and 79%, respectively) (Figure 3d). STEM females had the highest proportion of respondents who agreed that faculty in the hiring department made an effort to meet them (100%). Non-STEM males had the highest proportion of respondents who disagreed that department faculty made an effort to meet them (11%).

D. Perceived resource support provided during the hiring process at NIU

Also related to hiring, 70% of the survey respondents reported that they believed their hiring department did its best to obtain resources for them. While STEM respondents agreed with department support in obtaining resources on their behalf (males 71%, females 70%), non-STEM males had a slightly higher proportion of respondents who reported agreeing that the hiring department did its best to obtain resources for them when compared to their female counterparts (77% non-STEM males, 63% non-STEM females) (Figure 3e).

Figure 3c

"My interactions with the search committee were positive"

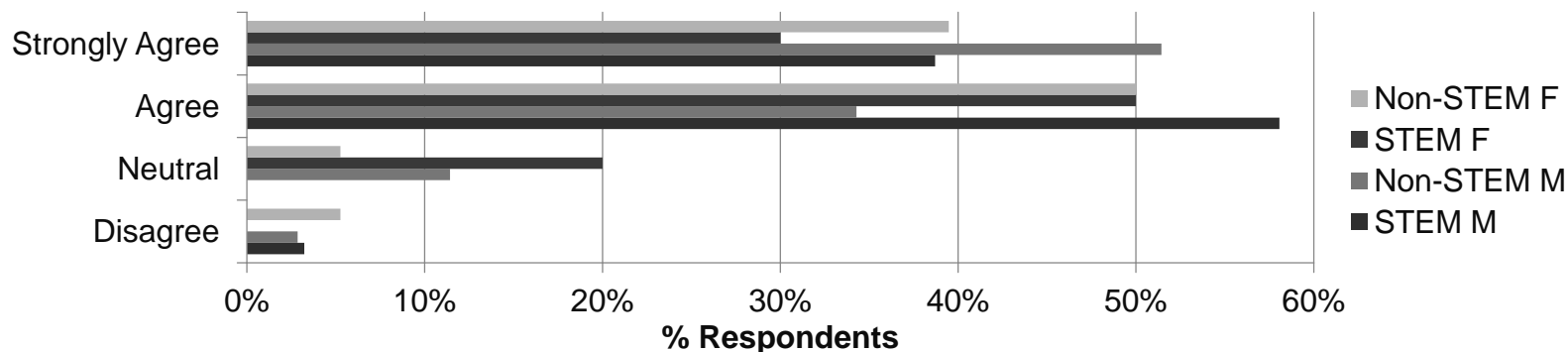


Figure 3d

"Department faculty made an effort to meet me during the hiring process"

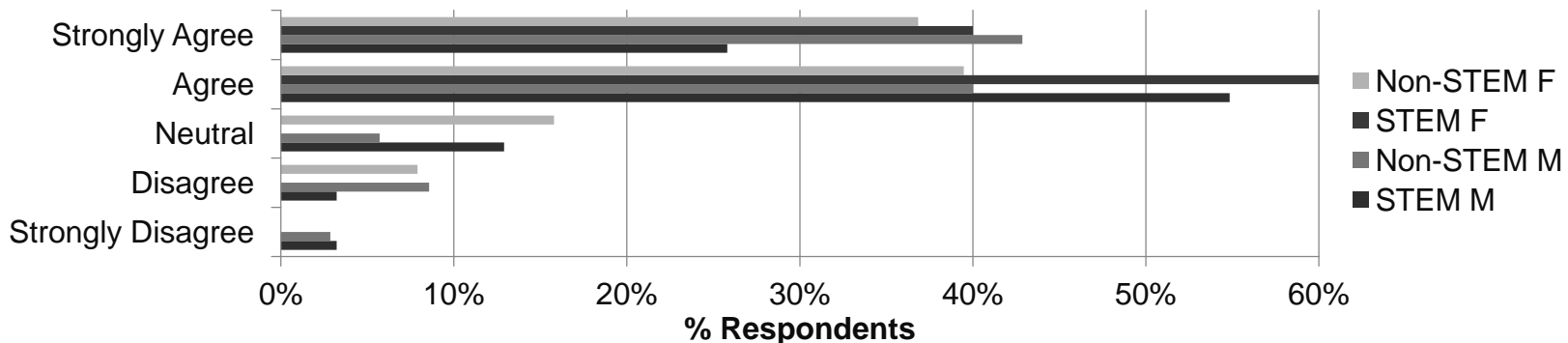
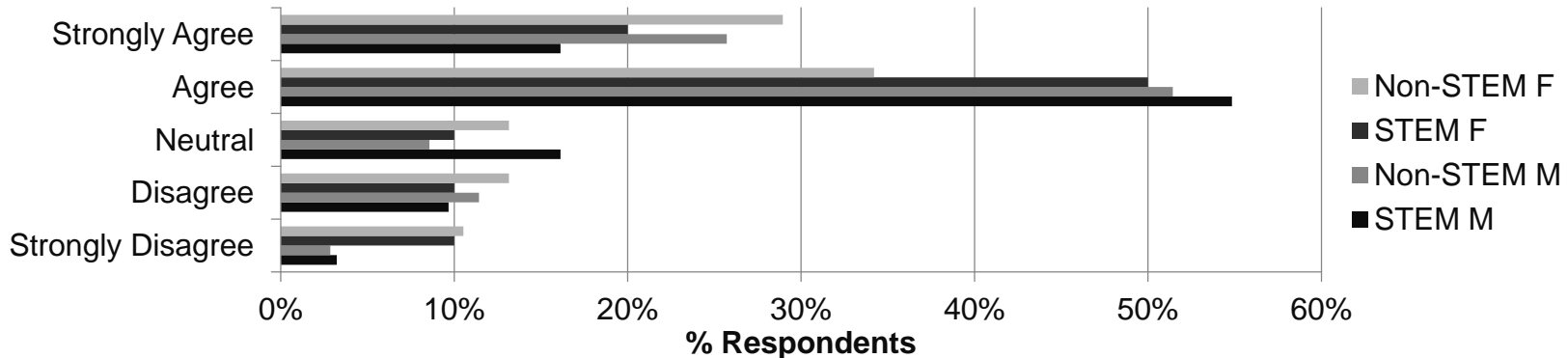


Figure 3e

"The department did its best to obtain resources for me"



4. Professional Activities

This section of the survey contained a variety of questions that addressed the following aspects of professional activities occurring at NIU: (A) teaching, (B) research, and (C) service.

A. Teaching

First, faculty were asked to self report the number of distinct undergraduate course sections taught on average per academic year, excluding summer. Overall, the most common response was two undergraduate course sections (29%), followed by four (27%) and three (21%) course sections. The most common response among STEM male respondents was two undergraduate course sections (48%), while STEM female respondents reported three course sections (36%). Teaching four undergraduate course sections was the most common response of non-STEM participants, regardless of gender (Figure 4a).

Faculty were then asked to self report the number of distinct graduate course sections taught on average per academic year, excluding summer. One graduate course section was the most common response (47%). One graduate course section was also the most common response across disciplines. The next most common response within the STEM discipline was zero (33% females, 23% males), whereas non-STEM participants reported two course sections as the second most common number of graduate classes taught (31% females, 23% males) (Figure 4b).

Finally, faculty were asked to self report how often they taught preferred courses, *i.e.* those courses the faculty wanted to teach. Overall, 43% reported they were able to teach preferred courses every year (Figure 4c).

Figure 4a

Teaching load - undergraduate

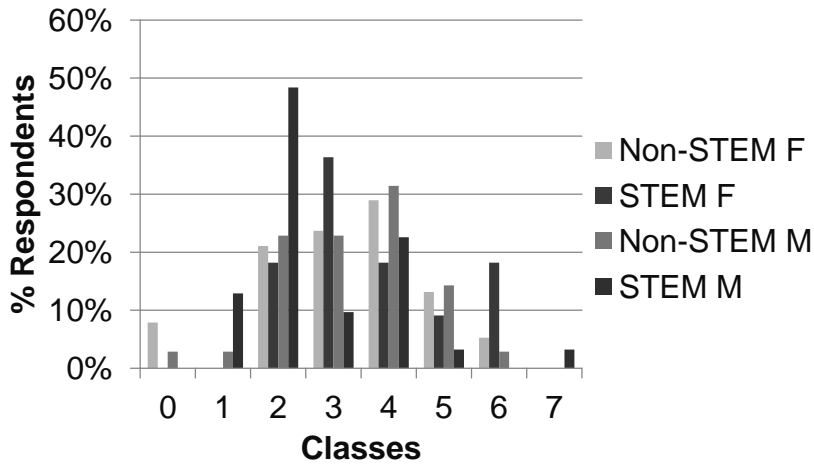


Figure 4b

Teaching load - graduate

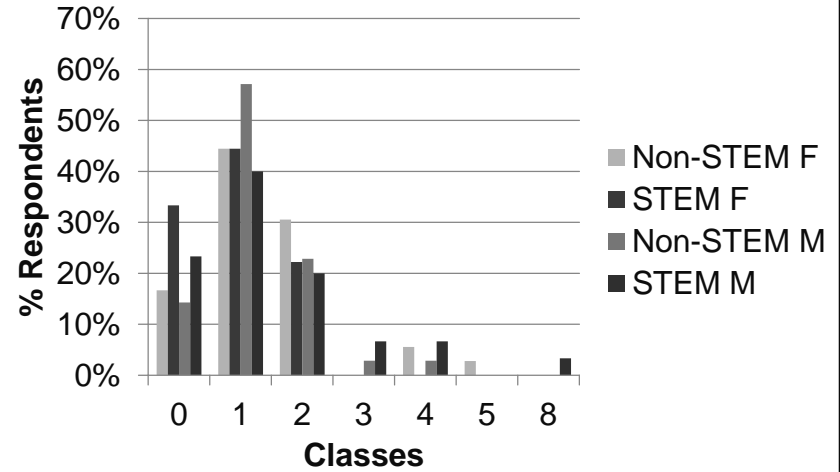
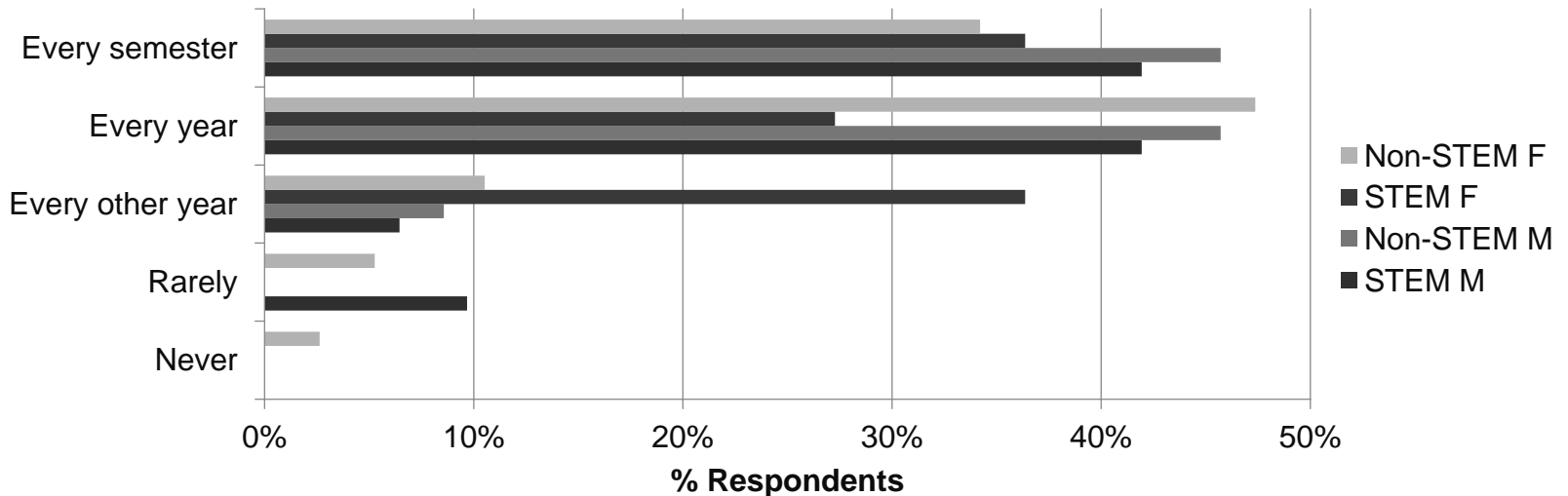


Figure 4c

"How often do you get to teach the courses you want to teach?"



4. Professional Activities

B. Research

Respondents were asked to report grant activity, national laboratory associations, and where applicable, satisfaction with working in a national laboratory – specifically that regarding respondent perceptions of equality and respect.

The survey asked respondents to report whether they had received grant support (PI/co-PI) in the past two years. The majority of respondents, regardless of gender or discipline, reported that within the past two years, their research had not been supported by a grant (63%). STEM males had a higher proportion of respondents who reported receiving grant support when compared to their female counterparts (48% and 36%, respectively). Non-STEM males had the highest proportion of respondents who reported no grant support (74%) (Figure 4d).

One-third of STEM faculty reported working with a national laboratory such as Argonne National Laboratory or Fermi National Accelerator Laboratory. The proportion of STEM male and female participation at the laboratories was 35% and 27%, respectively (Figure 4d). Of the respondents who reported working at a national laboratory, 94% reported either being satisfied or very satisfied (Figure 4e).

A majority of respondents agreed or strongly agreed that researchers at national laboratories were serious about treating men and women equally (69%, Figure 4f). When asked whether male colleagues are treated with higher respect than female colleagues at the national laboratories, a majority of STEM males disagreed (64%), whereas no STEM female disagreed. (Figure 4g). Few respondents believed that sex discrimination or harassment was a problem in the lab (Figure 4h). When presented with the statement “Men are more likely than women to be involved in informal social networks within the lab”, a majority of women agreed while men were neutral (Figure 4i).

Figure 4d

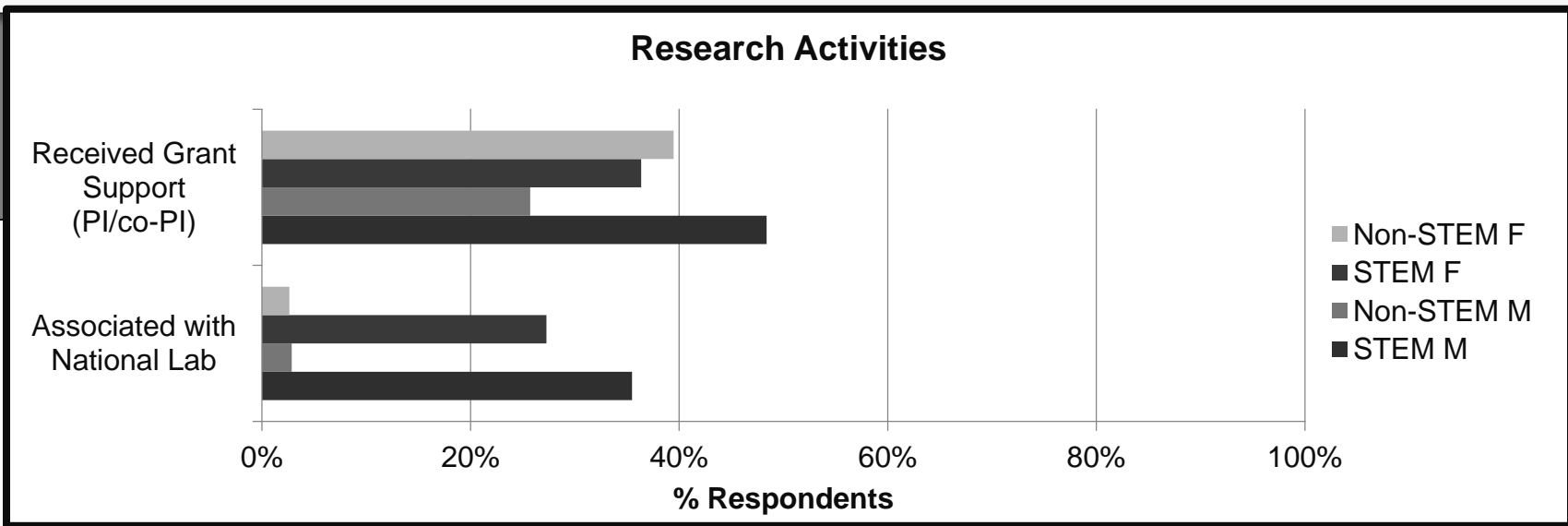


Figure 4e

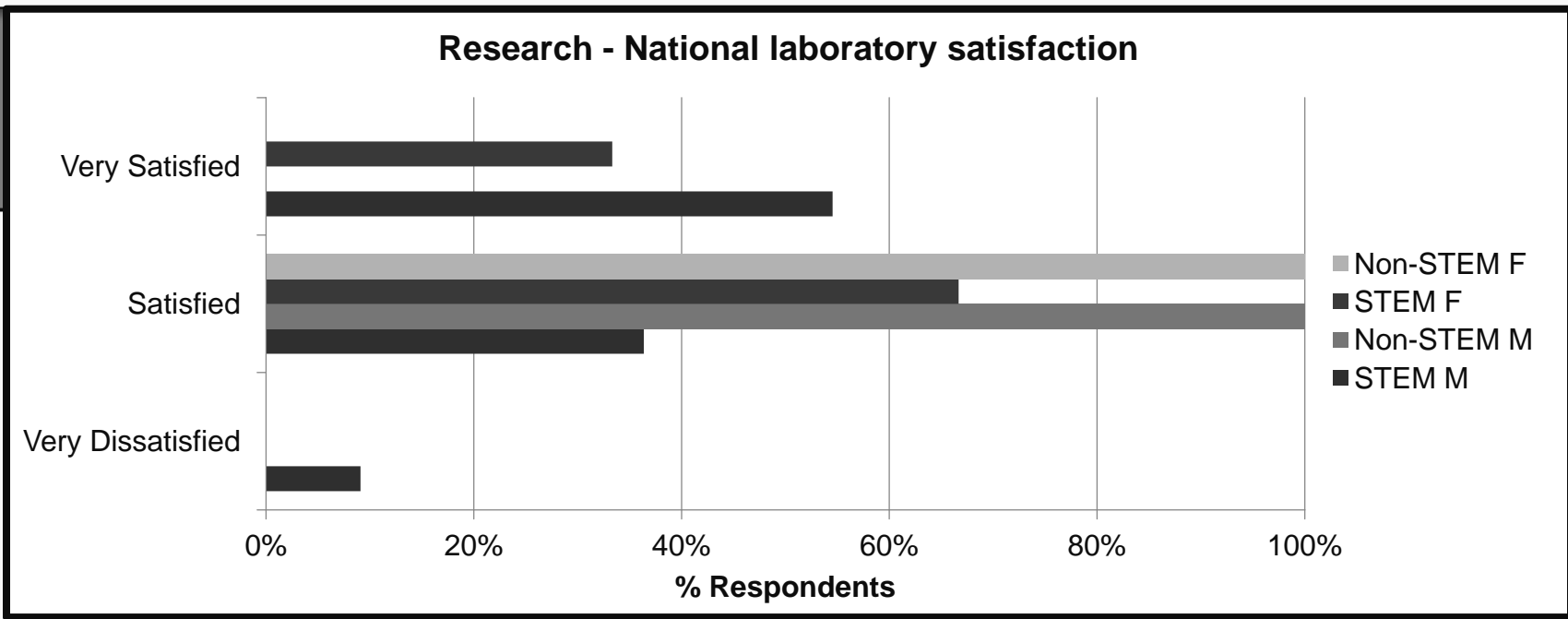


Figure 4f

**National lab work climate:
"Researcher serious about treating
men and women equally"**

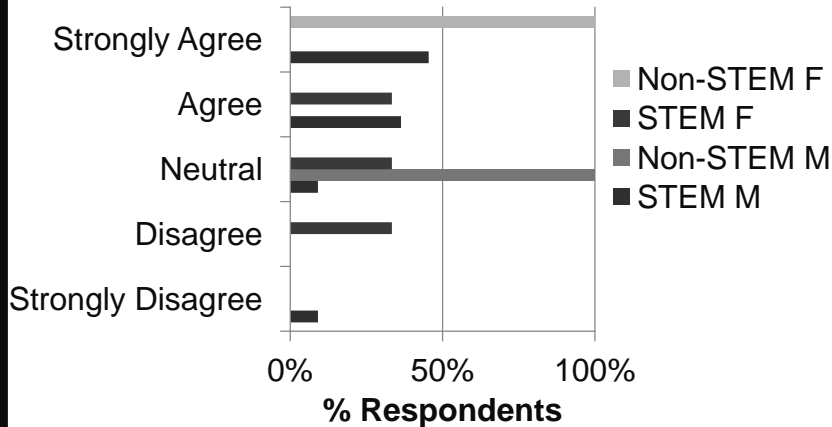


Figure 4h

**National lab work climate:
"Sex discrimination or harassment is
a problem in the lab"**

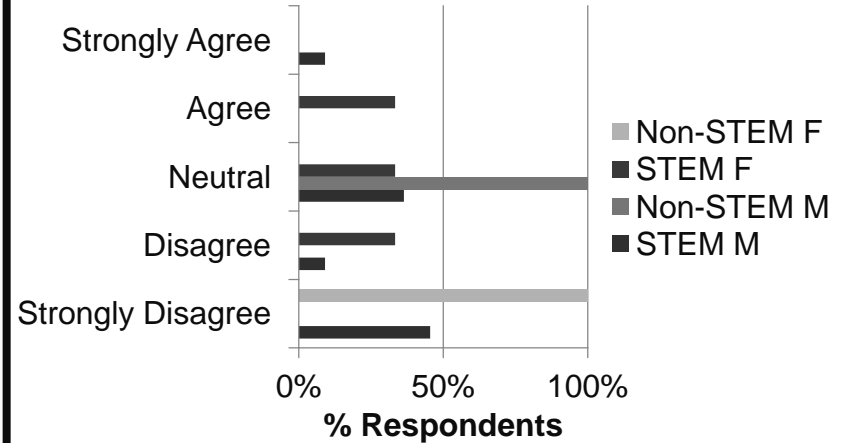


Figure 4g

**National lab work climate:
"Male colleagues treated with higher
respect than female colleagues"**

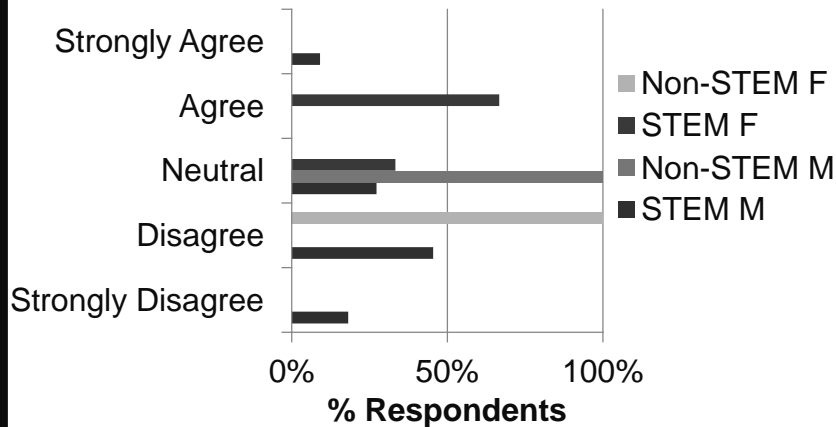
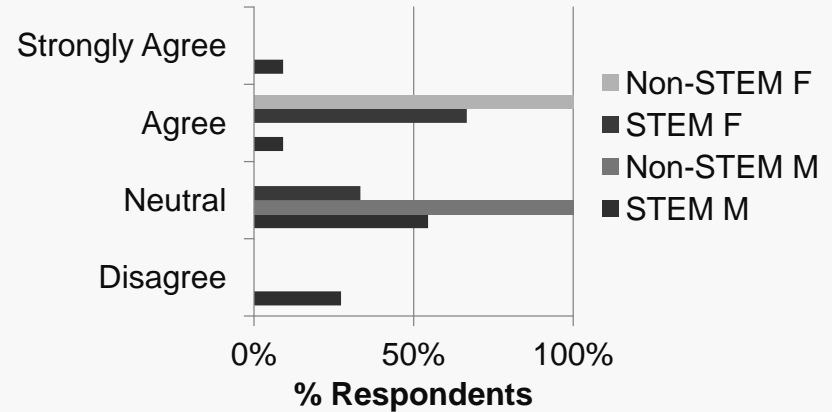


Figure 4i

**National lab work climate:
"Men are more likely than women to
be involved in informal social
networks within the lab"**



4. Professional Activities

C. Service

This section of the survey contained three multifaceted questions that addressed the following aspects of service activity at NIU: (1) service on departmental, college, and/or university level committees; (2) service in the capacity of department chair, assistant chair, college level administrative position, and/or university level administrative position; and (3) service in student mentoring activities. All respondents reporting participation in service activities are shown in Table 4.

More participants reported having served on department level committees than any other level of committee. For example, 59% of participants reported having served on department level personnel committees, while only 28% reported serving on college level committees and only 12% reported serving on university level personnel committees. Respondents also reported a higher level of service on department level curriculum committees (56%), than that of college (26%) or university level curriculum committees (15%). This dominant participation at the department level also applied to search committees, where 66% of respondents reported serving on department level search committees, while only 28% and 16% of respondents served on college and university level committees, respectively. While both STEM and non-STEM faculty chaired (22%, 15%) and served (33%, 65%) on department graduate admissions committees, it was found that STEM females only chaired such committees (STEM females 17%, STEM males 24%). Non-STEM gender comparisons were equiproportional across chaired (11%) and served (78%) female and male groups.

STEM chairs were prominent on departmental level governance and policy committees (20% STEM, 8% non-STEM). While both STEM females and STEM males chaired these committees (14% and 22%, respectively), it was found that non-STEM females did not chair such committees (0%, non-STEM males 15%). Non-STEM females were also absent from executive department level committees.

Table 4

Table 4: All reported service participation frequencies.		Frequency (%)													
		Total						Female				Male			
		ALL		STEM		Non-STEM		STEM		Non-STEM		STEM		Non-STEM	
Committee	Level	Chaired	Served	Chaired	Served	Chaired	Served	Chaired	Served	Chaired	Served	Chaired	Served	Chaired	Served
Personnel	Department	24%	59%	37%	37%	17%	71%	29%	29%	17%	76%	40%	40%	17%	65%
	College	3%	28%	8%	33%	0%	24%	0%	17%	0%	25%	11%	39%	0%	22%
	University	2%	12%	5%	16%	0%	9%	0%	17%	0%	13%	8%	15%	0%	6%
Curriculum	Department	20%	56%	29%	48%	15%	60%	33%	11%	14%	61%	27%	64%	15%	59%
	College	3%	26%	4%	30%	3%	24%	0%	25%	5%	25%	7%	33%	0%	22%
	University	5%	15%	13%	17%	0%	14%	25%	0%	0%	12%	7%	27%	0%	16%
Search	Department	22%	66%	18%	67%	23%	66%	0%	56%	21%	70%	25%	71%	26%	61%
	College	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	University	2%	16%	5%	29%	0%	9%	0%	29%	0%	11%	7%	29%	0%	6%
Graduate Admission	Department	17%	54%	22%	33%	15%	65%	17%	0%	11%	78%	24%	43%	11%	78%
Governance/Policy	Department	12%	49%	20%	40%	8%	53%	14%	43%	0%	59%	22%	39%	15%	46%
Executive	Department	7%	60%	8%	52%	7%	64%	11%	44%	0%	78%	6%	56%	14%	50%
College Council		3%	30%	10%	19%	0%	35%	0%	17%	0%	38%	13%	20%	0%	32%
University Council		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other		9%	32%	9%	26%	9%	36%	0%	22%	14%	36%	12%	27%	4%	36%

4. Professional Activities

C. Service, cont.

Overall, STEM faculty (specifically STEM males) had a higher proportion of respondents having chaired personnel committees. STEM females had the highest proportion of respondents having chaired departmental level and university level curriculum committees (25% and 33%, respectively). The highest proportion of respondents chairing university level search committees were STEM males (7%). Non-STEM males were the highest proportion of respondents who chaired department level search committees (26%); STEM males and non-STEM females followed closely (25% and 22%).

Faculty were also asked about leadership positions they had served in within the last five years, such as department chair, assistant chair, college level administrative position, and/or university level administrative position (Figure 4j). Regardless of discipline, males had the highest proportion of respondents reporting that they had served as either department chair (23% STEM males, 24% non-STEM males) or department assistant chair (29% STEM males, 34% non-STEM males). Most respondents reported that they did not serve in either a university or college level administrative position (97% and 96%, respectively). Contrary to the chair positions, and regardless of discipline, women had the highest proportion of respondents reporting that they had served on university level administrative positions (18% STEM females) and college level administrative positions (18% STEM females, 5% non-STEM females).

Respondents were also asked about various aspects of undergraduate and graduate student mentoring, i.e. course selection, organization advising, and undergraduate and graduate theses and/or project advising (Figure 4k). Most respondents were not currently involved with undergraduate student advising in relation to course selection (52%), nor undergraduate student organization advising (62%). STEM females had the highest proportion of respondents who participated in undergraduate student advising in relation to course selection (70%), while STEM males had the highest proportion of respondents who participated in undergraduate student organization advising activities (55%). Of all respondents, 66% were involved in undergraduate theses and/or project advising, while 86% were involved in graduate theses and/or project advising.

Figure 4j

Service – Leadership Positions

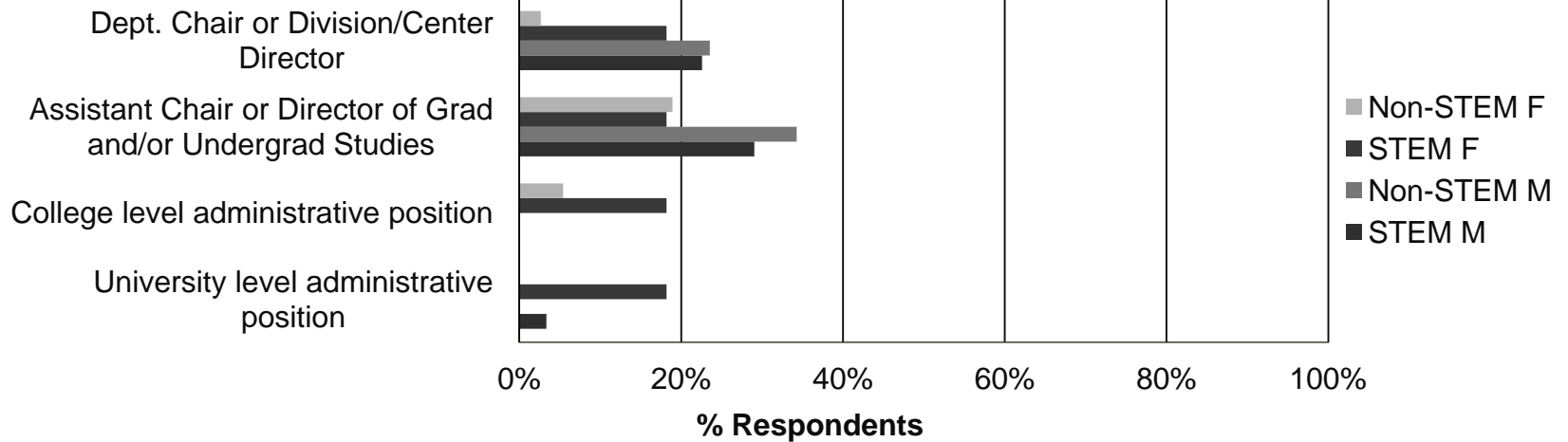
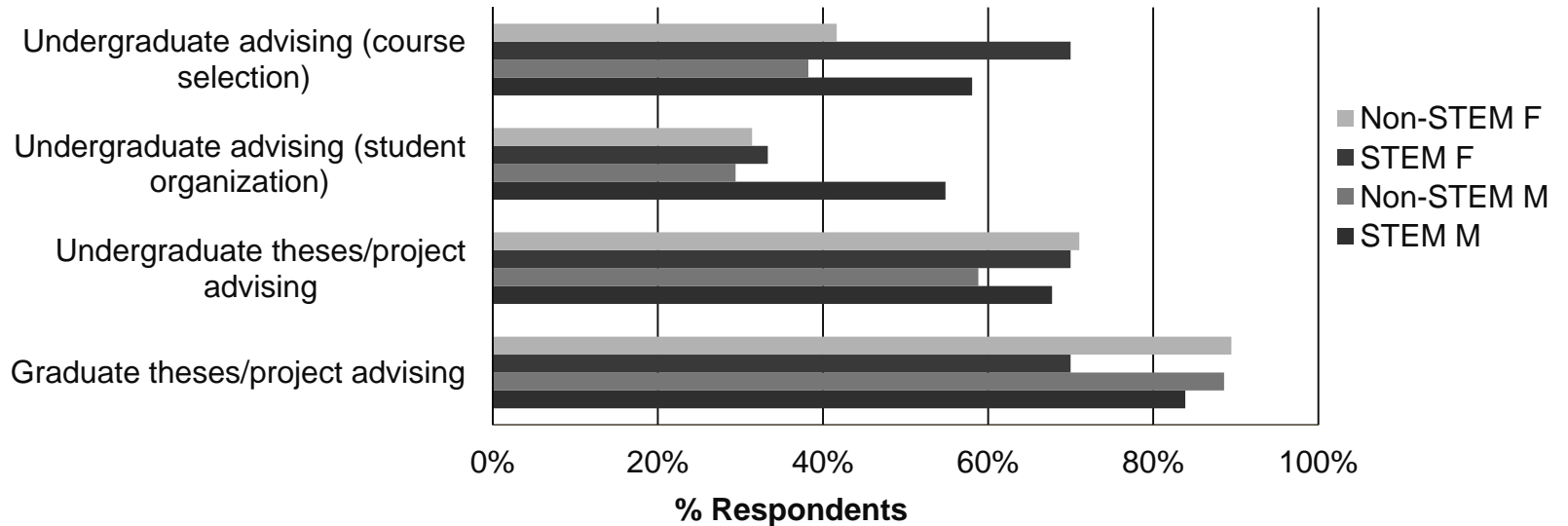


Figure 4k

Service - Mentoring



5. Productivity Measures

This portion of the survey asked respondents to: (A) select four indicators of productivity relevant to their area of research; (B) rate their overall level of research productivity, as compared to researchers in their area and rank nationwide; (C) rate their overall level of research productivity compared to researchers at the same rank within their department; and (D) report how they perceive their department views their research productivity, as compared to the respondent's perception of the departmental average.

A. Perceived indicators of productivity

Participants were asked to select up to four indicators that they deemed most reliable and informative relative to productivity within their area of research. The top five most important productivity indicators identified by respondents were number of articles published in refereed academic/professional journals, prestige of publication outlets, number of monographs written, number of presentations at national/international conferences, and number of book chapters. The productivity indicators that had the largest difference between male and female respondents were number of monographs written (47% female, 27% males), number of book chapters (35% females, 17% males), and total dollar amount of external grants (20% females, 35% males) (Figure 5a).

When response proportions were disaggregated by discipline, STEM faculty identified total dollar amount and number of external grants as important productivity indicators more than non-STEM faculty. Non-STEM faculty identified number of external fellowships, number of monographs written, number of book chapters, and prestige of publication outlets as important productivity indicators (Figure 5b).

Non-STEM females had the highest proportion of respondents who selected number of articles published in refereed academic or professional journals as an indicator of productivity, while all non-STEM faculty (females and males alike) had the highest proportion of respondents who selected the prestige of publication outlets as an indicator of productivity. Total dollar amount of external grants was important to all STEM faculty respondents, while non-STEM faculty respondents identified the number of monographs written as their most reliable and informative indicator of productivity (Figure 5b).

Figure 5a

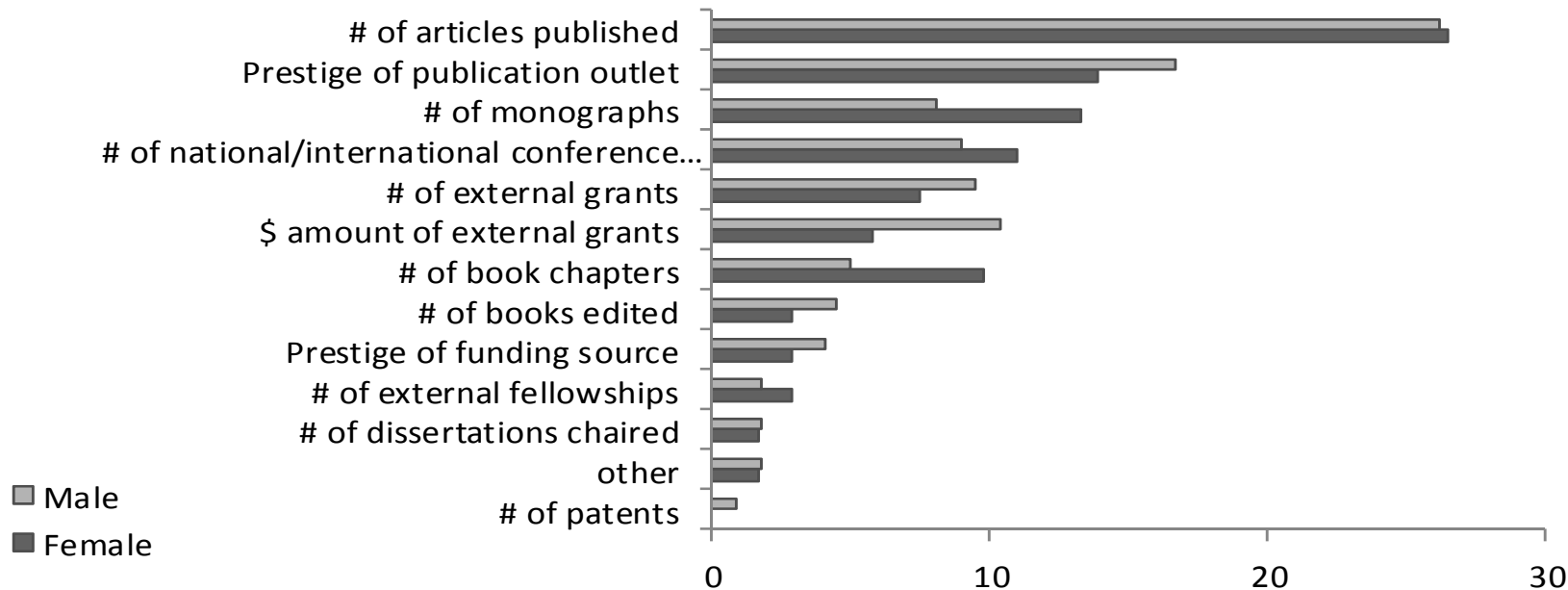
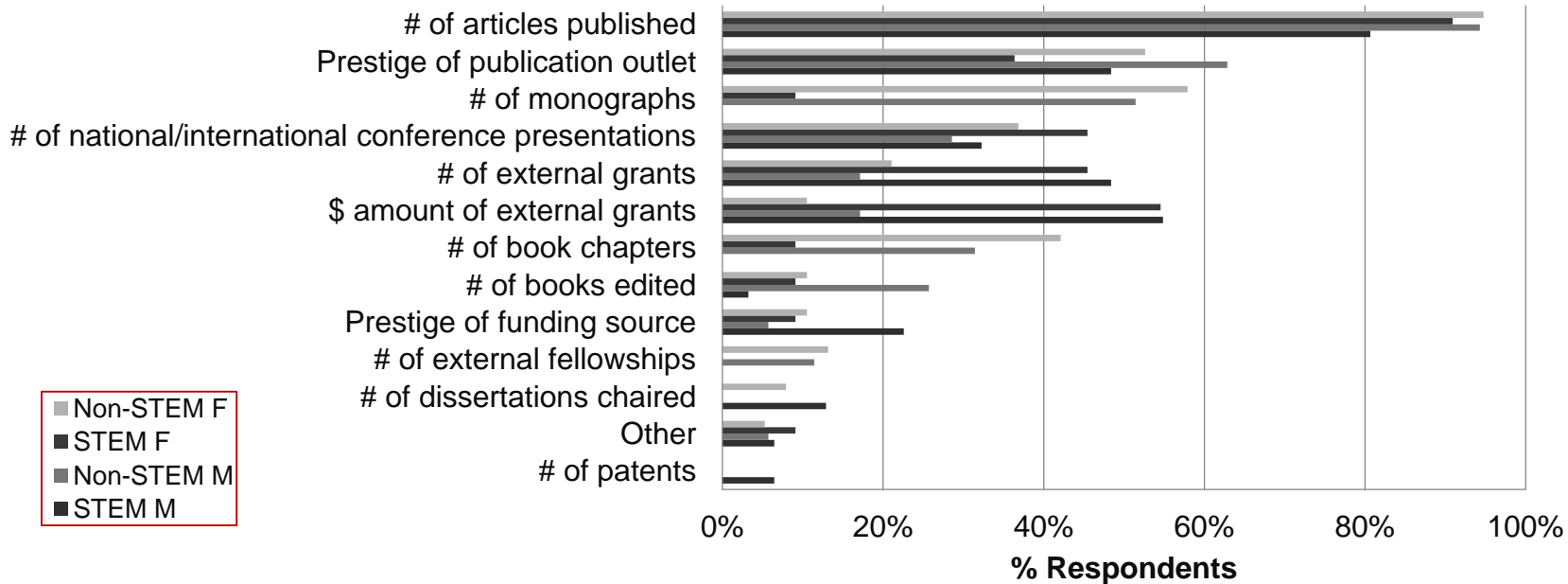


Figure 5b



5. Productivity Measures

B. Perceived overall level of research productivity – nationwide

Participants were asked to rate their overall level of research productivity compared to researchers in their discipline field at their same rank nationwide (Figure 5c). Regardless of gender and discipline, most respondents reported a medium level of research productivity relative to others in their same discipline field and rank nationwide (48%), followed by those who reported high or very high productivity (36%). Non-STEM males had the highest proportion of respondents who ranked themselves as having a high overall level of research relative to others in their same discipline field and rank nationwide (34%).

C. Perceived overall level of research productivity – departmental

Participants rated their overall level of research productivity compared to researchers at the same rank in their department (Figure 5d). Regardless of gender and discipline, most respondents perceived that their overall level of research productivity was high compared to others in their department (42%). In comparison to their colleagues, no non-STEM male respondents perceived their level of research productivity to be low, while females in both STEM and non-STEM disciplines had equally high proportions of respondents that reported a low perception of research productivity when compared to their colleagues. Non-STEM faculty, both females and males equally, had the highest proportion of respondents (24%) reporting very high productivity levels when compared to researchers at their same rank within their department.

D. Perception of department's opinion of research productivity

With regards to department research productivity, respondents not only were asked to rank their perception of their own research productivity within the department, but they were also asked to assess how their department colleagues perceived their level of research productivity within the department. Overall, STEM males perceived the department's view of their research productivity to be high to very high, while non-STEM males perceived a medium to high productivity perception. STEM and non-STEM females were distributed across very high, high and medium productivity perceptions. Female respondents, particularly STEM females, perceived their research productive as viewed by the department as lower than their own perception of their productivity (Figure 5e). While most respondents believed their colleagues valued their research, it is noteworthy to mention that a nontrivial proportion of STEM females (40%) and males (29%) believed their colleagues did not value their research (disagree, strongly disagree, Figure 5f).

Figure 5c

Perceived overall level of research productivity – nationwide

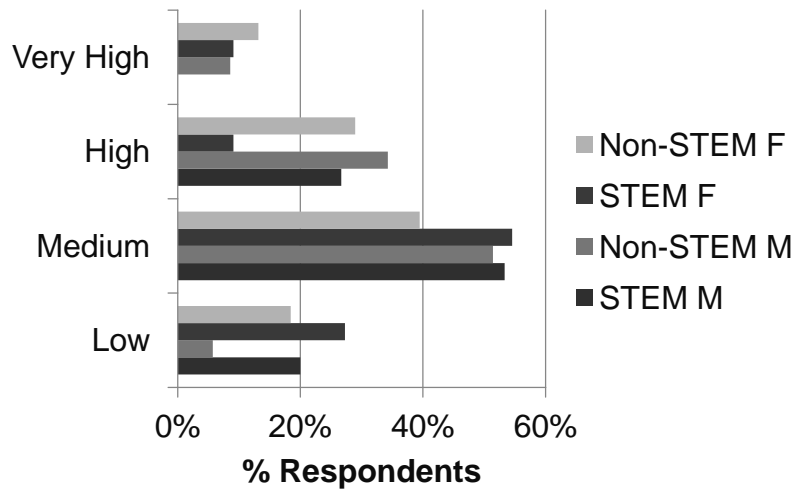


Figure 5e

Perception of department's opinion of research productivity

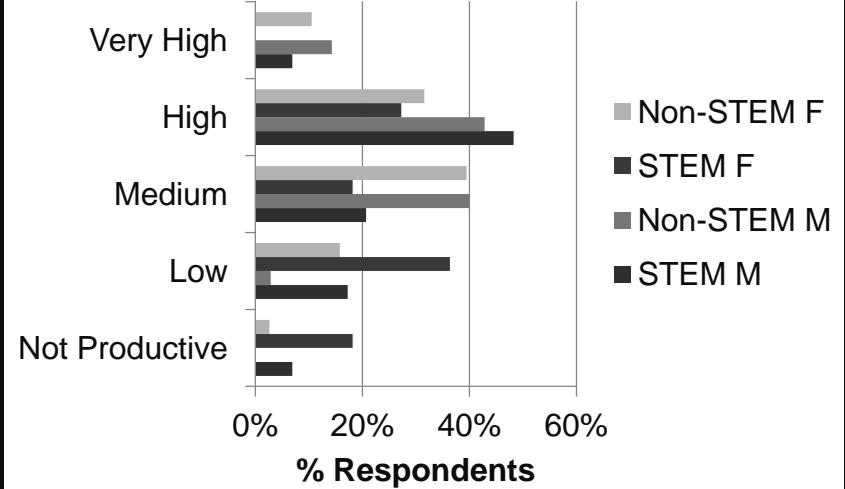


Figure 5d

Perceived overall level of research productivity – departmental

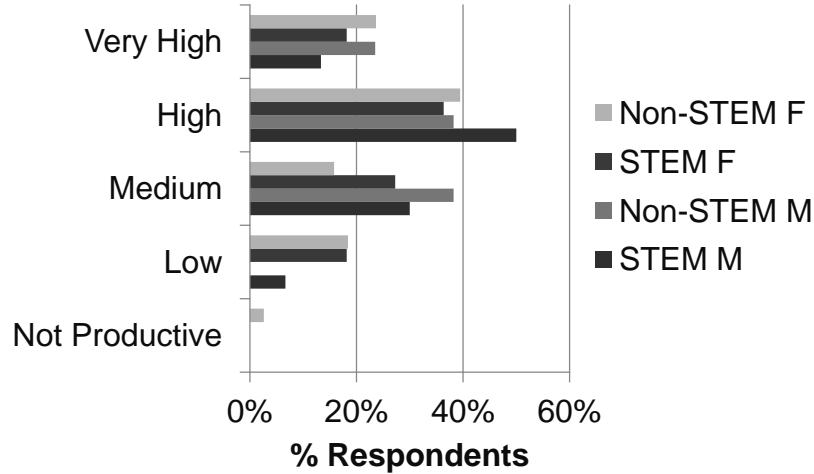
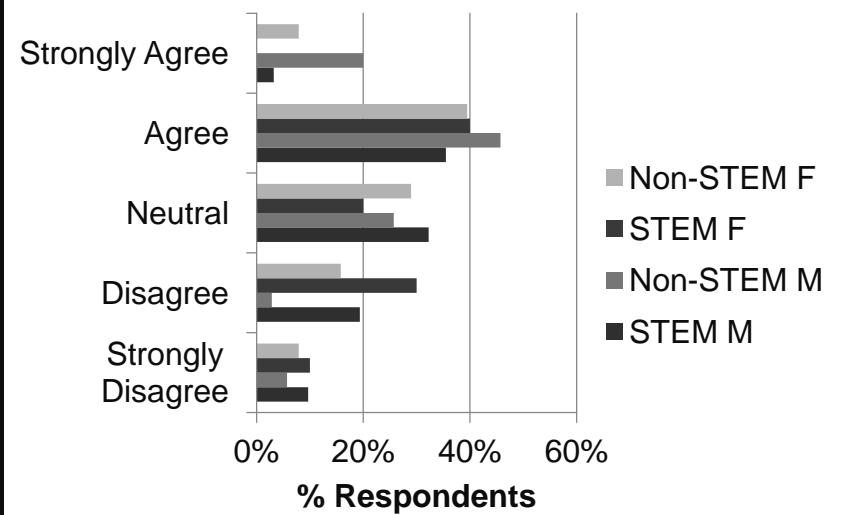


Figure 5f

Colleagues value my research



6. Perceptions of Recognition

This section of the survey had three questions addressing the participants' perception of departmental support in the areas of: (A) nominations for college-level or university-level awards, (B) lack of nomination for awards which they believe they were qualified, and (C) resources availability.

A. College or University level award nominations in teaching, research, and service

In general, most respondents reported that their department did not nominate them for awards recognizing teaching (79%), research (93%), service (94%), or other awards (96%) not listed on the survey. Females had a lower proportion of respondents who had been nominated for teaching (14% females, 25% males), service (2% females, 8% males), and other awards not listed (0% females, 9% males). This was not the case, however, with research awards, where females had a higher proportion of respondents who had been nominated by their department (11% females, 3% males; Figure 6a).

When response proportions were disaggregated by discipline, STEM males had the highest proportion of respondents reporting having been nominated for teaching (31%) and service (11%) awards by their department, while STEM females had the highest proportion of respondents (18%) reporting having been nominated for research awards by their department (Figure 6b).

B. Lack of nomination for awards for which they felt qualified

Of all respondents, 83% did not believe that their department failed to nominate them for an award for which the respondent thought they were qualified. More females (20%) than males (15%) reported having perceived that their department failed to nominate them for an award for which they thought they were qualified (Figure 6a). STEM females had the highest proportion of respondents who perceived that their department failed to nominate them for an award for which they thought they were qualified (44%), with STEM males a distant second (17%) (Figure 6b).

Figure 6a

Departmental Award Nominations by Gender

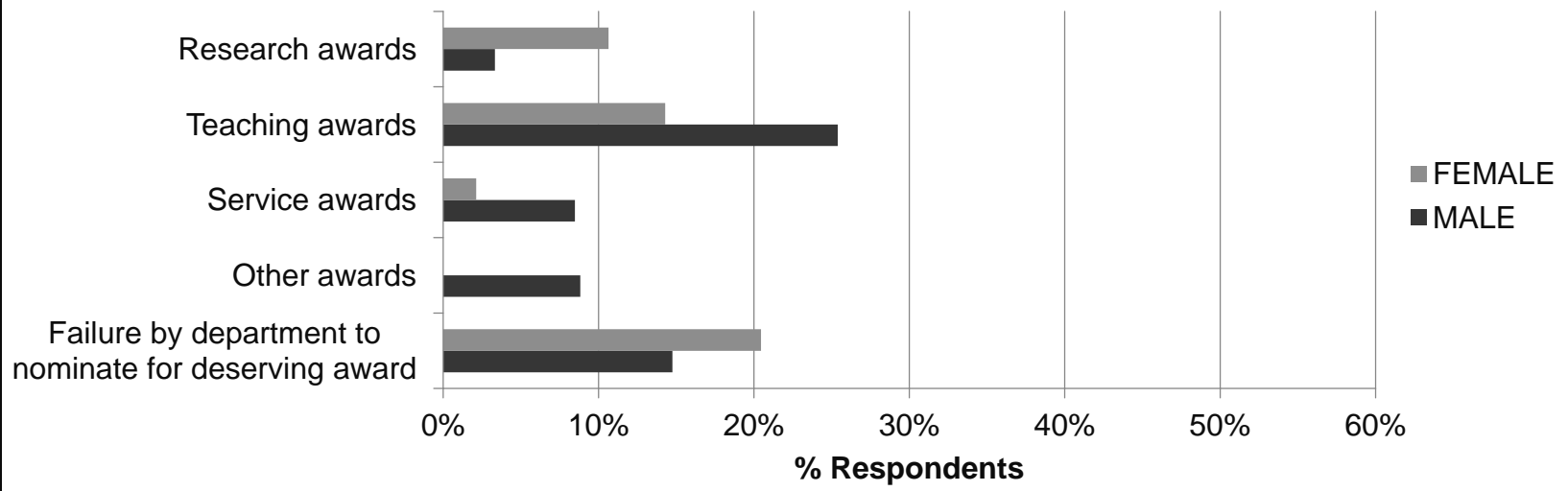
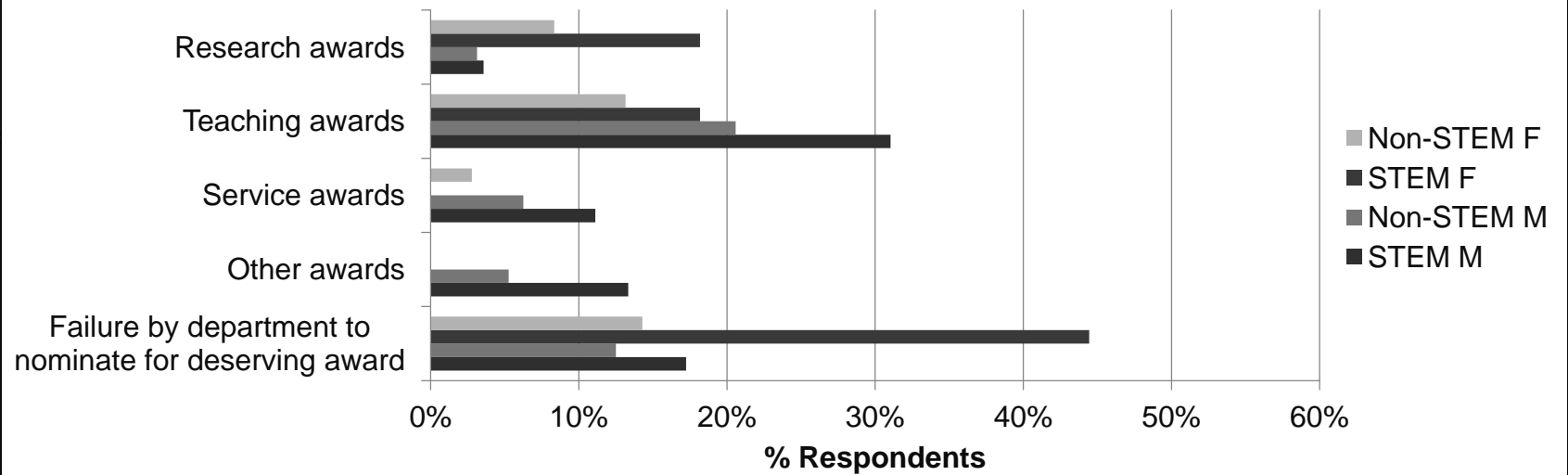


Figure 6b

Departmental Award Nominations by Discipline



6. Perceptions of Recognition

C. Perception of resource availability

Respondents were generally satisfied with the resources available to them, with a majority reporting that they had the equipment and supplies needed to conduct research adequately (63%). Non-STEM males, had the highest proportion of respondents reporting satisfaction (70%) (Figure 6c). Most respondents (54%) also reported that they were satisfied with the amount of maintenance/upgrades made to their equipment, in comparison to their department peers. However, most STEM females (75%) reported dissatisfaction at the amount of regular maintenance or upgrades made to their equipment, as compared to their department peers (Figure 6d).

Figure 6c

I have the equipment & supplies I need to conduct my research adequately

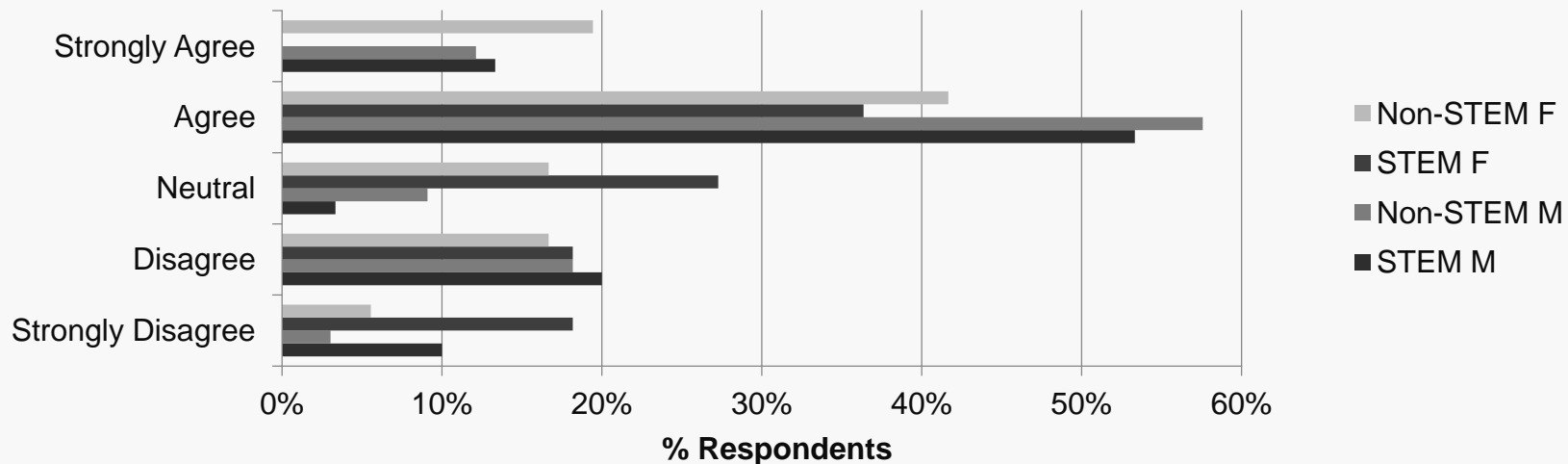
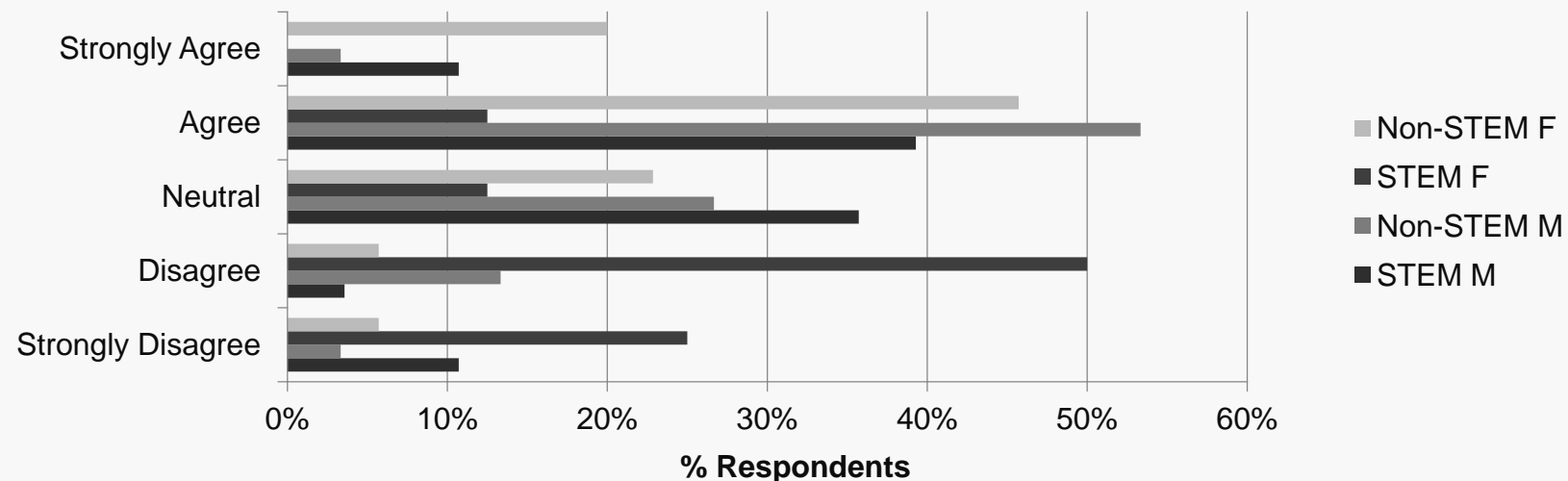


Figure 6d

I receive regular maintenance/upgrades of my equipment, compared to my peers in the department



6. Perceptions of Recognition

C. Perceptions of resource availability, cont.

A majority of the survey participants also reported that they had sufficient office space in terms of both size (69%) and quality of resources (63%) (Figures 6e and 6f). Most respondents agreed that laboratory space was sufficient in terms of size, but not all respondents believed their laboratory space was sufficient in terms of the quality of resources. STEM males had a slightly higher proportion of respondents than STEM females who agreed or strongly agreed that their lab space was a sufficient in size (67% STEM males and 50% STEM females) and that the quality of laboratory resources was sufficient (46% STEM males and 43% STEM females) (Figures 6g and 6h).

Figure 6e

Office space is sufficient size

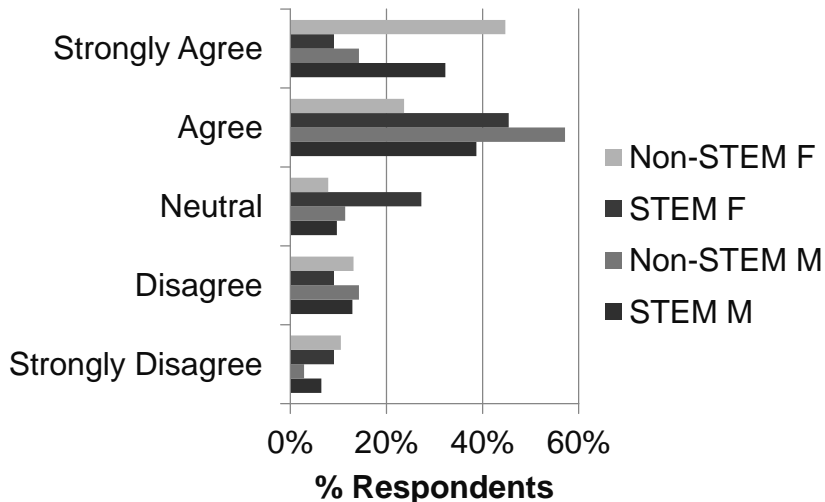


Figure 6g

Lab space is sufficient size

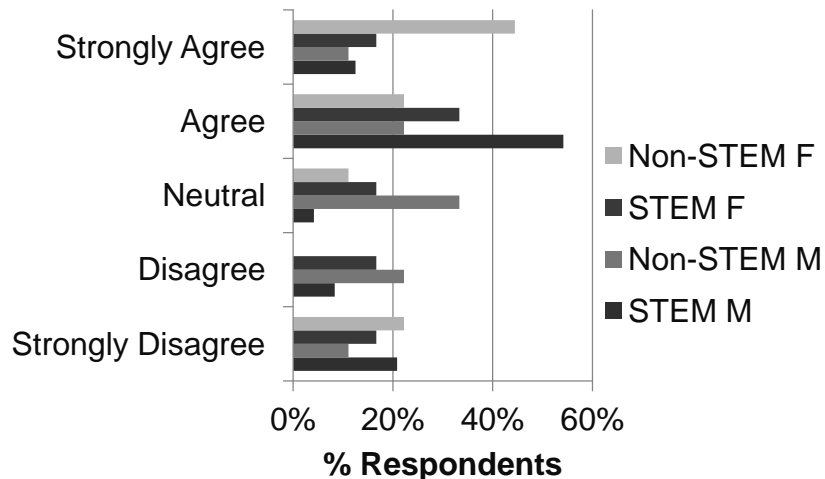


Figure 6f

Office space has sufficient quality of resources

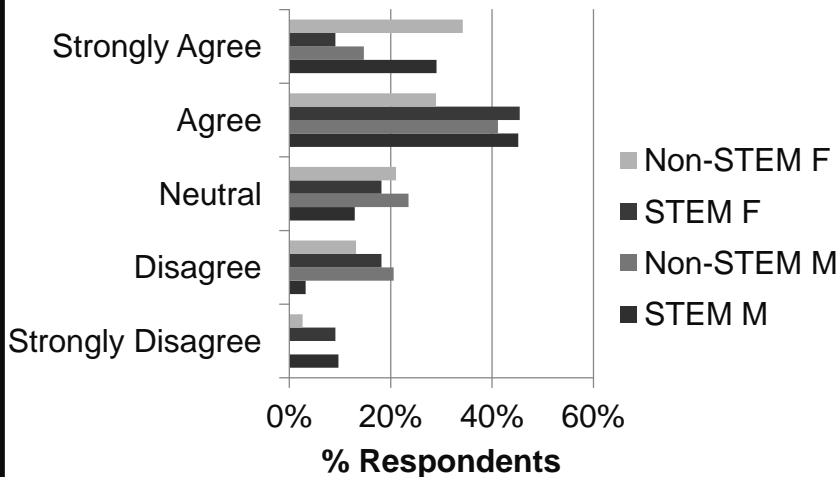
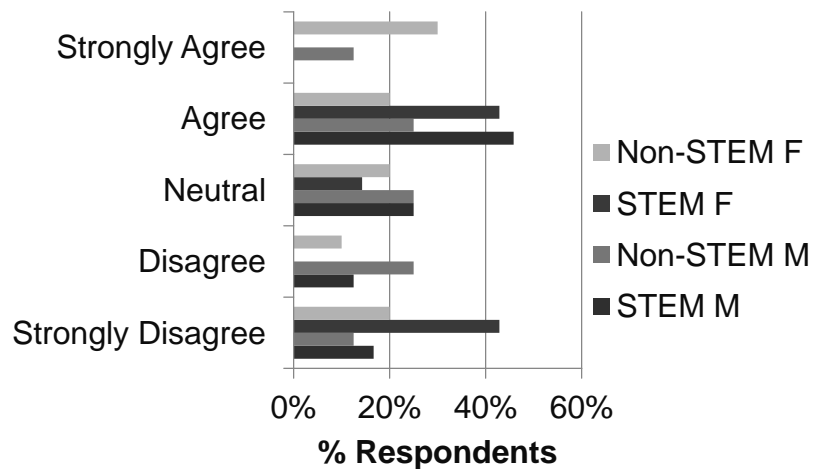


Figure 6h

Laboratory space has sufficient quality of resources



6. Perceptions of Recognition

C. Perceptions of resource availability, cont.

Approximately half of all the survey respondents reported that they have colleagues on campus who do similar or complementary research, regardless of gender or discipline (Figure 6i). More than half of all respondents (56%) also reported that they had access to colleague or peer mentorship by way of career advice or guidance. STEM females (60%) and non-STEM males (68%) had a higher proportion of participants reporting that they either agreed or strongly agreed with this statement, compared to their respective counterparts (42% STEM males, 56% non-STEM females) (Figure 6j). Only a quarter of all respondents, however, reported that they participate in formal mentoring programs. Non-STEM females (41%) had the highest proportion of participants reporting participation in formal mentoring programs; STEM females had the highest proportion of no formal mentoring program participation (Figure 6k).

Most respondents indicated that colleagues and peers were available to them at the university, for career advice or guidance, and that they could identify one or more mentors in their own department. Yet, 59% of STEM males were either neutral or disagreed that colleagues and peers were available, and 60% of STEM females were either neutral or disagreed that one or more mentors could be identified in their department (Figure 6l).

For teaching support, just under half (48%) of all participants reported that they had sufficient support, e.g. Graduate or Teaching Assistants. When broken into disciplines, however, STEM females had the highest proportion of respondents who reported insufficient teaching support (50%), especially when compared to their male counterparts.

Figure 6i

I have colleagues on campus who do similar or complementary research

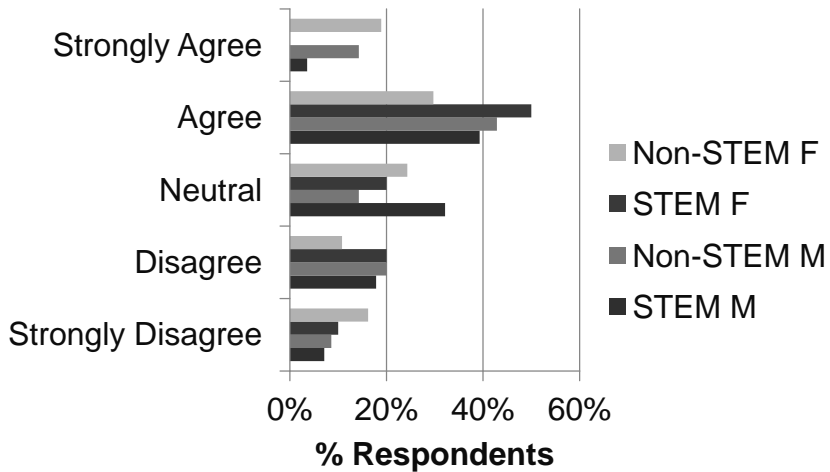


Figure 6k

Participation in formal mentoring programs

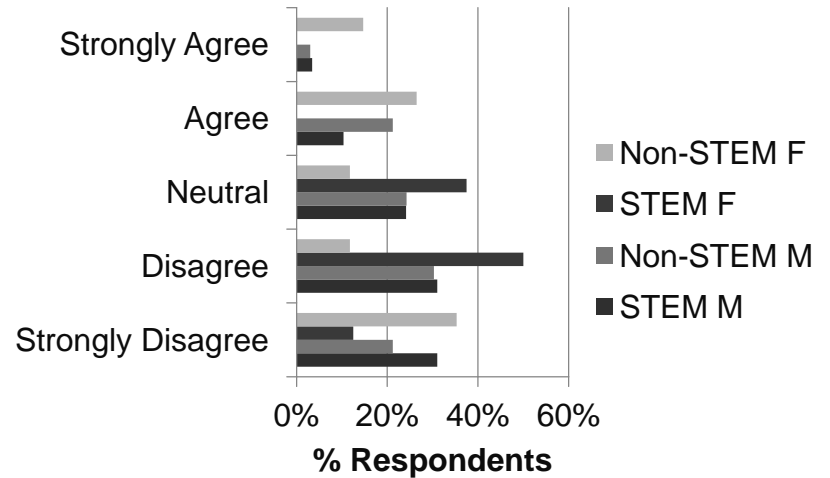


Figure 6j

I have colleagues or peers at NIU who give me career advice or guidance when I need it

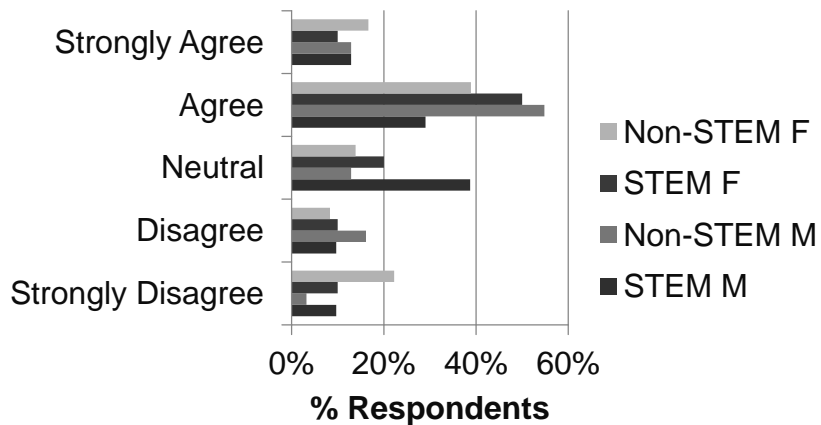
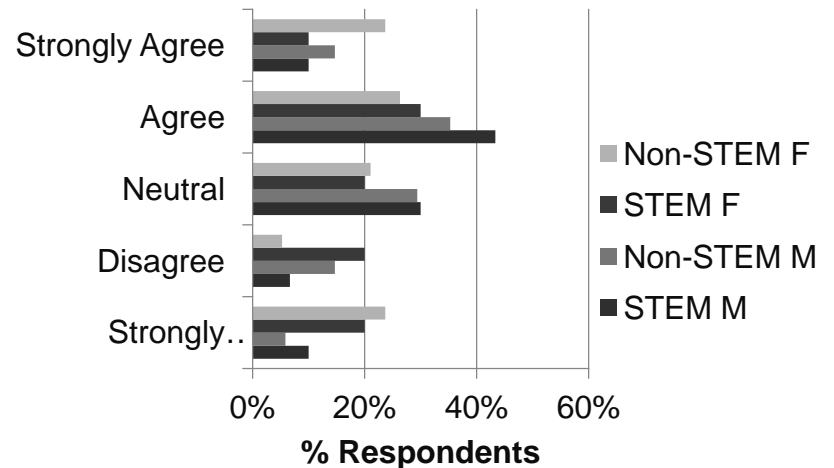


Figure 6l

I can identify one or more mentors in my department



7. Perceptions of Equality (Agency and Respect)

This section of the survey contained four multifaceted questions for respondents about agency and respect: (A) interactions with colleagues and others in their primary department and (B) work climate within their department. It also contained two multifaceted questions concerning the recruitment of, climate for, and leadership of: (C) women faculty and (D) racial minority faculty in the participants' primary department, relative to the department's faculty size.

A. Interactions with colleagues and others in their primary department

In general, most respondents reported that they were treated with respect by both their colleagues (84%) and department staff (94%). Both STEM (10%) and non-STEM (16%) female faculty respondents had the highest proportion of respondents who reported not being treated with respect by their colleagues (Figures 7a and 7b).

While most respondents (82%) agreed that students treated them with respect, 18% of STEM females reported a neutral response while 29% of non-STEM females indicated neutrality or disagreed (Figure 7c). A majority of respondents agreed that their department head treated them with respect. However, STEM respondents had higher proportions of neutrality or disagreement (STEM females, 20% and STEM males 29%) (Figure 7d).

Figure 7a

Treated with respect by colleagues

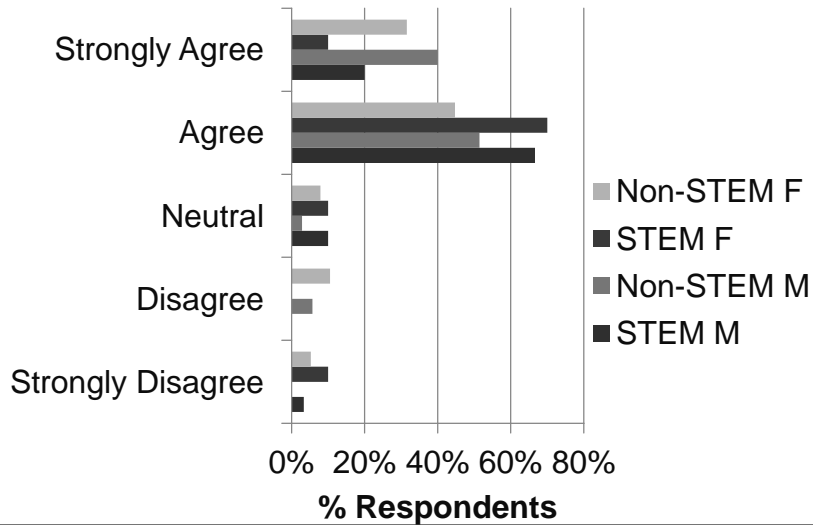


Figure 7c

Treated with respect by students

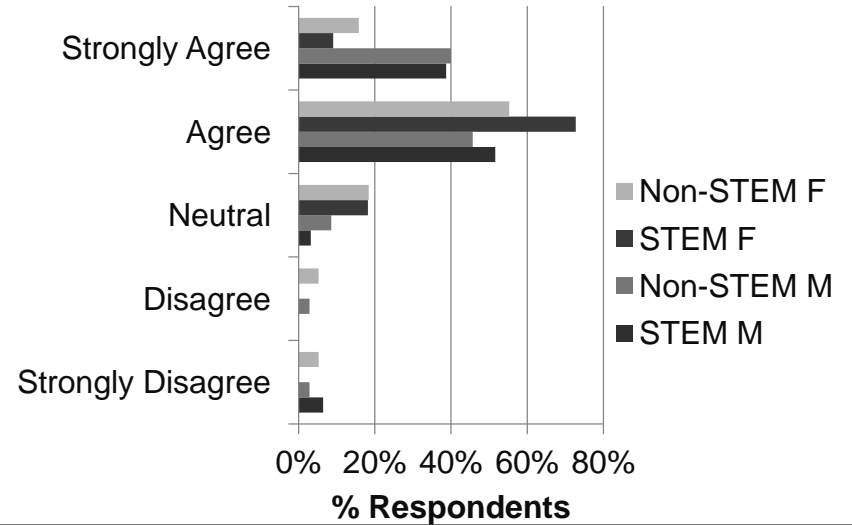


Figure 7b

Treated with respect by dept. staff

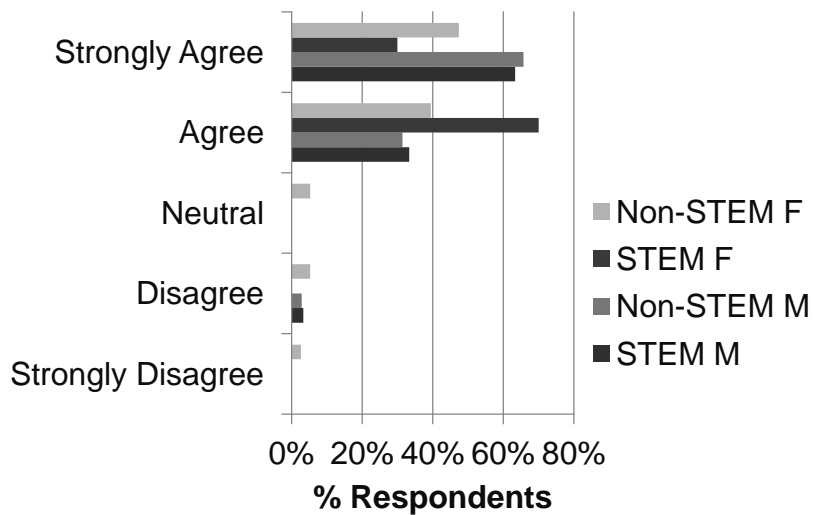
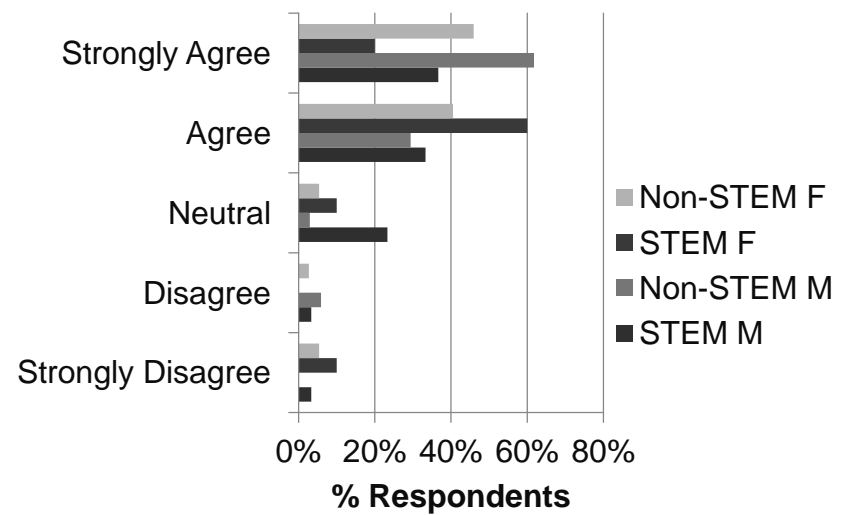


Figure 7d

Treated with respect by dept. head



7. Perceptions of Equality (Agency and Respect)

A. Interactions with colleagues and others in their primary department, cont.

Beyond respect, most respondents reported that they felt like a full and equal participants in departmental problem-solving (72%) and decision-making (66%). STEM females reported the highest proportion of disagreement with regards to both equal participant problem-solving (30%) and decision-making (30%) involvement within their department (Figures 7e and 7f).

In general, 59% of all respondents agreed/strongly agreed that their colleagues regularly solicited their opinion about work-related matters (teaching, research, and service). A slightly higher proportion of STEM females (60%) than STEM males (58%) reported agreeing or strongly agreeing that their colleagues regularly solicited their opinion about work-related matters (teaching, research, and service) (Figure 7g). A majority of respondents believed they could voice their opinions openly within their department (Figure 7h).

Figure 7e

I feel like a full and equal participant in the problem-solving in my dept.

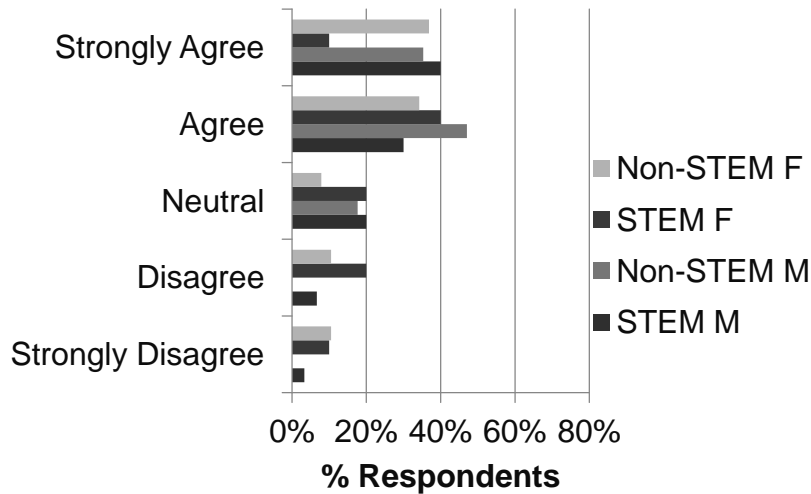


Figure 7g

Colleagues regularly solicit my opinion about work-related matters

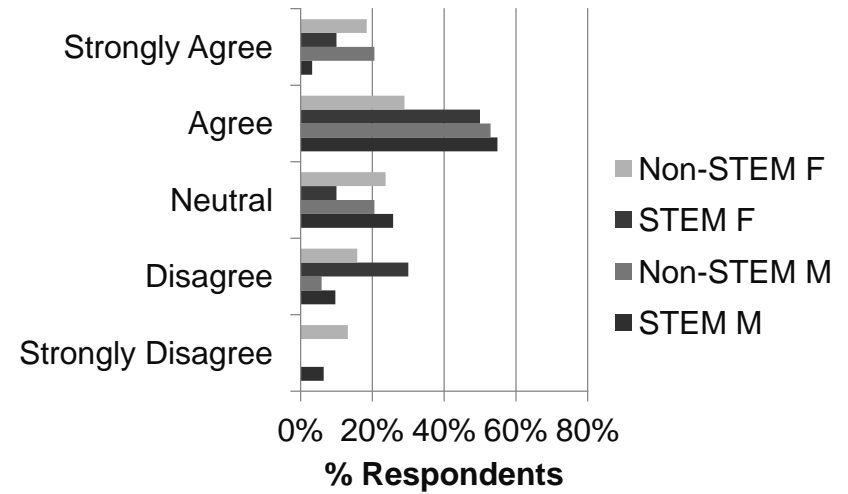


Figure 7f

I feel like a full and equal participant in the decision-making in my dept.

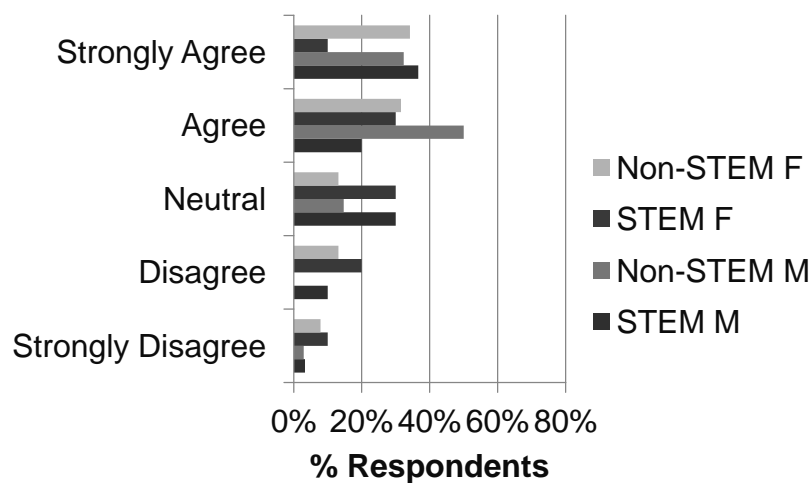
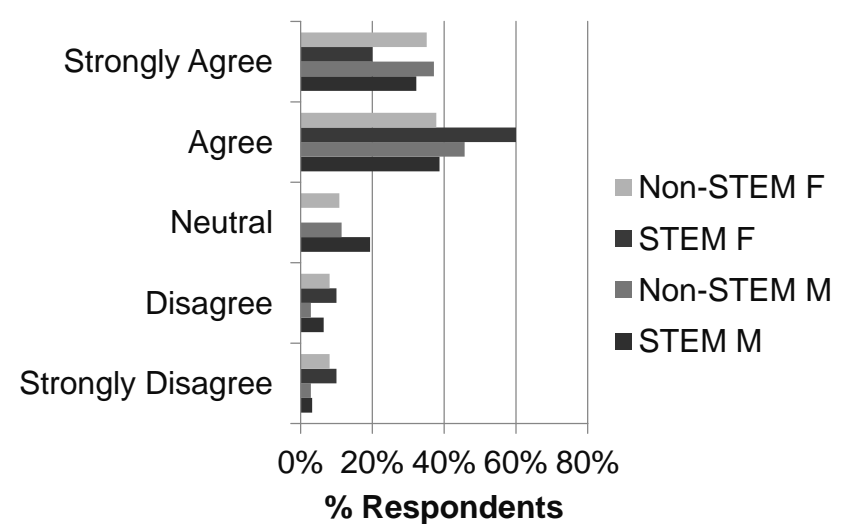


Figure 7h

Can voice opinions openly in dept.



7. Perceptions of Equality (Agency and Respect)

A. Interactions with colleagues and others in their primary department, cont.

When asked about informal networks in their department, a majority of the respondents (73%) reported agreeing or strongly agreeing that they felt included. STEM females had the largest proportion of respondents who disagreed (20%). Interestingly, while a majority of respondents reported feeling isolated in their department (74%), only 27% reported feeling isolated at NIU (Figure 7i).

STEM females had the lowest proportion of respondents who reported that they felt isolated within their department (54%). STEM females, on the other hand, had the highest proportion of respondents who reported that they felt isolated at NIU (30%), even though most of STEM females (60%) reported disagreeing or strongly disagreeing that they felt isolated at NIU. This proportion for STEM females was higher than the proportion of STEM males (45%) (Figures 7j and 7k).

In general, 50% of all respondents reported agreeing or strongly agreeing that their colleagues valued their research. However, when response proportions were disaggregated by discipline, STEM females had the highest proportion of respondents who were in disagreement. Non-STEM males had the highest proportion of respondents reporting agreement that their colleagues valued their research (66%) (Figure 7l).

Nearly half of all respondents reported disagreement that they do a great deal of research and/or service that is not formally recognized by their department (48% research and 51% service, respectively). When response proportions were disaggregated by discipline, STEM females had the highest proportion of respondents reporting that they agreed or strongly agreed that both their research (45%) and service (60%) were not fully recognized by their department (Figures 7m and 7n).

Figure 7i

I am included in informal networks in my department

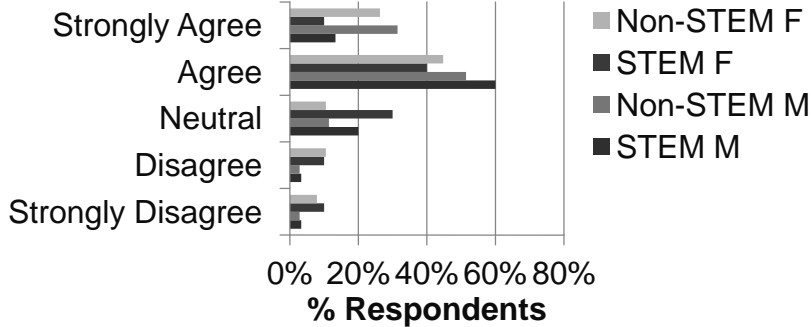


Figure 7l

Colleagues value my research

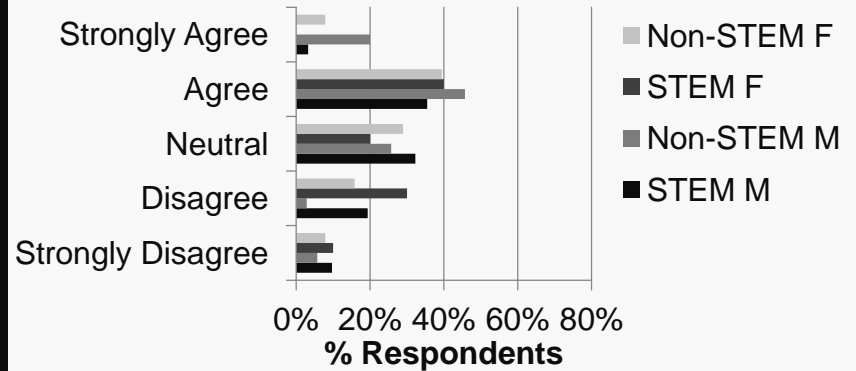


Figure 7j

I feel isolated in my department

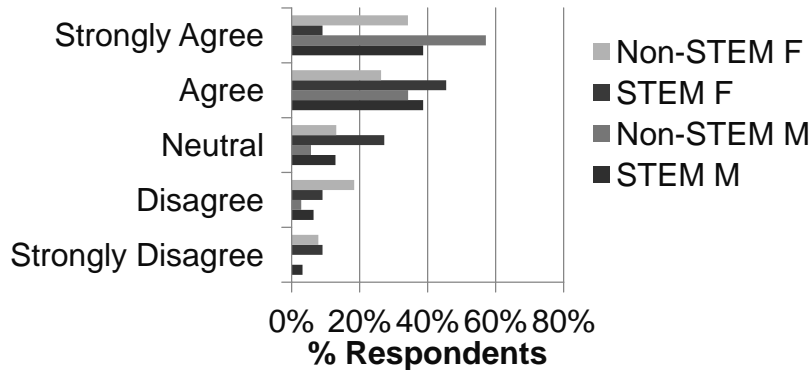


Figure 7m

Research contributions not recognized by department

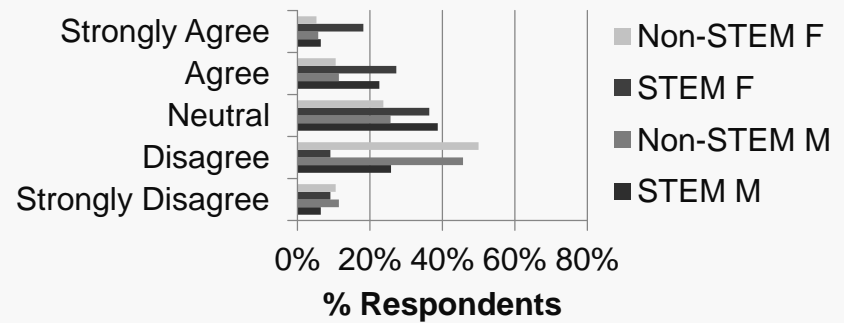


Figure 7k

I feel isolated at NIU

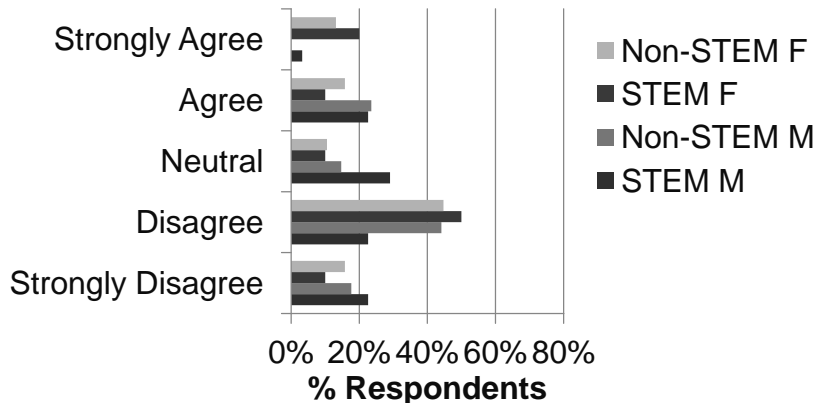
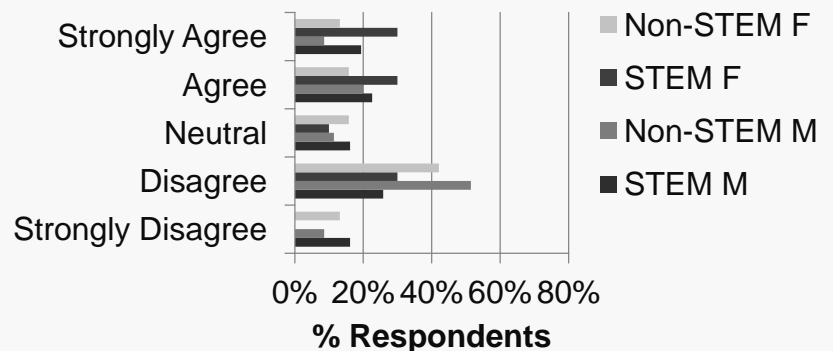


Figure 7n

Service contributions not recognized by department



7. Perceptions of Equality (Agency and Respect)

A. Interactions with colleagues and others in their primary department, cont.

Approximately 56% of all respondents disagreed/strongly disagreed with the statement that their teaching was not formally recognized by their department. STEM respondents had a lower proportion of disagreement (55% females, 47% males) than non-STEM respondents (62% females, 63% males) (Figure 7o).

A majority of respondents (83%) agreed/strongly agreed that their department head or chair treated them with respect. While there was a marginal difference across gender (85% females, 81% males), the difference for males per discipline was remarkable (70% STEM males, 91% non-STEM males) (Figure 7p).

Of all respondents, 76% agreed/strongly agreed that they could voice their opinions openly within their department. As before, the difference across male respondents was remarkable (71% STEM males, 83% non-STEM males) (Figure 7q).

Figure 7o

Teaching contributions not recognized by department

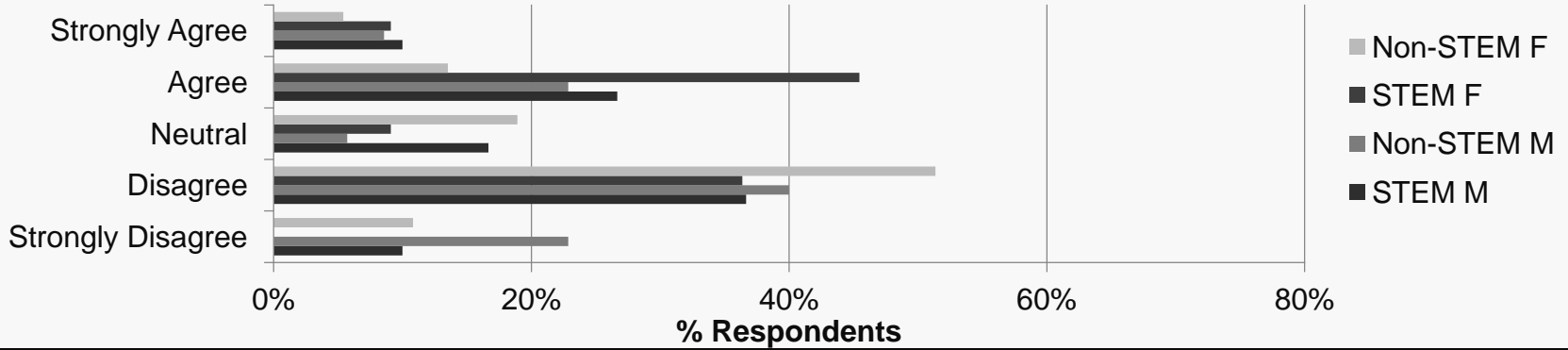


Figure 7p

Treated with respect by department head

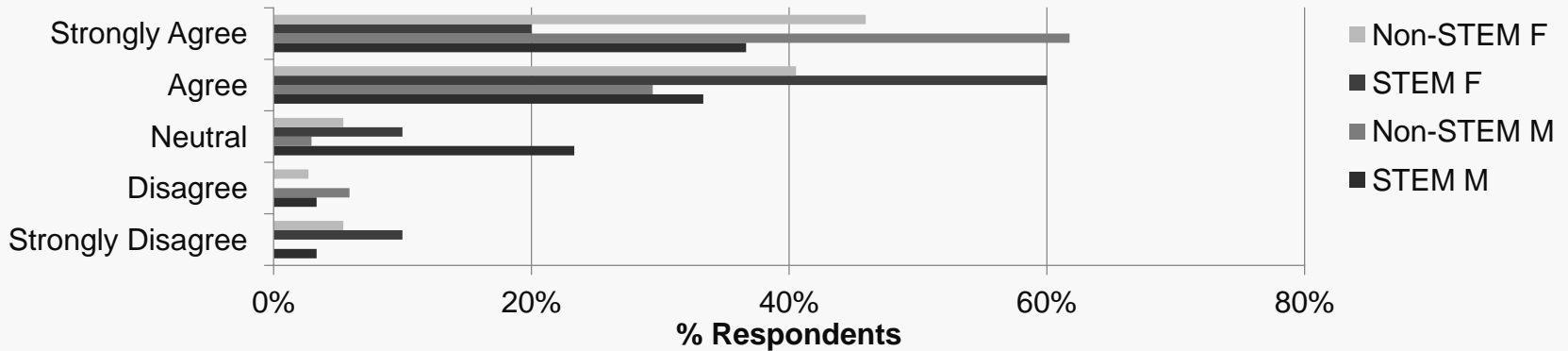
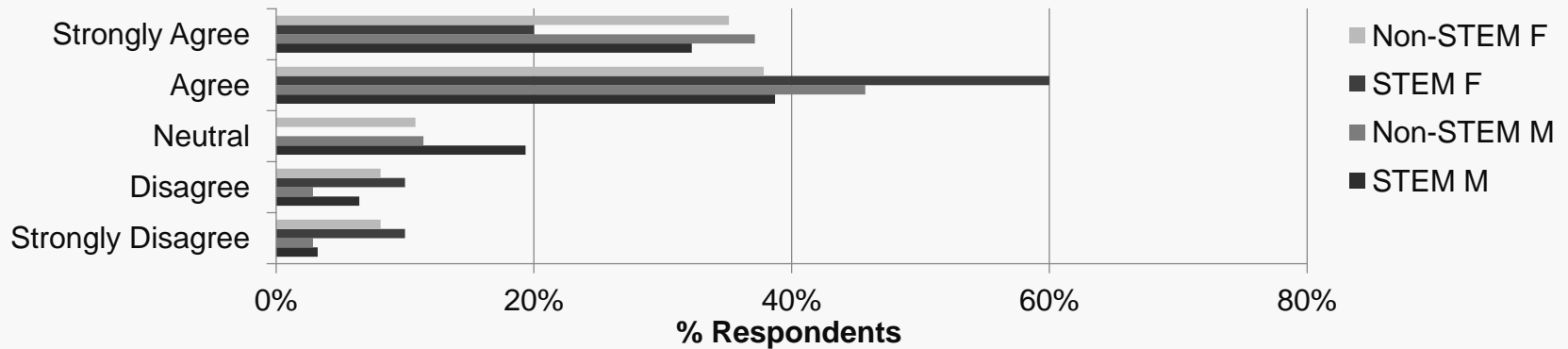


Figure 7q

Can voice opinions openly in department



7. Perceptions of Equality (Agency and Respect)

B. Work climate within their department

In general, 55% of all respondents reported disagreeing or strongly disagreeing that male faculty were more likely to be involved in informal social networks within the department. When response proportions were disaggregated by gender, female respondents were found to believe, more than male respondents, that male faculty tend to be more involved in informal networks within the department (61% males and 48% females). This pattern becomes more pronounced when the response proportions are disaggregated by discipline. STEM females had the highest proportion (80%) of participants reporting that they either agreed or strongly agreed that male faculty become more involved in informal networks within the department, where non-STEM males had the highest proportion (74%) of participants reporting that they either disagreed or strongly disagreed. In general, a higher proportion of STEM faculty reported that they agreed to some extent (45% agree, 40% disagree), while non-STEM faculty had a higher proportion who disagreed to some extent (11% agree, 64% disagree) (Figure 7r).

C. Recruitment of, climate for, and leadership of women faculty within departments

When asked how much they agreed or disagreed with the statement, “There are too few women faculty in my department,” over half of all participants disagreed or strongly disagreed. There was a higher proportion of female participants agreeing with this statement (57% females, 45% males). STEM faculty had a higher proportion of participants agreeing that there were too few women in their department (68% STEM, 11% non-STEM) (Figure 7s).

When asked whether the climate for women faculty in their department was good, 71% of all participants agreed/strongly agreed. A lower proportion of female respondents reported agreement (60% females, 80% males). When disaggregated by discipline, STEM females had the lowest proportion of participants reporting agreement (30%), while non-STEM males had the highest proportion of respondents reporting agreement. It is noteworthy that 50% of STEM female participants reported neutrality on the climate for women faculty in their department (Figure 7t).

Figure 7r

Males are more involved in department social networks

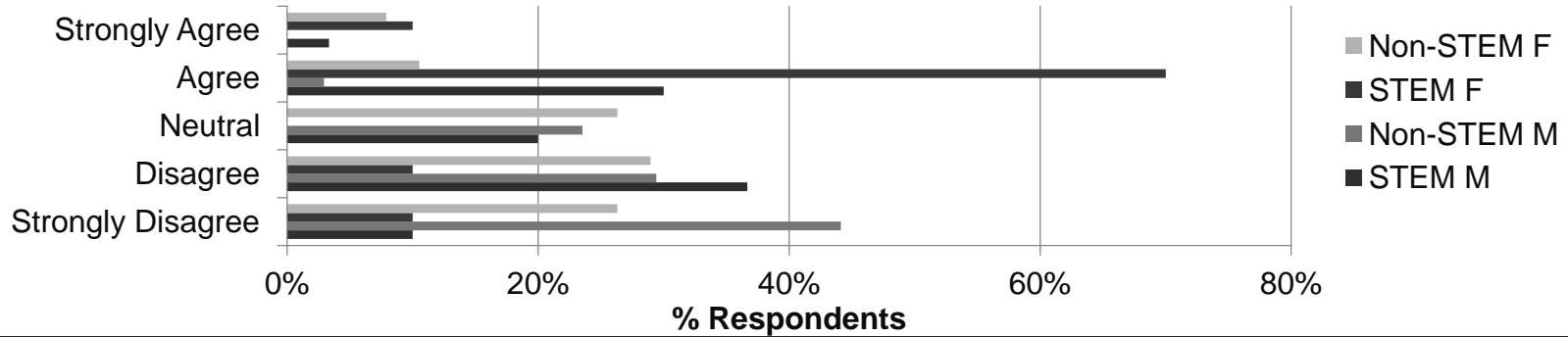


Figure 7s

Too few women in department

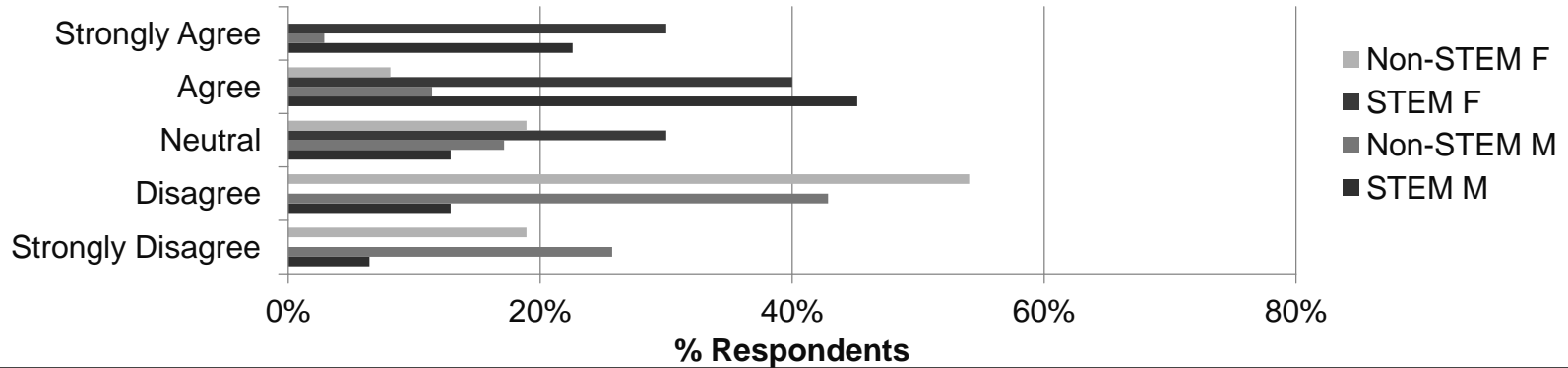
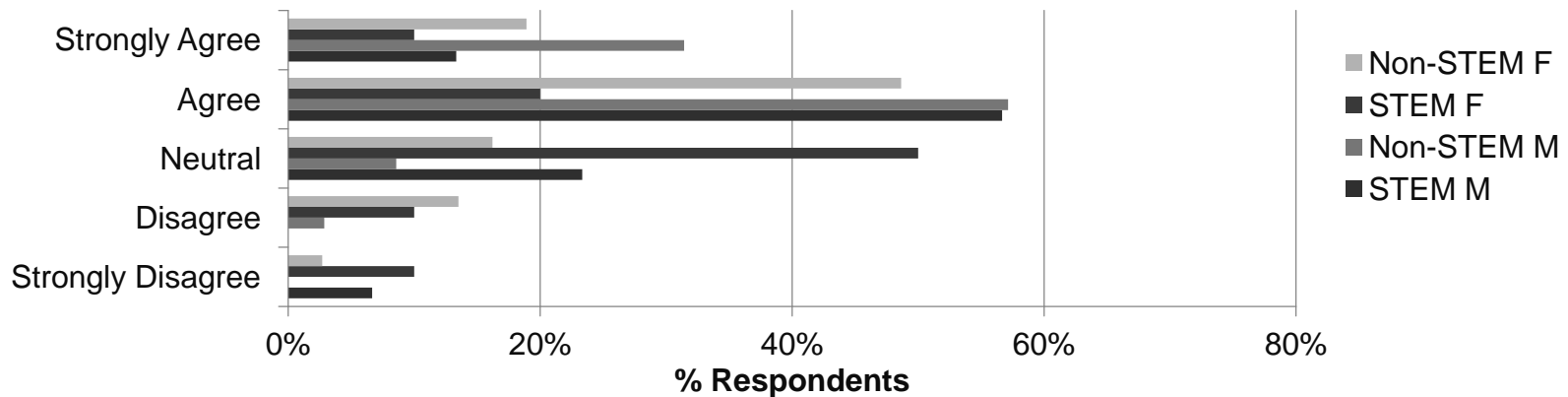


Figure 7t

Climate for women faculty in department is good



8. Tenure Process

When asked how if research, teaching, and service was given appropriate weight in promotion, tenure, and merit decisions, 54% of all participants agreed or strongly agreed. A higher proportion of STEM faculty than non-STEM faculty reported disagreeing (46% STEM, 34% non-STEM). Of STEM faculty, a higher proportion of STEM females disagreed (60% STEM females, 42% STEM males) (Figure 8a).

Approximately 59% of all respondents were satisfied (agreed/strongly agreed) with the tenure/promotion process overall. A slightly lower proportion of female respondents reporting overall satisfaction (53% females, 63% males). When disaggregated by discipline, 100% of STEM female respondents reported satisfaction (Figure 8b).

Figure 8a

Research, teaching, and service are given appropriate weight in promotion, tenure, and merit decisions

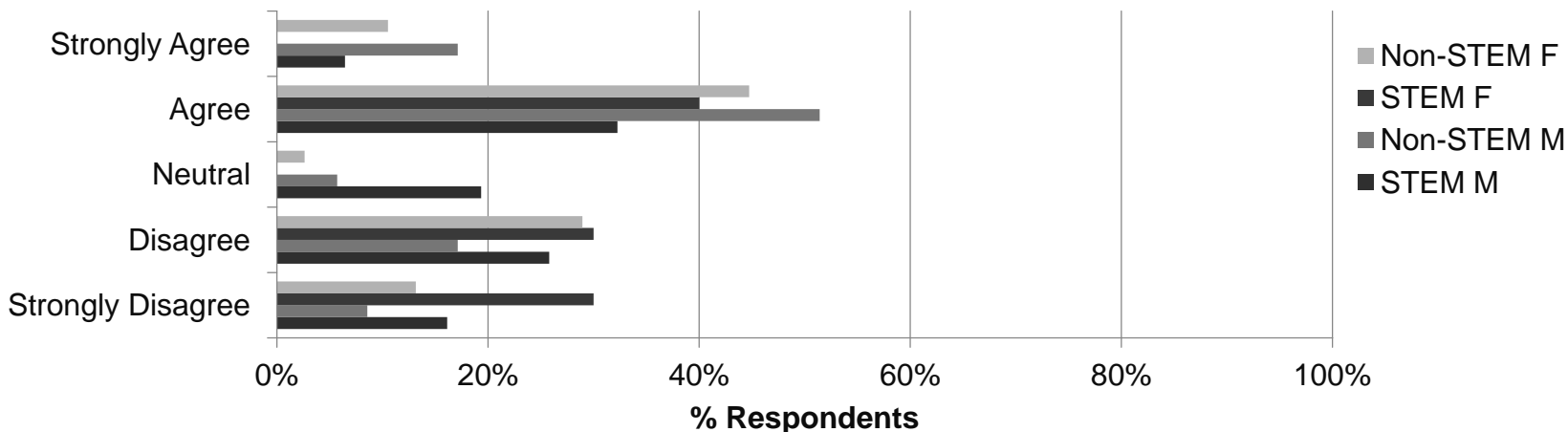
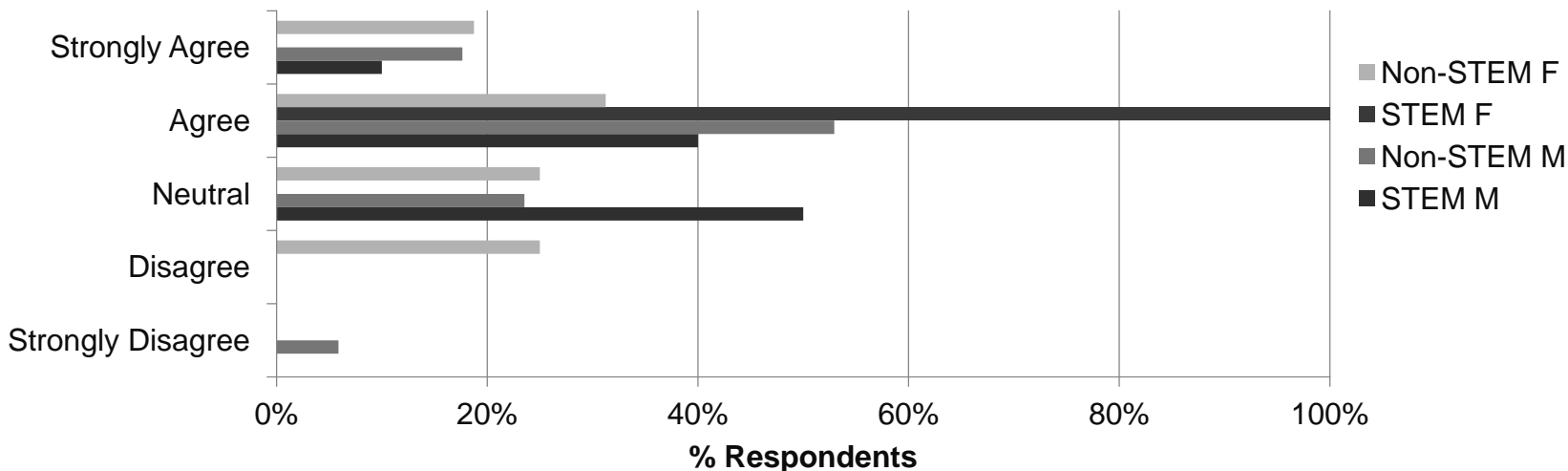


Figure 8b

I was satisfied with the tenure/promotion process overall



9. Work-Life Balance

When asked how much they agreed with the statement, “I often have to forgo professional activities (e.g. meetings, sabbaticals, conferences) because of personal responsibilities,” 54% of all female participants and 50% of all male participants reported disagreeing or strongly disagreeing. Female respondents had a higher proportion of participants reporting agreement/strong agreement (42% females, 23% males) (Figure 9a)

While there was little difference across gender regarding the statement “I often have to forgo personal activities (e.g. family commitments, school events, community meetings) because of professional responsibilities,” (54% females and 53% males agreed/strongly agreed) (Figure 9b), a higher proportion of female respondents reported that personal responsibilities and commitments had slowed down their career progression—45% for females and 32% for males (Figure 9c). Interestingly, a higher proportion of female respondents reported disagreeing or strongly disagreeing with the same statement (43% females, 35% males).

Figure 9a

Often forgoes professional activities because of personal responsibilities

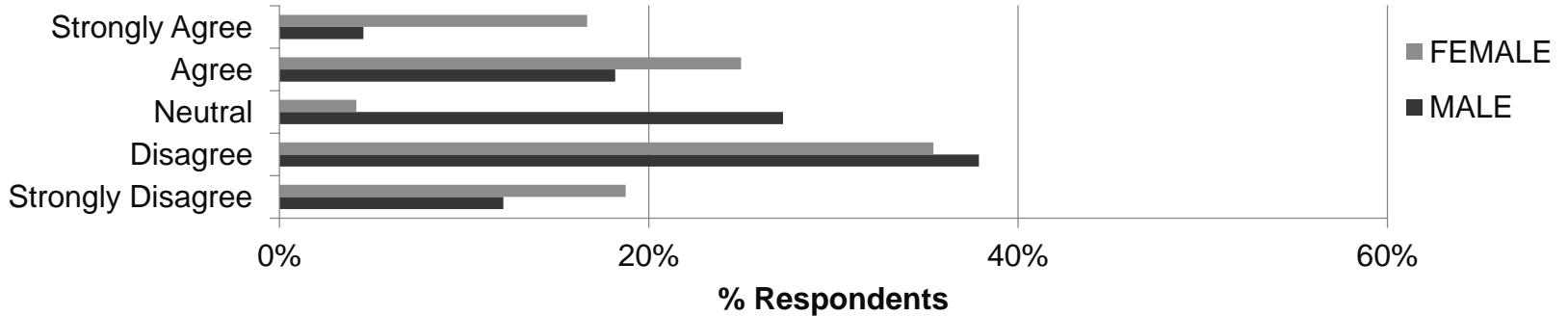


Figure 9b

Often forgoes personal activities because of professional responsibilities

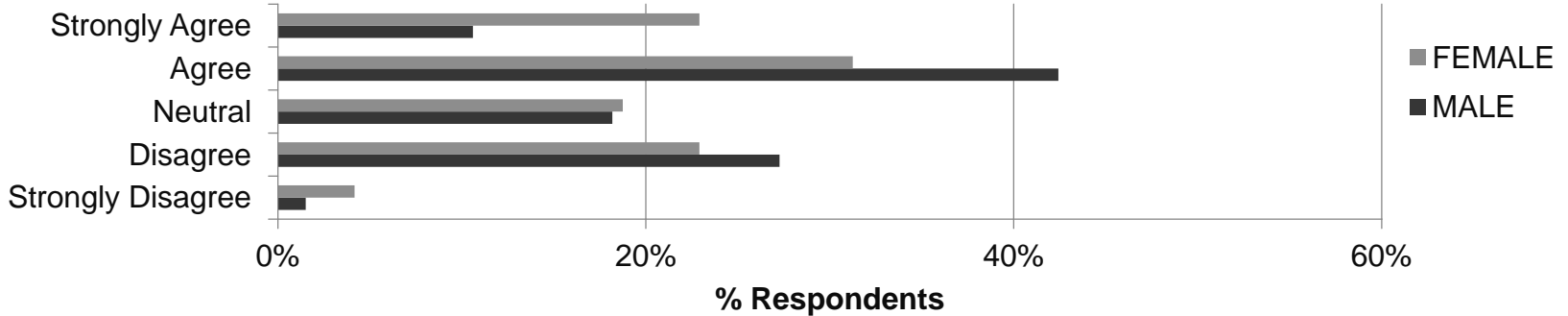
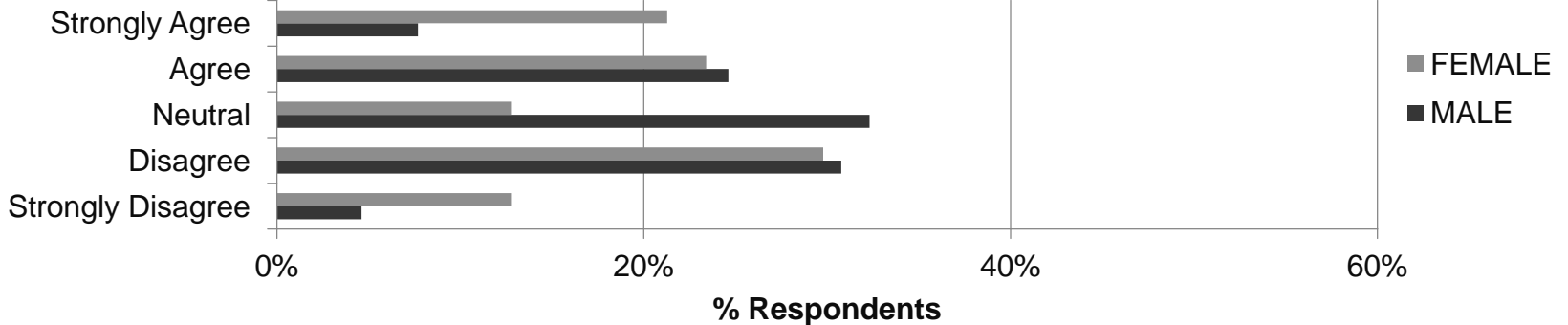


Figure 9c

Personal commitments slowed career progress



9. Work-Life Balance

When asked to report how much they agreed or disagreed with the statement, “Most faculty in my department are supportive of colleagues who want to balance their personal and career lives,” 66% of both female and male participants reported that they either agreed or strongly agreed (Figure 9d). When respondents were asked whether their department was supportive of family leave, 65% of females and 52% of males agreed or strongly agreed (Figure 9e). It should be noted that the highest proportion of female participants (52%) agreed, while the highest proportion of male participants (44%) reported a neutral response.

When presented with the statement “Most faculty in my department are supportive of colleagues who want to balance their personal and career lives,” 66% of both female and male participants reported agreement (Figure 9d). When respondents were asked whether their department was supportive of family leave, 65% of females and 52% of males agreed or strongly agreed (Figure 9e). It should be noted that the highest proportion of female participants agreed (52%), while the highest proportion of male participants reported a neutral response (44%).

Figure 9d

Most faculty in my department are supportive of colleagues who want to balance their personal and career lives

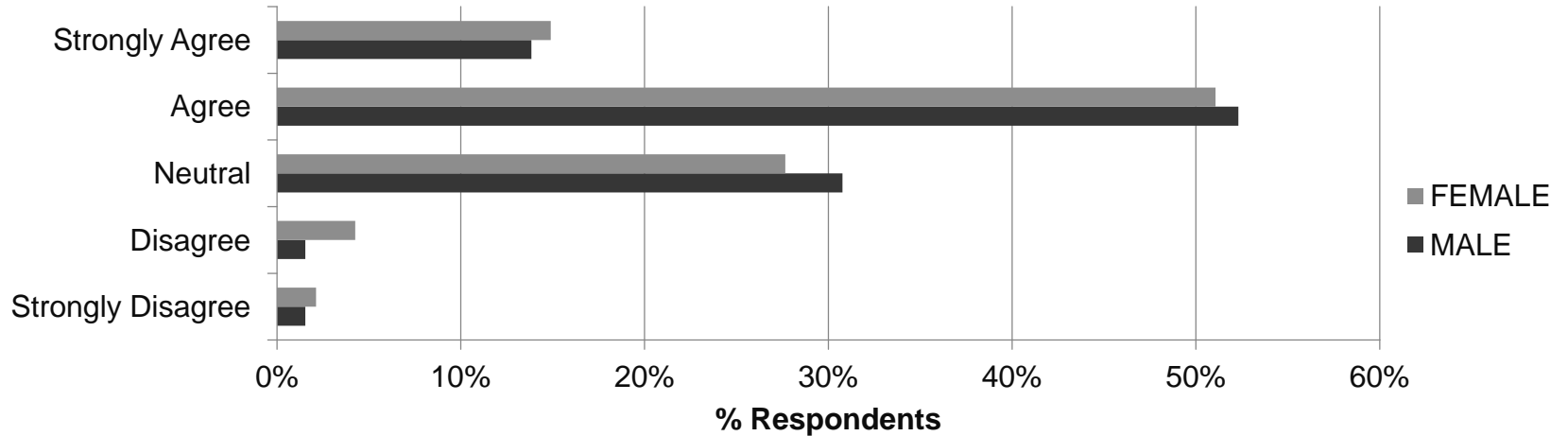
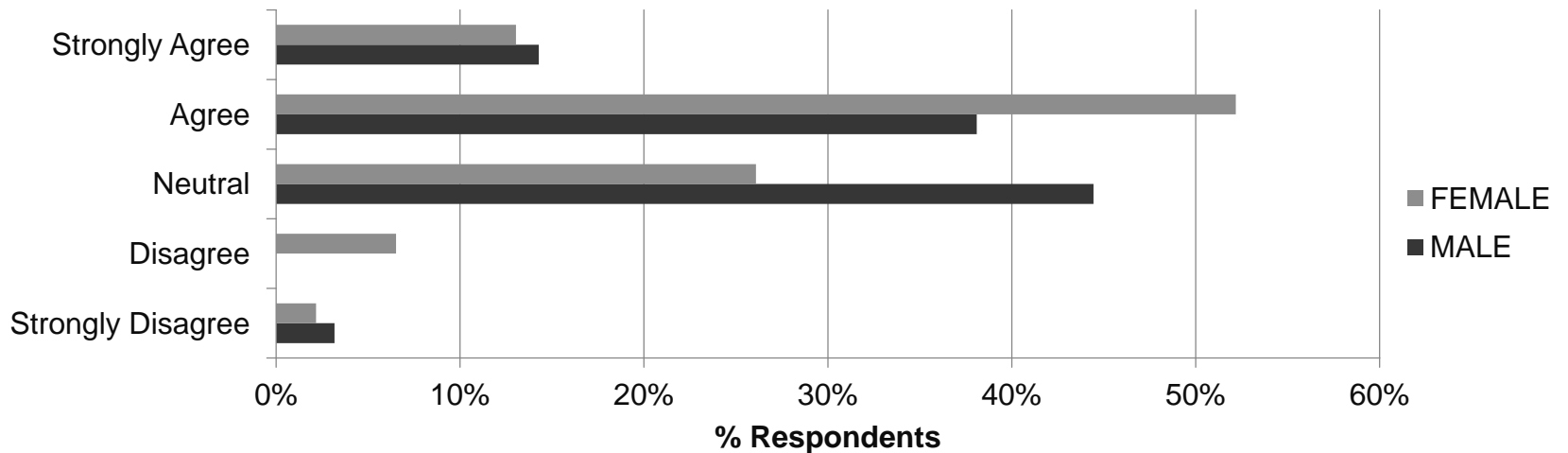


Figure 9e

My department is supportive of family leave



10. Focus Groups and Individual Interviews

Common themes across all focus groups included the following:

- Requirements for full professor are vague
- Agency is dependent upon the department chair
- There is lack of clarity among how faculty are appointed to department committees
- Faculty do not experience mentoring within the department or college
- Informal processes play key roles in determining when faculty come up for promotion to full professor

Common themes from the female focus groups included confidence related to networking, maternity (FMLA) leave, Human Resource policies, and unclear promotion and tenure standards. Dominant themes from the individual interviews included informal mentoring, stop the tenure clock and FMLA leave policies, challenges in maintaining work-life balance, and the quality of research facilities.

11. Concerns, Action Steps and Recommendations

A. *Concerns and Action Steps*

Based upon the results of this survey, the following concerns and action steps are indicated.

(i) Family and Medical Leave (FMLA), extension of probationary period, and faculty work plans

Concern: Faculty members report a lack of clarity about what constitutes an appropriate work plan for return from an FLMA leave and they express concerns about consistency in policy implementation. Some report that they have been discouraged from applying to “stop the tenure clock” by peers and unit administrators.

Action Steps: University Council should develop clearer guidelines (or a template) for work plans to be included in the Academic Policies and Procedures Manual. Human Resource Services should offer on-line administrator training regarding these issues.

(ii) Processes and criteria for gaining promotion to full professor

Concern: Faculty members indicated that in many cases university, college and department documents do not provide much specificity regarding promotion to full professor.

Action Steps: University Council should revise the bylaws; colleges and units should clarify personnel documents so they contain clear and thorough guidelines for promotion to full professor.

11. Concerns, Action Steps and Recommendations

(iii) “Informal” reviews prior to applications for promotion to full professor

Concern: In many units, a small group screens associate professors’ vitae and suggests whether they are ready to apply for promotion. These processes lack transparency and mitigate against diverse candidates or those with nontraditional careers. They function as if they were official because faculty members are reluctant to oppose colleagues’ judgments.

Action Steps: Departments should develop equitable and transparent practices for determining when an application for promotion to full professor can occur. University Council should revise the University By-laws to require such practices, which must be approved by College Councils.

11. Concerns, Action Steps and Recommendations

B. Recommendations

Based upon the results of this survey, the following recommendations are offered.

(i) Mentorship

Concern: STEM women face difficulties accessing informal male networks and find mentors outside their departments.

Action Steps: Alternative paths for networking and mentorship such as the WiSTEM (Women-In STEM) lunch group have been effective. The College of Liberal Arts and Sciences is appointing a faculty member through Women's Studies to coordinate such alternatives and offer the support of a half-time teaching assistant.

(ii) Career progress

Concern: When STEM women are excluded from department networks, they find themselves overlooked for leadership roles and opportunities to develop necessary skills.

Action Steps: See above; in addition, the Presidential Commission on the Status of Women develops appropriate programs.

11. Concerns, Action Steps and Recommendations

B. Recommendations, cont.

(iii) Work-life balance

Concern: Faculty members in all areas experience difficulties achieving a satisfying work-life balance.

Action Steps: Employee Wellness should be asked to explore the issue and provide advice on ways to establish a positive climate. Since department chairs were perceived as playing an essential role in faculty members' satisfaction, advice on how to provide effective action at the unit level is particularly valued.