ASSESSING THE ACADEMIC WORK ENVIRONMENT FOR TENURE-TRACK FACULTY AT THE UNIVERSITY OF MICHIGAN IN 2001, 2006, AND 2012:

GENDER AND RACE IN RETENTION-RELEVANT CAREER EXPERIENCES

UM ADVANCE Program

July, 2015

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INTRODUCTION

This is the third in a series of reports derived from the fall 2012 study of the academic climate on the University of Michigan campus. The first report assessed data from UM science and engineering faculty in 2001, 2006, and 2012 about their experiences of their work environment. The second report assessed the same variables from the 2006 and 2012 rounds of data collection for science and engineering faculty and comparable data collected from social science faculty. The second report also provided analyses of data for arts and humanities faculty, who were surveyed for the first time in 2012. The present report draws on the same samples used for these first two reports. For detailed information about the study and data collection procedures, please refer to the first two reports[1].

The main focus of this report is an examination of gender and race/ethnicity differences in career experiences thought to be related to faculty career satisfaction and retention. These experiences include opportunities for leadership and influence, service experiences, the allocation of resources, recognition for work, and family responsibilities.

SAMPLE SURVEYED

The table below offers an overview of the three waves of data collection that are considered in this report.

Overview of three waves of data collection		
2001 (Time 1)	**2006 (Time 2)**	**2012 (Time 3)**
Tenure-track faculty in *Science & Engineering*	Tenure-track faculty in *Science & Engineering*	Tenure-track faculty in *Science & Engineering*
	Tenure-track faculty in the *Social Sciences*	Tenure-track faculty in the *Social Sciences*
		Tenure-track faculty in the *Arts & Humanities*

Although the 2012 round of data collection included all tenure-, research-, and clinical-track faculty with paid appointments at UM-Ann Arbor, the present report focuses only on tenure-track faculty (those who were at or above the rank of assistant professor as of October, 2012). A summary of the sample sizes included in this report is presented in the table below.

Sample sizes in 2001, 2006, and 2012 as a function of disciplinary area, gender, and race-ethnicity									
	2001			**2006**			**2012**		
	Sci. & Engin.	Social Science	Arts & Hum.	Sci. & Engin.	Social Science	Arts & Hum.	Sci. & Engin.	Social Science	Arts & Hum.
Female Faculty	135	-	-	121	71	-	174	117	88
Male Faculty	100	-	-	141	72	-	452	148	106
Faculty of Color	42	-	-	55	33	-	125	54	35

More details on the total number of faculty surveyed and the response rates are provided in the Appendix.

[1] http://sitemaker.umich.edu/advance/faculty-climate

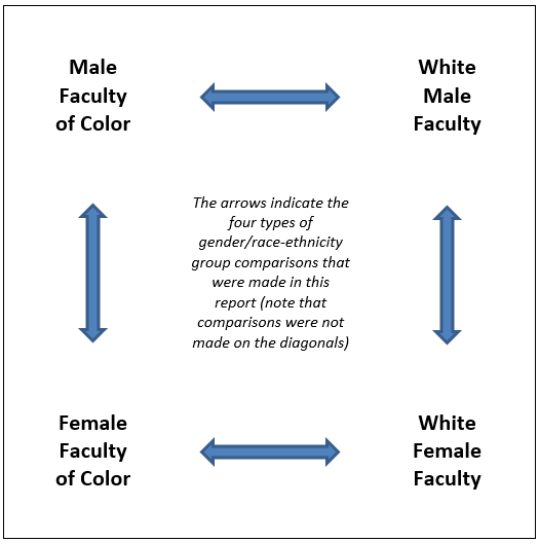
At all three time points (2001, 2006, and 2012), compared to female respondents, the male respondents were older, had been at UM longer, had received their highest degrees longer ago, and were more likely to be at the rank of full professor. We found the same differences when comparing the white tenure-track faculty with tenure-track faculty of color. Given these important career timeline differences related to gender and race-ethnicity, a composite variable assessing level of experience in academia was constructed, combining age, years at UM, year of degree, and rank. This summary measure of experience was used as a control variable in all analyses. This approach to controlling for experience means that the significant gender- and race-ethnicity-related findings reported below cannot be explained by differences in age, years at UM, year of degree, or rank.

As noted in the initial reports on the samples (see footnote 1 for link to reports), the samples reported on here were not fully representative of the larger pool of tenure track faculty surveyed. To address this issue, all analyses were conducted using appropriate weights. Weighted data analyses adjust the raw survey data to reflect the population from which the sample is drawn. In this case the data were weighted on the basis of race, gender, and school (e.g., Engineering, LSA).

DATA ANALYSIS STRATEGY

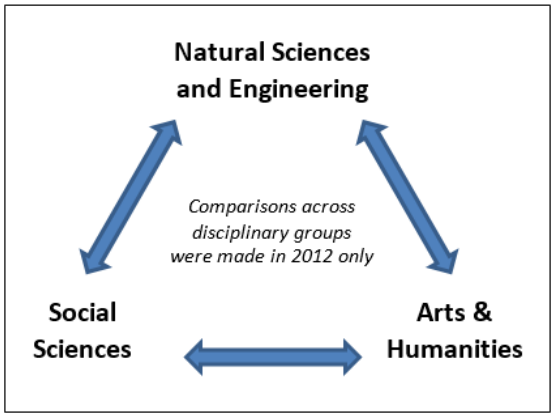
In various areas of this report we make two types of comparisons: (1) across-time comparisons and (2) across-group comparisons. The across-time comparisons explored potential differences over time for members within a particular group (e.g., female faculty of color in the humanities in 2006 compared to 2012). It is important to note that the *arts and humanities* faculty were surveyed for the first time in 2012; thus, time-related analyses with this group were not possible. The across-group comparisons explored potential differences across particular groups of faculty on the basis of race-ethnicity and gender at each time point (e.g., differences between male faculty of color and white male faculty in the social sciences in 2012).

When conducting the across-group comparisons involving gender/race-ethnicity, female faculty were compared to male faculty (this was done for both white faculty and for faculty of color). When conducting race-ethnicity comparisons, faculty of color[2] were compared to white faculty (this was done for both male faculty and for female faculty). Thus, with regard to gender/race-ethnicity, four across-group comparisons were typically conducted for each variable or scale of interest. In the figure to the right, the arrows summarize these four across-group comparisons for gender/race-ethnicity.



[2] Preliminary analyses were conducted comparing Asian/Asian American faculty to underrepresented minority faculty; these analyses revealed few significant differences. Given this, and the small total number of faculty of color in the sample, we combined Asian/Asian American faculty with underrepresented minority faculty in all analyses in order to increase statistical power.

One additional series of across-group comparisons was conducted for the 2012 data only. This set of analyses involved comparing the three disciplinary groups: the natural sciences and engineering, the social sciences, and arts and humanities[3]. These analyses are summarized in the figure below.



When assessing scores on scales and items as a function of gender, race-ethnicity, and disciplinary group, we used analysis of variance (ANOVAs). These analyses compared the mean scores of the gender and race-ethnicity groups at the three data collection points (2001, 2006, and 2012), and the mean scores for the three disciplinary groups in 2012. Analysis of variance is a statistical procedure that apportions variation in people's scores on a variable to different factors, e.g., their membership in one of the four faculty groups of interest (white female faculty, female faculty of color, white male faculty, and male faculty of color) at the various time points of interest (2001, 2006, and 2012).

We note that due to changes in the surveys over time, some data collected at later time points were not always easily compared to data collected at earlier time points.

When assessing frequency data (numbers of people, rather than scores), we used logistic regression. The use of logistic regression is appropriate when the dependent variable is dichotomous but there are continuous control variables (such as the variable controlling for faculty experience). In several instances the frequency of "presence" on a dichotomous variable was rare for some groups, which was expected given the many kinds of faculty experiences the study assesses (e.g., reports from arts and humanities faculty of being nominated for a research award). Even in such instances of rare occurrences, planned comparisons were pursued as it was important to understand how these experiences may differ as a function of gender and race-ethnicity. However, statistical comparisons cannot be made when instances are non-existent or fully present in all groups (i.e., 0% or 100%).

In the results reported below, references to significant findings (or simply references to 'differences' across groups or time) refer to differences found to be statistically significant (i.e., $p \leq .05$)[4]. These references point to differences or effects that would have emerged simply by chance - when there really was no difference or effect - at or less than 5 percent of the time. This is a generally accepted standard of statistical significance in social science research. In some cases, trends that approached statistical significance are also mentioned, and these are always explicitly described as trends (trends involved p-values $\geq .055$ and $\leq .104$). Some trends are included in this report because, at times, the numbers in certain groups (e.g., female

[3] In 2012 the three disciplinary groups (science and engineering, social sciences, and arts and humanities) did not differ on the composite measure of level of experience in academia (i.e., the variable combining age, years at UM, year of degree, and rank). Thus, for comparisons of the disciplinary groups in 2012, the composite level-of-experience measure was not used as a control variable as it was when the gender/race-ethnicity groups were compared.

[4] Any differences noted in this report should be assumed to be statistically significant – even if the word 'significant' is not used - unless such differences are explicitly described as trends.

faculty of color) were relatively low, which makes it less likely that sizeable differences will reach the .05 criterion for statistical significance.

Tables presenting descriptive statistics (means, standard deviations, percentages) are appended to this report. Each table reports descriptive statistics as a function of gender/race-ethnicity group, time (2001; 2006; 2012), and disciplinary area (science and engineering; social science; arts and humanities).

OVERVIEW OF GOALS

We examine qualities and characteristics of faculty work life, beyond the climate (which was addressed in the first two reports), that are thought to be important to faculty members' ability to be productive and have satisfying careers. For example, access to adequate resources to conduct research and opportunities for leadership and influence are considered factors contributing to academic success careers to retention of faculty. Similarly, family responsibilities (e.g., the need to care for young children) or demands for university service may, if too time-consuming, divert faculty from scholarship and teaching and be obstacles to success. We consider whether or not these work conditions vary by race-ethnicity and gender for tenure-track faculty within and over time, and – in 2012 only – by disciplinary area.

NAVIGATING THIS REPORT

The Findings section of this report is organized by topic, and a summary section at the end of this report is organized by disciplinary group. Thus, the reader wanting a quick snapshot of key findings related to science and engineering, the social sciences, or the arts and humanities is advised to turn to the summary.

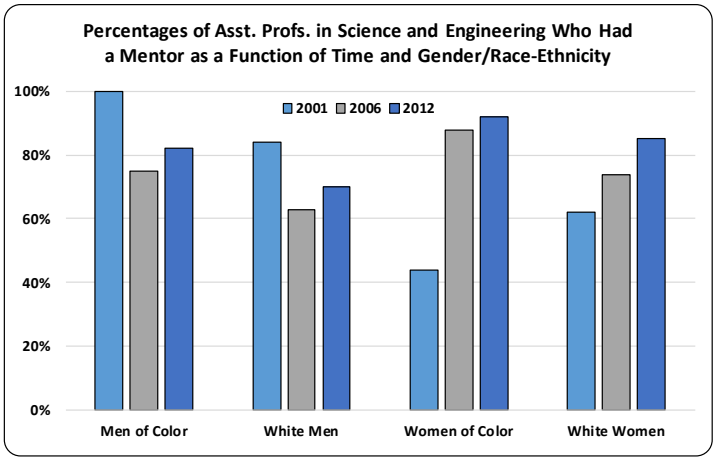
FINDINGS

MENTORING AND FEEDBACK

Faculty were asked if they had a mentor and, if so, the extent to which their mentor(s) provided particular types of support (e.g., serves as role model, advises about getting work published, advocates for me). Respondents used a 4-point rating scale that ranged from '*none*' to '*too much.*' Faculty were also asked if they served as a mentor to other faculty and, if so, what kind of support they provide to their mentees. Questions about providing mentoring were not asked in 2001. Analyses of receiving mentoring were limited to faculty at the assistant professor rank; analyses of providing mentoring were limited to faculty at the associate and full professor ranks. In addition to questions about mentoring, faculty were asked to rate the extent to which chairs/unit leaders provided useful feedback about performance and articulated clear criteria for promotion and tenure.

ASSISTANT PROFESSORS - RECEIVING MENTORING (TABLE 1)

WITHIN GROUP OVER TIME



In *science and engineering* in 2012, most assistant professors reported having a mentor; rates ranged from 70% for white men to 92% for women of color. The rate differed significantly over time for white women; 62% in 2001 compared to 85% in 2012. There were similar trends for women of color comparing both the 2012 (92%) and the 2006 (88%) rates to 2001 (44%); these differences did not reach statistical significance, likely due to low numbers of respondents. Rates for having a mentor did not differ over time for white men. Time-related differences for male assistant professors of color could not be calculated due to small numbers; however all reported having a mentor in 2001 and most (82%) reported the same in 2012.

White female assistant professors in *science and engineering* reported receiving more of the following in 2012 compared to 2001: mentors acting as role models and advocates, mentors helping with career networking and tenure-related advancement, and mentors advising about publishing, department politics, and resources. Results were similar for female assistant professors of color; they reported increases from 2001 to 2012 in all of those areas except receiving a mentor's advice about publishing. White male assistant professors reported more experiences with mentors serving as role models in 2012 compared to 2001; there were also trends wherein they reported more mentor advice about preparation for advancement and about balancing work and family in 2012 compared to 2001. There were no increases in these types of mentoring for male assistant professors of color. In fact, some areas (advice about obtaining resources,

department politics, and getting worked published) were given lower frequency ratings in 2012 compared to 2001 and/or 2006, and in some instances these differences trended toward statistical significance.

In the *social sciences* in 2012, most assistant professors reported that they had a mentor; rates ranged from 65% for white men to 100% for both men and women of color. Looking from 2006 to 2012 for assistant professors in the *social sciences*, there were no differences in the rates of having a mentor for any of the four gender/race-ethnicity faculty groups. There was a trend for female assistant professors of color to report that their mentors gave more advice about department politics in 2012 compared to 2006; a trend in the same direction also emerged for white women.

In the *arts and humanities* in 2012, there were very small numbers of assistant professors who responded in some of the gender/race-ethnicity groups, making analyses of percentages of assistant professors with mentors in these groups unreliable. Combining across the four gender/race-ethnicity groups, about half (58%) of the assistant professor respondents in the *arts and humanities* reported having at least one mentor in 2012; the only group under 50% was white men (40% of this group reported having a mentor in 2012). Analyses across time for this group were not possible, as they were only surveyed in 2012.

BETWEEN GROUPS WITHIN TIME

In *science and engineering* there were no significant differences among the four gender/race-ethnicity groups in reported rates of having a mentor in 2012, or at either of the earlier data collection time points. In 2001 there were several areas where men of color reported receiving more mentoring compared to both women of color and white men; by 2012 there was only one difference, and in this case white men reported receiving more advice about department politics from mentors compared to men of color. There were no differences on these items comparing white women to both women of color and white men for any year, with the exception of one item: white women reported receiving more mentor advice about advancement compared to white men in 2006.

In the *social sciences* in 2012, male assistant professors of color were more likely than white male assistant professors to report having at least one mentor; this difference did not exist in 2006. In 2012, male faculty of color, compared to white male faculty, reported that their mentors engaged in more role modelling (a trend), provided more career networking help, and gave more advice about department politics (a trend). Also in 2012, white female faculty, compared to white men and women of color, reported that their mentors gave more advice about department politics; white women also reported receiving more advice from mentors, compared to white men, related to obtaining needed resources. In 2006, white female faculty members reported that their mentors gave more advice about advancement (e.g., promotion, leadership positions), publishing, and obtaining needed resources compared to women of color and white men (a trend); in 2012 the only difference that persisted was between white women and white men on advice related to obtaining resources. In 2006 white female faculty reported receiving more advice from mentors about work-family balance compared to white men; no such difference existed in 2012. In 2006 female faculty of color, compared to both white women and men of color, reported receiving less mentor advice about department politics and less mentor advocacy; in 2012 the only difference that persisted was

between female faculty of color and white female faculty with regard to receiving advice about department politics.

Faculty in the *arts and humanities* were surveyed for the first time in 2012. At this time, there were no significant differences among the four gender/race-ethnicity groups of assistant professors in reported rates of having at least one mentor. White male faculty reported receiving less mentor help with career promotion, advice about publishing, and advice about obtaining needed resources compared to male faculty of color and white female faculty. There was a trend for female faculty of color to report receiving less mentor advice about advancement (e.g., promotion) compared to white women.

CROSS-DISCIPLINARY ANALYSES

Finally, for 2012 the received mentoring variables were analyzed for differences across the three disciplinary groups (science and engineering, social sciences, and arts and humanities). The assistant professors in these three groups did not differ in their reports of how much of each type of mentoring activity they received. However, the assistant professors in the arts and humanities were significantly less likely to have a mentor (58% reported having a mentor) compared to the assistant professors in science and engineering (79%) and the social sciences (83%).

ASSOCIATE AND FULL PROFESSORS - PROVIDING MENTORING (TABLE 2)

WITHIN GROUP OVER TIME

In 2012 in *science and engineering*, more than half of associate and full professors reported that they provide mentoring to others: 52% of female faculty of color, 69% of male faculty of color, 74% of white female faculty, and 77% of white male faculty. In 2012, white male associate and full professors were more likely to report taking part in mentoring activities in all but one of eight areas (advising about department politics) compared to 2006. These areas of increased activity for white male associate and full professors included serving as a role model and an advocate, promoting a mentee's career via networking, and advising about career advancement, publishing, obtaining resources, and balancing work and family. White female associate and full professors reported more mentoring activity in 2012 compared to 2006 in five areas (one was a trend): promoting a mentee's career through networking and providing advice about publishing, department politics, obtaining resources, and balancing work and family. Male faculty of color reported more advising of mentees about publishing, department politics, and balancing work and family in 2012 compared to 2006. There were no significant differences from 2006 to 2012 found for female associate and full professors of color; however, this was likely due to small numbers that made statistical analyses of differences difficult.

In 2012 in the *social sciences*, more than half of associate and full professors reported that they provide mentoring to others: 54% of white male faculty, 61% of male faculty of color, 65% of female faculty of color, and 80% of white female faculty. White male senior faculty were more likely to report engaging in two mentoring activities in 2012 compared to 2006: promoting a mentee's career via networking, and advising about obtaining needed resources. White female associate and full professors in 2012, compared to 2006, were more likely to report advising mentees about publishing. In a trend, male faculty of color reported providing more advising to mentees about department politics in 2012 compared to 2006. There

were no significant differences from 2006 to 2012 found for female faculty of color; here again, however, this was likely due to small numbers that made statistical analyses of differences difficult.

In 2012 in the *arts and humanities*, less than half of associate and full professors reported that they provide mentoring to others: 41% of white male faculty, 43% of male faculty of color, 44% of female faculty of color, and 45% of white female faculty. Analyses of differences in providing mentoring across time for the arts and humanities faculty were not possible (these faculty were surveyed in 2012 only).

BETWEEN GROUPS WITHIN TIME

In *science and engineering* in 2006 there were no significant differences between associate and full professors in the four gender/race-ethnicity groups on the eight mentoring activities. The same was true for 2012.

In the *social sciences* in 2006, white female senior faculty, compared to white male senior faculty, were more likely to report serving as role models, promoting a mentee's career via networking, and advocating for mentees. In 2012, these differences in mentoring activity between white male and white female associate and full professors no longer existed. In fact, no significant differences emerged when comparing the four gender/race-ethnicity groups on the eight mentoring activities in 2012.

In the *arts and humanities* in 2012 there were no significant differences found between the four gender/race-ethnicity groups on the level of engagement in the eight different mentoring activities.

CROSS-DISCIPLINARY ANALYSES

Lastly, for 2012 the provided mentoring variables were analyzed for differences across the three disciplinary groups (science and engineering, social sciences, and arts and humanities). The associate and full professors in the arts and humanities (45%) were less likely to report serving as mentors to other faculty members compared to their peers in science and engineering (73%) and the social sciences (67%). Further, the associate and full professors in science and engineering were more likely to report that they advise their mentees about obtaining resources and promoting their mentees' careers through networking than were the associate and full professors in the social sciences and arts and humanities.

FEEDBACK FROM DEPARTMENT/UNIT LEADERS (TABLE 3)

WITHIN GROUP OVER TIME

In 2012 in *science and engineering*, respondents provided a mean rating of the utility of feedback from department/unit leaders that fell between 'average' and 'above average' on a five-point scale ranging from 'poor' to 'superior.' All of the gender/race-ethnicity groups but men of color provided higher ratings in 2012 compared to 2001 (ratings from men of color were already relatively high in 2001). All of the gender/race-ethnicity groups provided higher mean ratings of feedback from leaders in 2012 compared to 2006, although the differences were trends for all but women of color. Women of color and white men also provided more positive ratings of their department/unit leaders' articulation of clear criteria for tenure and promotion in 2012 compared to both 2001 and 2006; in 2012 all groups reported mean ratings on this question that fell between 'average' and 'above average.'

In the *social sciences*, the four gender/race-ethnicity groups provided mean ratings of the usefulness of feedback from department/unit leaders that fell between 'average' and 'above average' in 2012. There were no differences in these ratings when comparing data from 2012 to 2006 for any of the four gender/race-ethnicity groups. The same was true for the mean ratings of department/unit leaders' articulation of clear criteria for tenure and promotion; means for all four gender/race-ethnicity groups on this question fell between 'average' and 'above average.'

Between Groups Within Time

In *science and engineering*, female faculty of color provided lower ratings of the usefulness of feedback received from department/unit leaders compared to male faculty of color in 2001, and compared to white women and men of color in 2006. However, in 2012 these differences no longer existed. Further, women of color provided lower ratings of leaders' articulation of criteria for promotion/tenure compared to white women and men of color in 2006; however, these differences were not significant in 2001 or 2012. In 2006 white female faculty provided lower ratings of feedback utility compared to white male faculty; this difference persisted in 2012 (the mean difference in 2012 was small, but reached significance due to the relatively large numbers of white faculty). Also in 2012, white female faculty provided lower ratings, compared to white men, concerning department/unit leaders' articulation of clear criteria for promotion/tenure.

In the *social sciences* in 2006 and 2012 there were no differences among the four gender/race-ethnicity groups with regard to ratings of the usefulness of feedback received from department/unit leaders. However, in both 2006 and 2012, white male faculty provided higher ratings of leaders' articulation of criteria for promotion/tenure than did white female faculty.

In the *arts and humanities*, the four gender/race-ethnicity groups provided mean ratings of the usefulness of feedback from department/unit leaders that fell between 'average' and 'above average' in 2012. The same was true of their ratings of department/unit leaders' articulation of clear criteria for tenure and promotion. White male faculty provided higher ratings of their leaders' articulation of criteria for promotion/tenure compared to white female faculty.

Cross-Disciplinary Analyses

Finally, 2012 faculty ratings of feedback from department/unit leaders were analyzed for differences across the three disciplinary groups (science and engineering, social sciences, and arts and humanities). Compared to faculty in the social sciences (with a mean of 3.19) and the arts and humanities (3.15), faculty respondents in science and engineering (3.41) provided significantly more positive ratings of department/unit leaders' feedback about performance. However, the three disciplinary groups did not differ with regard to their ratings of their department/unit leaders' articulation of clear criteria for tenure and promotion.

INFLUENCE, SELF-DETERMINATION, BOUNDARIES, AND GROWTH

INFLUENCE (TABLE 4)

The survey identified nine areas of influence in department activities, and respondents were asked to rate their level of felt influence in each of the areas using a five-point scale that ranged from a low of 'really no influence' to a high of 'tremendous influence.' Two areas addressed influence in the domain of education (curriculum decisions and selecting new graduate students and residents/fellows); these were combined to create a mean felt influence over educational matters scale. Three variables addressed influence in faculty matters (selecting new faculty members, determining who gets tenure, and selecting the next unit head) and were combined to create a mean felt influence over faculty matters scale. Three different items addressed influence concerning departmental resources (size of salary increase, obtaining money for travel, and securing facilities or equipment for research); these items were combined to create a mean felt influence over resource allocations scale. The ninth area, influence over the overall unit's climate/culture, remained a separate item.

In 2012 the following three items were added to the survey and were combined to create an impact scale[5]: I have significant influence over what happens in my department; I have a great deal of control over what happens in my department; and my impact on what happens in my department is large.

WITHIN GROUP OVER TIME

In *science and engineering*, white men reported more felt influence over faculty matters and educational matters in 2012 (means of 2.75 and 3.27, respectively) compared to 2001 (means of 2.44 and 2.97, respectively). By contrast, white women reported less felt influence over educational matters in 2012 (2.89) compared to 2001 (3.29) and less felt influence over resource allocation in 2012 (1.94) compared to 2006 (2.26) and 2001 (2.38). Women of color reported more felt influence over their units' climate in 2012 (2.49) compared to 2006 (1.94), and their level of felt influence over resource allocations was higher in 2012 (2.20) compared to 2006 (1.66). Finally, there was a trend for men of color to feel less influence over educational matters in 2012 (2.97) compared to 2006 (3.26).

In the *social sciences*, there were no statistically significant over time differences. However, there was a trend for male faculty of color to feel less influence over faculty matters in 2012 (2.30) compared to 2006 (2.66).

BETWEEN GROUPS WITHIN TIME

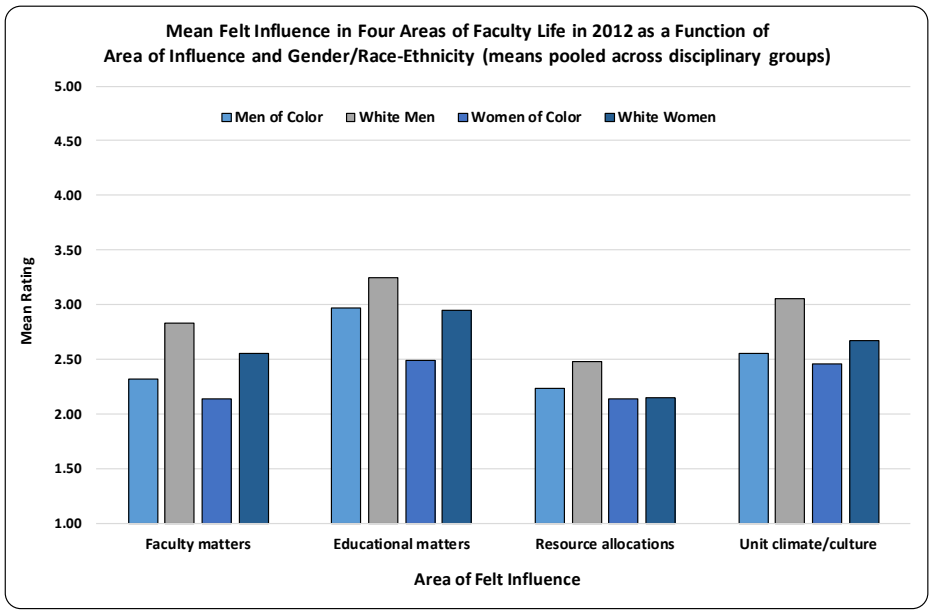
In *science and engineering* in 2012, white men had higher mean levels of felt influence over faculty matters compared to men of color. At all three time points, women of color felt less influence over faculty matters compared to white women and men of color (these were a mix of significant differences and trends).

With regard to felt influence over educational matters in *science and engineering*, white women felt higher levels compared to white men in 2001, but lower levels in 2012. In 2012 there was a trend for white men

[5] Cronbach's alpha = .94 (this is a measure of how closely related a set of items are, with alphas closer to 1.00 indicating that items are highly related and can justifiably be combined to create a composite variable).

to feel more influence over educational matters compared to men of color. At all three data points, women of color felt less influence over educational matters compared to men of color and white women.

When asked about influence over resource allocations in *science and engineering*, female faculty of color felt lower levels of influence compared to white women and men of color in 2006; however, these differences did not exist in 2012. In 2012, white male faculty felt more influence over resource allocations compared to white female faculty.



When asked about felt influence over unit climate in *science and engineering*, female faculty of color reported lower levels compared to men of color and white women in 2006; these differences did not exist in 2012. In 2012 white men felt more influence over climate compared to white women and men of color.

Mean impact scores, measured on a 5-point scale in 2012 only, were low to moderate in *science and engineering*, ranging from 2.46 for white women to 2.99 for white men. White men reported significantly higher levels of impact compared to men of color and white women.

In the *social sciences*, white men felt more influence over faculty matters, resource allocations, and climate compared to men of color and white women in 2012; these differences did not exist in 2006. In 2012, but not in 2006, women of color felt less influence over educational matters compared to men of color and white women. Mean impact scores were low to moderate, ranging from 2.49 for women of color to 3.10 for white men; white men reported higher levels of impact compared to white women.

In the *arts and humanities* in 2012, women of color felt less influence over faculty matters and educational matters compared to white women and men of color. Mean impact scores were low to moderate, ranging from 2.16 for women of color to 2.88 for white men; none of the four gender/race-ethnicity groups differed significantly on the impact scale.

CROSS-DISCIPLINARY ANALYSES

Finally, for 2012, ratings of influence and impact were analyzed for differences across the three disciplinary groups (science and engineering, social sciences, and arts and humanities). Faculty respondents from the arts and humanities (2.73) reported feeling significantly more influence over faculty matters compared to

faculty from science and engineering (2.58); the social science faculty (2.70) did not differ significantly from the other two disciplinary groups on this question. There were no other differences between the three disciplinary groups where the other influence and impact variables were concerned.

SELF-DETERMINATION, BOUNDARIES, AND GROWTH/LEARNING (TABLE 4)

Several new questions were added in 2012 to assess faculty members' felt experience of self-determination, the firmness of boundaries between work and non-work aspects of life, and experiences of growth in their positions. Three items (*I can decide on my own how to go about doing my work; I have significant autonomy in determining how I do my job; I have considerable opportunity for independence and freedom in how I do my job*) were combined to create a self-determination scale[6]. Four items (*I allow work to interrupt me when I spend time with my family and friends; I regularly bring work home; I respond to work-related communications during my personal time away from work; I work during my vacations*) were combined to create a boundary management scale[7]. And three different items (*I find myself learning often; I continue to learn more and more as time goes by; I have developed a lot as a person*) were combined to create a growth/learning scale[8].

BETWEEN GROUPS WITHIN TIME

In *science and engineering* in 2012, average self-determination scores were generally high, ranging from 4.10 for women of color to 4.57 for men of color (on a 5-point scale). Women of color reported lower levels of self-determination in 2012 compared to white women and men of color. Mean learning scores ranged from 4.42 for men of color to 4.58 for women of color (on a 5-point scale). Boundary management scores ranged from a low of 1.38 for women of color to a high of 1.62 for white men (on a five-point scale), with higher scores indicating stronger boundaries between personal life and work life[9]. There were no differences on either growth/learning or boundary management as a function of gender/race-ethnicity group membership.

In the *social sciences* in 2012, mean self-determination scores were high, ranging from 4.53 for white women to 4.71 for women of color. Mean growth/learning scores were also high, ranging from 4.56 for white men to 4.73 for women of color. There were no group differences on these two measures. Boundary management scores ranged from 1.40 for women of color to 1.63 for white men, and white men reported boundaries across personal and work life that were significantly more solid compared to those reported by white women (although the magnitude of this difference was not large).

In the *arts and humanities* in 2012, mean self-determination scores were moderate to high, ranging from 3.96 for women of color to 4.44 for white men. Mean growth/learning scores were high, ranging from 4.34 for male faculty of color to 4.57 for white female faculty. Mean boundary management scores ranged from

[6] See Spreitzer (1995); internal consistency (Cronbach's alpha) was high at .95
[7] See Kossek et al. (2012); internal consistency was good at .74
[8] See Spreitzer et al. (2005) and Porath et al. (2001); internal consistency was high at .85
[9] The four boundary management items were reverse scored prior to the creation of the composite boundary management variable, allowing higher scores on this scale indicate more solid boundaries between work life and non-work life.

1.36 for white women to 1.58 for men of color. There were no differences on these three measures as a function of gender/race-ethnicity group membership.

CROSS-DISCIPLINARY ANALYSES

In a final set of analyses of the variables reported on in this section, it was found that all three disciplinary groups (science and engineering, social sciences, and arts and humanities) significantly differed from each other on the self-determination variable. While all three groups had means greater than 4, the social sciences faculty (4.56) had the highest mean scores on this variable, followed by science and engineering (4.39) and then arts and humanities (4.23).

TEACHING, SERVICE, AND RECOGNITION

TEACHING (TABLE 5)

Several questions about teaching were new in 2012. Five questions assessed the extent to which various types of teaching filled up their teaching time: one-on-one instruction, formal seminar courses, formal lecture courses, occasional lectures, and modeling correct professional behavior (ratings ranged from a low of 1 for 'none' to a high of 4 for 'all'). Faculty also rated their satisfaction with their teaching loads on a scale ranging from a low of 1 for 'very dissatisfied' to a high of 5 for 'very satisfied.' Further, faculty were asked about the number of undergraduate and graduate students for whom they serve as primary advisor.

BETWEEN GROUPS WITHIN TIME

In *science and engineering*, faculty members felt 'somewhat satisfied' with their teaching load, on average (a mean of 3.98 on the 5-point scale). When asked about extent to which various types of teaching filled up their teaching time, responses were moderate for: one-on-one instruction (2.47), teaching formal lecture courses (2.35), and modeling professional behavior (2.25). Lower mean responsibility scores were provided for giving occasional lectures (1.79) and teaching seminars (1.72). Faculty members reported, on average, serving as primary advisors for roughly 4 graduate (3.82) and 4 undergraduate students (4.21) per year.

In *science and engineering* there were no differences among the four gender/race-ethnicity groups with regard to satisfaction with teaching load and number of undergraduate advisees. However, women of color reported having fewer graduate student advisees compared to white women (a trend). There were a number of teaching-related differences among the four gender/race-ethnicity groups. There was a trend for female faculty of color to report spending more of their time engaged in one-on-one instruction compared to male faculty of color. White female faculty reported spending less of their time giving occasional lectures in large courses compared to white male faculty. Finally, white male faculty, compared to male faculty of color, reported that more of their time was used modeling correct professional behavior.

In the *social sciences*, faculty were between 'neutral' and 'somewhat satisfied' with regard to satisfaction with teaching load, (a mean of 3.72 on the 5-point scale). On average, faculty reported more of their teaching responsibilities lay in the areas teaching formal lecture courses (2.48), teaching seminar courses (2.23), and modeling professional behavior (2.22). Lower mean responsibility scores were provided for one-

on-one instruction (2.08) and giving occasional lectures (1.68). Faculty members reported, on average, serving as primary advisors for roughly 7 graduate (6.67) and 4 undergraduate students (4.09) per year.

In the *social sciences* there were no differences among the four gender/race-ethnicity groups with regard to satisfaction with teaching load, and number of graduate and undergraduate student advisees. With regard to types of teaching responsibilities, a few group differences did emerge. White women reported spending less time teaching formal lecture courses compared to white men and women of color. White female faculty also reported spending more time than white male faculty modeling correct professional behavior.

In the *arts and humanities*, faculty felt 'somewhat satisfied' with their teaching loads, on average (a mean of 3.92 on the 5-point scale). The faculty reported more of their teaching responsibilities lay in the areas of teaching seminars (mean of 2.30), modeling professional behavior (2.23), teaching lecture courses (2.22), and providing one-on-one instruction (2.14). A lower mean responsibility score was provided for giving occasional lectures (1.64). Faculty members reported, on average, serving as primary advisors for roughly 4 graduate (3.89) and 8 undergraduate students (8.05) per year.

In *arts and humanities*, white female faculty reported less satisfaction with their teaching loads compared to white male faculty. Female faculty of color reported spending more time teaching formal courses (both lectures and seminars) each academic year compared to male faculty of color (a trend). Further, female faculty of color reported spending more time teaching formal lecture courses compared to white female faculty, whereas white female faculty reported spending less time giving occasional lectures in large courses compared to female faculty of color.

CROSS-DISCIPLINARY ANALYSES

A final series of analyses of 2012 data tested for potential differences among the three disciplinary groups (science and engineering, social sciences, and arts and humanities) on the teaching variables discussed above. Faculty respondents in science and engineering (3.98) and the arts and humanities (3.93) did not differ significantly with regard to mean satisfaction with teaching load, but both groups had higher mean satisfaction with teaching load compared to faculty in the social sciences (3.69). Faculty in science and engineering reported spending more of their time engaged in one-on-one instruction and giving occasional lectures in large courses (means were 2.47 and 1.79, respectively) compared to faculty in the arts and humanities (2.17 and 1.63, respectively) and the social sciences (2.09 and 1.67, respectively). Conversely, compared to faculty in science and engineering (1.72), faculty in the arts and humanities (2.29) and the social sciences (2.23) reported spending more of their time teaching seminar courses. Faculty in the social sciences (2.47) reported spending more time teaching formal lecture courses compared to faculty in the arts and humanities (2.20).

When asked about the number of formal courses they teach each year, the three disciplinary groups differed significantly from each other, with faculty in the arts and humanities reporting the largest mean number (3.60), followed by the social sciences (3.36) and then science and engineering (2.75). When asked about the number of *undergraduate students* they advise each year, the faculty in the social sciences (4.40) and science and engineering (4.21) did not differ from each other, but both reported a smaller mean

number compared to faculty in the arts and humanities (7.70). When asked about the number of *graduate students* they advise each year, the faculty in science and engineering (3.82) and the arts and humanities (4.01) did not differ from each other, but both reported a smaller mean number compared to faculty in the social sciences (6.50).

SERVICE (TABLE 6)

Respondents were asked how many committees they typically serve on in a year, as well as the number they chair. They were also asked if they ever felt excluded from participating on important decision-making college- and/or department-level committees (questions about exclusion were asked in 2006 and 2012). Finally, a broadly-worded item asked respondents if they had ever been asked to serve and/or had served as any of the following: (a) department chair; (b) leader of a section, area, or program within a department or unit; and/or (c) director or administrator of a center, lab, institute, or program. (To streamline the reporting below, this last item will be described as measuring 'organization/program leadership.')

WITHIN GROUPS OVER TIME

For *science and engineering* in 2012, the average number of committees faculty served on in a typical year ranged from a low of 2.85 for men of color to a high of 3.76 for white men, and there were no changes across time for any of the four gender/race-ethnicity groups with regard to this variable. The mean number of committees chaired in a typical year ranged from a low of .43 for women of color to a high of .88 for white men in 2012. On average, white male faculty served as chairs on more committees in 2006 compared to both 2001 and 2012.

In *science and engineering* in 2012, the percentage of full professors[10] who had ever served as organization/program leaders ranged from a low of 50% for women of color to a high of 69% for white men. There were no changes over time for full professors in any of the gender/race-ethnicity groups with regard to serving in this capacity.

The rate at which faculty in *science and engineering* reported feeling excluded from participating on decision-making committees was moderate, ranging from a low of 21% for white men to a high of 29% for women of color in 2012. There were no statistically significant differences across time within the four gender/race-ethnicity groups with regard to the exclusion question.

In the *social sciences* in 2012, the mean number of committees chaired in a typical year ranged from a low of .45 for male faculty of color to a high of .87 for white female faculty. Three of the four gender/race-ethnicity groups did not differ in terms of the number of committees they served on in 2012 compared to 2006; the exception was white male faculty, who served on fewer committees in 2012. The same pattern was found for number of committees chaired, with only white male faculty reporting a significant decrease in 2012 compared to 2006. In 2012 the average number of committees faculty served on in a typical year ranged from a low of 2.82 for men of color to a high for white women of 3.64.

[10] We focused solely on full professors for analyses of questions about being asked to serve and/or having served as department chair, department section/area/program chair, or center/lab/institute/program director or administrator.

In the *social sciences* in 2012, the percentage of full professors who had ever served as organization/program leaders ranged from a low of 50% for women of color to a high of 82% for men of color. There were no differences from 2006 to 2012 within any of the four gender/race-ethnicity groups with regard to this question.

The rate at which *social sciences* faculty reported feeling excluded from participating on decision-making committees was moderate, ranging from a low of 13% for white men to a high of 26% for men of color in 2012. There were no statistically significant changes in the rates of feeling such exclusion in any of the four gender/race-ethnicity groups from 2006 to 2012.

Between Groups Within Time

In *science and engineering*, white women reported serving on significantly more committees in a typical year compared to women of color in 2006, and compared to white men in 2001. However, there were no group differences with regard to this question in 2012. Concerning number of committees typically chaired in a year, there was a trend in 2006 for white women to report more than women of color. However, there were no differences among the four gender/race-ethnicity groups with regard to number of committees chaired in 2001 or 2012.

In *science and engineering* there were no significant differences between any of the gender/race-ethnicity groups with regard to serving as organization/program leaders at any of the three time points. Due to the small numbers of full professors in some of the gender/race-ethnicity groups, additional analyses were performed to simply analyze gender differences (with participants pooled across race-ethnicity) and race-ethnicity differences (with participants pooled across gender); no significant differences emerged. There were also no differences - in either 2006 or 2012 - with regard to feelings of exclusion from decision-making committees among any of the four gender/race-ethnicity groups.

In the *social sciences* in 2006, there were no differences among the four gender/race-ethnicity groups with regard to the number of committees served on in a typical year. However, in 2012 white female faculty reported serving on a greater number of committees in a typical year compared to white men. In 2012 there was a trend for male faculty of color to report more than white male faculty that they felt excluded from decision-making committees.

In the *social sciences* there were no significant differences between any of the gender/race-ethnicity groups with regard to serving as organization/program leaders in either 2006 or 2012. Due to the small numbers of full professors in some of the gender/race-ethnicity groups, additional analyses were performed to simply analyze the main effects of gender and of race-ethnicity; no significant differences were found.

Faculty in the *arts and humanities* were surveyed for the first time in 2012. In 2012 the average number of committees faculty served on in a typical year ranged from a low of 3.17 for male faculty of color to a high of 3.75 for white female faculty. The average number of committees chaired in a typical year ranged from a low of .70 for female faculty of color to a high of .92 for male faculty of color. In 2012, the percentage of full

professors who had ever served as organization/program leaders ranged from a low of 40% for women of color to a high of 73% for white men. The rate at which faculty reported feeling excluded from participating on decision-making committees was moderate, ranging from a low of 15% for women of color to a high of 31% for white women in 2012.

In the *arts and humanities* in 2012 there were no differences among the four gender/race-ethnicity groups with regard to the following: number of committees served on or chaired in a typical year; feelings of exclusion from decision-making committees; and percentages of full professors who had ever served as organization/program leaders. As was done above, due to the small numbers of full professors in some of the gender/race-ethnicity groups, additional analyses were performed to analyze the main effects of gender and race-ethnicity. One result trended toward significance: white full professors were more likely than full professors of color to report having been asked to serve as organization/program leaders.

CROSS-DISCIPLINARY ANALYSES

Finally, for 2012, the service-related variables discussed above were analyzed for differences across the three disciplinary groups. The three groups did not differ from each other with regard to the number of committees served on or chaired in a typical year. There were also no significant differences among the three groups with regard to questions about taking on positions of organization/program leadership (as was done above, these particular questions were analyzed for full professors only). There were group differences for the question about feeling excluded from important decision-making committees: respondents from the social sciences were less likely (18%) to report such feelings compared to respondents from science and engineering (23%) and the arts and humanities (27%; the latter two groups did not differ from each other).

RECOGNITION (TABLE 7)

To assess experiences of recognition, faculty respondents were asked if their departments had ever nominated them for an award in research, teaching, and service. A fourth item asked whether or not their departments had failed to nominate them for an award for which they were qualified.

WITHIN GROUP OVER TIME

In *science and engineering*, white men were more likely to report that they had been nominated for a research award in 2012 compared to 2001. White men were less likely to report that their departments had failed to nominate them for awards in 2012 and in 2006 compared to 2001. In contrast, white women were more likely to report that their department failed to nominate them for an award for which they were qualified in 2012 compared to both 2001 and 2006. Female faculty of color were less likely to report that their departments had failed to nominate them for awards in 2012 and in 2006 compared to 2001. There was a trend for male faculty of color to report that their departments had failed to nominate them for an award in 2012 compared to 2001.

In the *social sciences* there were no across-time differences from 2006 to 2012 for any of the four gender/race-ethnicity groups with regard to awards.

BETWEEN GROUPS WITHIN TIME

In *science and engineering* in 2012, white women were more likely than white men to report that their department failed to nominate them for an award for which they were qualified, and were less likely than white men to have been nominated for a research award; these differences did not exist in 2001 or 2006. In 2006 women of color were more likely than white women to report that their department had failed to nominate them for an award; in 2012 the pattern was reversed, with white women being more likely than women of color to report that their department had failed to nominate them for an award. In 2006 and 2012 there were trends for men of color to be more likely than white men to report their department's failure to nominate them for an award. Further, in 2012 there was a trend for male faculty of color to be less likely than white men to report being nominated for a teaching award.

In the *social sciences* in 2006, white women were more likely than white men to report that their department failed to nominate them for an award for which they were qualified; no such difference emerged in 2012. However, in 2012 white women were more likely than white men to have been nominated for a service award. In 2006, female faculty of color were more likely than white female faculty to have been nominated for a service award; in 2012 no such difference existed.

In the *arts and humanities* in 2012, there were was a trend for white women to be more likely than women of color to report that their department failed to nominate them for an award for which they were qualified. There were no group differences related to nomination for different awards.

CROSS-DISCIPLINARY ANALYSES

A final series of analyses of 2012 data tested for potential differences among the three disciplinary groups on the recognition variables discussed above. There were no group differences with regard to the experience of failing to receive an award nomination that was perceived as deserved. There were group differences with regard to the likelihood of being nominated for a research award: faculty in science and engineering (41%) were more likely to have received such a nomination than were faculty from the social sciences (34%) and the arts and humanities (29%; the latter two groups did not differ from one another). Similarly, faculty in science and engineering (20%) were more likely to have received a nomination for a service award than were faculty in the social sciences (13%) and the arts and humanities (13%). The disciplinary groups did not differ on the likelihood of being nominated for a teaching award.

RESOURCES AND SUPPORT

Faculty members were queried about their satisfaction with both office and research space as well as satisfaction with computer equipment, lab equipment, and vendor services (e.g., repairs, supplies, upgrades). They were also asked if their department chair helps them obtain the resources they need. In 2006 and 2012 questions were also asked about satisfaction with other aspects of their research space and equipment: location, computing, safety, and maintenance. In 2012 faculty were asked about their level of satisfaction with both external and university funding. In addition to these questions, faculty were asked if they sought help from the university to find appropriate employment for their partner at all three time

points; those who had done so were also asked about their satisfaction with help they received. Finally, faculty were asked if they had ever considered leaving UM to improve their partner's career opportunities.

SATISFACTION WITH RESOURCES (TABLE 8)

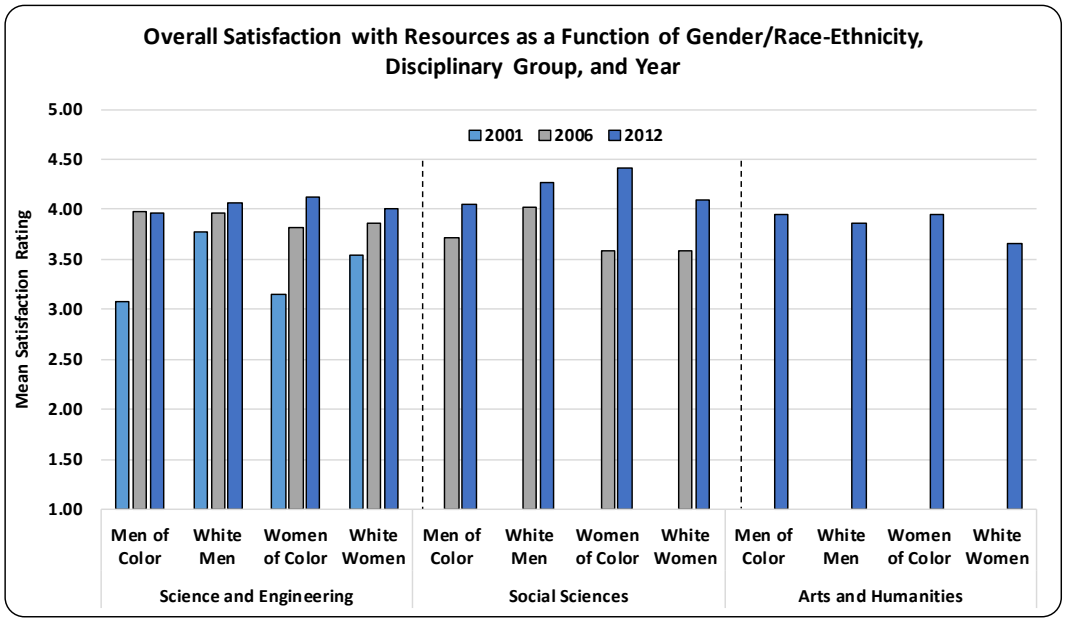
A summary scale was created to capture faculty members' overall satisfaction with resources representing the mean of five items measuring satisfaction with: amount of office space, amount of research space, computer equipment, lab equipment, and vendor services. Faculty members were also asked to rate the effectiveness with which their department chair helps them obtain needed resources.

WITHIN GROUP OVER TIME

In 2012, all mean ratings provided by *science and engineering* faculty for satisfaction with resources fell in the 'somewhat satisfied area' of the summary scale (i.e., roughly 4 on a five-point scale where 5 is 'very satisfied'). All four gender/race-ethnicity faculty groups in *science and engineering* reported higher overall satisfaction with resources in 2012 compared to 2001, and all but white men showed higher satisfaction in 2006 compared to 2001. When asked about the effectiveness with which their department chair helps them obtain needed resources, white male faculty, white female faculty, and female faculty of color provided more positive ratings in 2012 compared to 2001. Further, male faculty of color, white male faculty, and female faculty of color in *science and engineering* provided more positive ratings on this question in 2012 compared to 2006.

In 2012, average ratings of overall satisfaction with resources were in the 'somewhat satisfied' area of the summary scale for the *social sciences* faculty. Female faculty of color and white female faculty reported higher overall satisfaction with resources in 2012 compared to 2006. There were no differences over time on ratings of department chairs helping *social sciences* faculty with obtaining needed resources.

BETWEEN GROUPS WITHIN TIME



For the *science and engineering* faculty, white men reported higher overall satisfaction with resources compared to men of color in 2001. However, satisfaction levels did not differ among the four gender/race-ethnicity groups in 2006 or 2012. When asked about the effectiveness with which their department chairs help them obtain

needed resources, both men of color and white women provided more positive ratings in 2006, but not 2012, compared to female faculty of color. In 2012, white men provided more positive assessments of their chairs compared to white women.

For the *social sciences* faculty, levels of overall satisfaction with resources did not differ among the four gender/race-ethnicity groups in 2012. In 2006 and 2012, there were no group differences with regard to reports of assistance provided by chairs, with mean ratings falling in the 'average' to 'above average' range.

In the *arts and humanities* in 2012, there were no differences in overall satisfaction with resources as a function of gender/race-ethnicity group. Average ratings of overall satisfaction with resources were in the 'somewhat satisfied' area of the summary scale. In 2012, assistance from chairs was rated similarly among the four gender/race-ethnicity groups, with mean scores falling in the 'average' to 'above average' range.

CROSS-DISCIPLINARY ANALYSES

Analyses of 2012 data tested for potential differences among the three disciplinary groups on the satisfaction-with-resources variables discussed above. The respondents from science and engineering (4.03) and the social sciences (4.17) reported significantly higher mean satisfaction with resources compared to faculty in the arts and humanities (3.78). The three groups were similar, however, with regard to their satisfaction with assistance provided by department chairs/leaders for obtaining needed resources.

OVERALL SATISFACTION WITH WORK SPACE (TABLE 8)

A summary scale was created to capture faculty members' overall satisfaction with the research and office spaces they had been allocated. The summary scale was created as the mean of five items measuring satisfaction with: research space location, amount of research space, contiguity of research space, amount of office space, and location of office space. The five items were assessed on a five-point scale that ranged from 'very dissatisfied' to 'very satisfied.'

WITHIN GROUP OVER TIME

For the *science and engineering* faculty in 2012, mean ratings of satisfaction with research and office space were in the 'somewhat satisfied' area of the summary scale. All four gender/race-ethnicity faculty groups reported greater satisfaction with research and office space in 2012 compared to 2001. There were also reports of greater satisfaction in 2012 compared to 2006 for white men and women of color.

For the *social science* faculty in 2012, mean ratings of satisfaction with research and office space fell between 'somewhat satisfied' and 'very satisfied' on the summary scale. Both women of color and white women reported greater overall satisfaction with research and office in 2012 compared to 2006.

BETWEEN GROUPS WITHIN TIME

For the *science and engineering* faculty in 2001, white men reported greater satisfaction with their research and office spaces compared to men of color. In 2006, among the *science and engineering* faculty, men of color reported greater satisfaction with their office/research spaces compared to women of color and

white men. In 2012 there were no differences in satisfaction with office/research space between any of the four gender/race-ethnicity faculty groups.

For the *social science* faculty in 2006, white men reported greater satisfaction with office/research spaces compared to white women. However, in 2012 there were no mean differences in satisfaction with office/research space between any of the four gender/race-ethnicity groups.

In the *arts and humanities* in 2012, there were no mean differences in satisfaction with office/research spaces between any of the four gender/race-ethnicity groups; mean ratings were in the 'somewhat satisfied' area of the summary scale.

CROSS-DISCIPLINARY ANALYSES

Analyses of 2012 data explored potential differences among the three disciplinary groups on their overall satisfaction with their work spaces. The mean ratings from faculty in science and engineering (4.18) and the social sciences (4.30) did not differ, but both were significantly more positive than the ratings provided by faculty in the arts and humanities (3.90).

SATISFACTION WITH SAFETY AND BUILDING MAINTENANCE (TABLE 8)

WITHIN GROUP OVER TIME

In 2006 and 2012, faculty members in *science and engineering* were asked about their satisfaction with the safety of their research spaces. In 2012 the mean safety ratings for all four gender/race-ethnicity groups were high (4.44 or greater on a five-scale ranging from 'very dissatisfied' to 5 'very satisfied'). White men and women of color both reported greater satisfaction with safety in 2012 compared to 2006.

Faculty members in *science and engineering* were also asked to rate their satisfaction with maintenance of building problems (the types of building problems addressed by UM Plant Operations). In 2012, the mean satisfaction ratings for building maintenance for all four gender/race-ethnicity groups were close to 'somewhat satisfied' (i.e., roughly 4 on the 5-point rating scale). White males reported greater satisfaction with maintenance in 2012 compared to 2006.

In 2012, the mean safety ratings for all four gender/race-ethnicity groups in the *social sciences* were high (4.49 or greater). White women reported greater satisfaction with safety in 2012 compared to 2006. In 2012, the mean satisfaction ratings for building maintenance for all four gender/race-ethnicity groups in the *social sciences* were in the 'somewhat satisfied' range of the rating scale. Both white men and white women reported greater satisfaction with maintenance in 2012 compared to 2006.

BETWEEN GROUPS WITHIN TIME

For the *science and engineering* faculty in 2006, both men of color and white women reported greater satisfaction with safety compared to women of color and white men. However, in 2012 there were no differences in mean safety ratings among the four gender/race-ethnicity faculty groups in *science and engineering*. In 2006, male faculty of color reported greater satisfaction with maintenance compared to

white male faculty members. In 2012 there were no differences among the four gender/race-ethnicity groups with regard to satisfaction with maintenance.

For the *social science* faculty in 2006, male faculty of color reported greater satisfaction with safety compared to female faculty of color, and white male faculty members reported greater satisfaction with safety compared to white female faculty. However, in 2012 there were no differences in mean safety ratings among the four gender/race-ethnicity faculty groups; safety ratings for all groups were high. Further, there were no differences among the four gender/race-ethnicity groups with regard to satisfaction with maintenance in either 2006 or 2012.

For the *arts and humanities* faculty in 2012 there were no differences in satisfaction with safety among the four gender/race-ethnicity groups; mean ratings were all in the area of 'somewhat satisfied' (i.e., roughly 4 on the 5-point scale). There were also no mean group differences with regard to satisfaction with maintenance in 2012; mean ratings fell in the 'neutral' to 'somewhat satisfied' range.

CROSS-DISCIPLINARY ANALYSES

The 2012 data on satisfaction with safety and building maintenance were also analyzed for potential differences between the three disciplinary groups (science and engineering, social sciences, and arts and humanities). The mean satisfaction with safety ratings from faculty in science and engineering (4.42) and the social sciences (4.56) did not differ from each other, but both were significantly more positive than the ratings provided by faculty in the arts and humanities (4.13). The mean satisfaction with maintenance ratings science and engineering (3.35) and the arts and humanities (3.15) did not differ from one another, but both were significantly less positive than the ratings provided by respondents from the social sciences (3.65).

SATISFACTION WITH FUNDING (TABLE 8)

BETWEEN GROUPS WITHIN TIME

In 2012 only, faculty were asked about their levels of satisfaction with both university and external funding. For both funding sources, *science and engineering* faculty provided mean ratings that fell between 'neutral' and 'somewhat satisfied' (between 3.60 and 3.83 on a five-point scale), and there were no differences among the four gender/race-ethnicity faculty groups.

In the *social sciences* there were also no differences among the four gender/race-ethnicity faculty groups where questions about satisfaction with funding were concerned. Mean ratings for satisfaction with university funding were in the 'somewhat satisfied' range (ranging from 4.05 to 4.21 on a five-point scale); mean ratings for satisfaction with external funding fell between 'neutral' and 'somewhat satisfied' (ranging from 3.51 to 3.96).

In the *arts and humanities*, white male faculty and female faculty of color reported greater satisfaction with university funding compared to white female faculty. However, all four gender/race-ethnicity faculty groups provided satisfaction ratings for university funding that were close to 'somewhat satisfied' (mean

ratings ranged from 3.77 to 4.29). The four gender/race-ethnicity groups did not differ in their satisfaction ratings for external funding; mean ratings ranged from 3.12 to 3.79.

The 2012 data on satisfaction with funding were also analyzed for potential differences between the three disciplinary groups. Mean ratings of satisfaction with *external funding* from science and engineering (3.70) and social sciences (3.79) respondents did not differ, but both were significantly more positive than the mean rating from arts and humanities respondents (3.30). Mean ratings of satisfaction with *university funding* were similar for the social sciences (4.13) and the arts and humanities (3.95), and both were significantly more positive than the mean rating provided respondents from science and engineering (3.62).

QUESTIONS ABOUT FACULTY MEMBERS' SPOUSES AND PARTNERS (TABLE 8)

WITHIN GROUP OVER TIME

For *science and engineering* faculty in 2012, rates for seeking UM assistance with partner employment were moderate across the faculty and ranged from a low of 27% for white men to a high of 50% for women of color. The rate was significantly higher for white men and women of color in 2012 compared to 2001; there were also trends for the rate in 2012 to be higher than 2006 for women of color. Women of color expressed more satisfaction with UM's assistance with partner employment in 2012 compared to 2001. Men of color were less satisfied with this type of assistance in 2012 compared to 2006 (but were more satisfied in 2006 compared to 2001). In 2012, rates of considering leaving UM to improve a partner's career ranged from a low of 32% for white men to a higher of 57% for women of color. In 2012, white men, white women, and women of color in *science and engineering* were more likely to report that they had considered leaving UM to improve their partners' career compared to 2006; there was a trend for men of color to report the same.

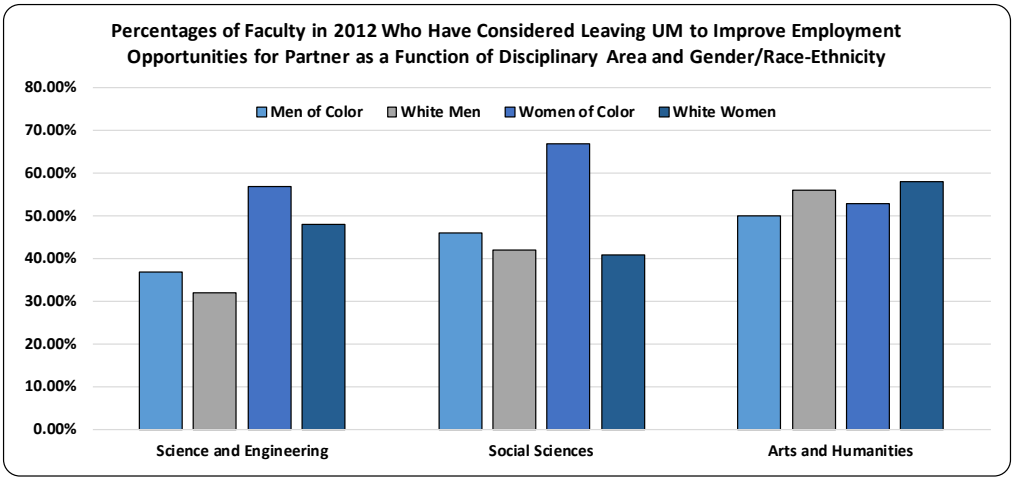
For faculty in the *social sciences*, 2012 rates for seeking UM assistance with partner employment were moderate, ranging from a low of 29% for women of color to a high of 41% for men of color. Women of color were less likely to have sought help from UM with partner employment in 2012 compared to 2006. In 2012, mean ratings for satisfaction with UM's assistance with partner employment were fairly neutral (between 2.50 and 3.75 on a 5-point scale); there were no mean across-time satisfaction differences for any of the four gender/race-ethnicity groups. Women of color, white men, and white women in the *social sciences* were all significantly more likely to have considered leaving UM to improve their partners' careers in 2012 compared to 2006.

BETWEEN GROUPS WITHIN TIME

In *science and engineering* in 2001, white women were more likely than white men to report that they had considered leaving UM to improve their partners' career opportunities; in 2012 there was a similar difference, but it only trended toward significance. In 2006 male faculty of color were more satisfied with UM's assistance with partner employment compared to white male faculty; in 2012, there were no differences between the four gender/race-ethnicity faculty groups with regard to this question, and mean satisfaction ratings in 2012 were all close to 'neutral.'

For faculty in the *social sciences* in 2006 and 2012, there were no group differences with regard to whether faculty considered leaving UM to improve their partner's career or sought employment help for their

partner. Further, there were no differences in mean satisfaction ratings for UM assistance; in 2012, these mean ratings were relatively close to 'neutral.'



For faculty in the *arts and humanities*, 2012 rates for seeking UM assistance with partner employment were moderate, ranging from a low of 39% for men of color to a high of 56% for women of color. There was a trend for female faculty of color to be more likely than male faculty of color to have sought help from UM with partner employment. There were no differences between the four gender/race-ethnicity groups with regard to consideration of leaving UM to improve a partner's career, and with regard to satisfaction with UM assistance with partner employment (mean ratings in 2012 fell in the range of 'somewhat dissatisfied' to 'neutral').

Cross-Disciplinary Analyses

In a final series of analyses using 2012 responses, the three disciplinary groups were compared on their responses to the questions about spouses/partners. When asked if they had ever sought UM assistance with spouse/partner employment, 43% of respondents from the arts and humanities answered affirmatively, as did 35% from the social sciences and 32% from science and engineering. The difference between the arts and humanities and science and engineering was statistically significant. There were no mean differences between the disciplinary groups with regard their level of satisfaction with UM's help with spouse/partner employment. Faculty members were also asked if they had ever considered leaving UM to improve a spouse/partner's career opportunities; 54% of respondents from the arts and humanities answered affirmatively, as did 48% from the social sciences and 38% from science and engineering; the differences between science and engineering and the other two disciplinary groups were both significant.

Household

Faculty provided information on partner status, partner employment and parental status as well as a rating of their level of childcare responsibilities. Some of these questions were asked for the first time in 2012, while others were asked in previous years.

Family Demographics (Table 9)

Within Group over Time

In *science and engineering*, most faculty reported that their family included a partner and children in 2012; rates ranged from a low of 69% for white female faculty to a high of 83% for male faculty of color. In 2012,

very few faculty were single with children, ranging from a low of 0% for women of color to a high of 7% for white women. Being single without children was also relatively rare, with rates ranging from 3% for men of color to 11% for women of color in 2012. Finally, relatively few faculty were partnered with no children, with rates ranging from 6% for men of color to 10% for white women in 2012. There were no statistically significant cross-time differences in family composition within each of the four groups of faculty.

In the *social sciences*, most faculty reported that their family included a partner and children; in 2012 the highest rate of 79% was reported by white men and the lowest rate of 58% was reported by both white women and women of color. In 2012, rates were low to moderate for being single with children, ranging from a low of 4% for both men of color and white men to 17% for women of color. Being single without children was relatively rare, with rates ranging from 1% for white men to 9% for white women 2012. Finally, rates were low to moderate for having a partner but no children, ranging from 8% for women of color to 19% for men of color in 2012. There were no statistically significant differences in family composition within each of the four gender/race-ethnicity groups when comparing 2006 to 2012.

In the *arts and humanities*, rates for having both a partner and children in 2012 ranged from 30% for women of color to 71% for white men. Rates for being single with children in 2012 ranged from a low of 0% for men of color to a high of 16% for white women. Rates were low to moderate for being single without children, ranging from 6% for white men to 20% for women of color. Finally, rates were low to moderate for having a partner but no children, ranging from 7% for men of color to 25% for women of color.

BETWEEN GROUPS WITHIN TIME

In *science and engineering* in 2012, white women were more likely than white men to be single with children. Further, white men were more likely than white women to have a partner and children in 2001 and 2012. In a trend, faculty of color were more likely than white faculty to have a partner and children in 2012.

In the *social sciences* in 2012, white women were more likely than white men to be single with children, whereas white men were more likely than white women to have a partner and children. There were no other significant group differences with regard to family make-up.

In the *arts and humanities* in 2012, male faculty were more likely than female faculty to have a partner and children, and there were no other significant group differences where family composition was concerned.

CROSS-DISCIPLINARY ANALYSES

Using the data from the 2012 survey, potential family demographic differences between the three disciplinary groups (science and engineering, social science, and arts and humanities) were explored. Respondents from science and engineering were significantly less likely (3%) to identify themselves as single with children, compared to both the social sciences (7%) and arts and humanities faculty (7%). The science and engineering faculty were also less likely (7%) to report having a partner but no children, compared to both the social sciences (11%) and arts and humanities faculty (11%). All three disciplinary

groups differed significantly from each other with regard to having a partner and children: 67% for science and engineering faculty, 59% for social sciences faculty, and 50% for arts and humanities faculty.

PARTNER EMPLOYMENT (TABLE 9)

WITHIN GROUP OVER TIME

In *science and engineering* in 2012, 67% of white women and 81% of women of color had partners who were employed full time; these rates did not change significantly over time. By contrast, 37% of white men and 49% of men of color reported having partners who were employed full time; these rates were also similar over time. In 2012, roughly half of men with partners employed at UM reported that their partners worked as UM faculty members; 50% for men of color and 52% for white men. The rate was higher for women; 84% for women of color and 73% for white women. These rates were similar across time.

In the *social sciences* in 2012, full-time employment rates for respondents' partners were relatively similar across the four gender/race-ethnicity groups: 54% for men of color, 50% for white men, 58% for women of color, and 52% for white women. These rates did not change from 2006 to 2012. In 2012, over half of each of each gender/race-ethnicity group who had partners employed at UM reported that their partners worked as UM faculty members; 56% for men of color, 61% for white men, 100% for women of color, and 67% for white women. These rates were similar in 2006 and 2012.

In the *arts and humanities* in 2012, between 40% and 50% of faculty respondents reported that they had partners who were employed full time: 50% for men of color, 43% for white men, 40% for women of color, and 43% for white women. Of those respondents with partners employed at UM, the rates of reporting that these partners worked as UM faculty members were: 71% for men of color, 68% for white men, 38% for women of color, and 86% for white women.

BETWEEN GROUPS WITHIN TIME

In *science and engineering*, female faculty were more likely to have partners who were employed full-time compared to male faculty in 2001, 2006, and 2012. White women with employed partners were more likely than white men to have partners employed as UM faculty at all three data collection points. In 2012, there was also a trend wherein female faculty of color were more likely than male faculty of color to have partners employed as UM faculty.

In the *social sciences*, there were no differences in 2006 or in 2012 between any of the gender/race-ethnicity groups with regard to rates of partners working full time or working as UM faculty.

In the *arts and humanities* in 2012, white female faculty were more likely than female faculty of color to have partners employed as UM faculty. Other differences did not reach the criterion for statistical significance, in some cases due to low numbers.

CROSS-DISCIPLINARY ANALYSES

The 2012 survey data were used to explore differences between the three disciplinary groups with regard to partner employment (for those faculty who reported having a partner). The three groups were similar in

terms of the percentages of faculty who have partners who work full time: 46% for social sciences, 42% for science and engineering, and 40% for arts and humanities. Among those faculty who had partners employed at UM, the arts and humanities respondents (74%) were significantly more likely than their peers from science and engineering (59%) to have a partner employed as a UM faculty member (as opposed to another form of UM employment); the social sciences group (66%) did not differ from the other two groups.

FAMILY RESPONSIBILITIES (TABLE 9)

Faculty members were asked about their level of responsibility with regard to caring for children and/or another adult. In 2012 only they were also asked about whether certain areas of their professional lives have been affected by: (a) caring for children, (b) caring for a person who is ill, disabled, or aging, and (c) one's own health issues. Responses to these questions were scored both dichotomously (i.e., one or more areas of professional life affected versus none) and with regard to the number of areas of professional life affected. Examples of the areas of professional life that were included in the survey include: professional travel curtailed, disruptions of work during the day, unexpected time away from work, and opportunities not offered. For questions probing the effects of having children, analyses were run on the whole sample within each disciplinary area and on the subsample of those faculty with children.

Finally, a household responsibility variable was constructed based on: (a) family situation (e.g., having a partner and/or children), (b) partner employment status for those with partners, and (c) age of youngest child for those with children. Those with more family responsibilities (e.g., single parent, partner employed full time, and young child in home) received a higher household responsibility score compared to those with fewer family demands (e.g., no partner and no young children).

WITHIN GROUP OVER TIME

When considering all *science and engineering* faculty in the sample, the mean levels of childcare responsibility in 2012 were 2.28 for men of color, 2.29 for white men, 3.64 for women of color, and 3.74 for white women (on a 1-5 scale, with higher numbers indicating greater responsibility). When considering the whole sample of *science and engineering* faculty, the reported levels of child care responsibility were significantly higher for women of color and significantly lower for white men from 2006 to 2012; there were no over-time differences for men of color or white women. When looking only at those faculty members who had at least one child under age 18 in their households, those two significant differences were reduced to trends.

In *science and engineering*, levels of household responsibility in 2012 ranged from a low of 1.92 for white men to a high of 2.27 for women of color (on a 0-4 scale with higher numbers indicating greater responsibility). Levels of overall household responsibility were stable for all four faculty groups over time. In 2012, reported rates of caring for another adult ranged from a low of 8% for white women to a high of 27% for women of color.

When considering all *social sciences* faculty in the sample, the mean levels of childcare responsibility in 2012 were 2.64 for white men, 2.75 for men of color, 3.30 for women of color, and 3.48 for white women

(on a 1-5 scale with higher numbers indicating greater responsibility). When considering the whole sample of *social sciences* faculty, reported levels of child care responsibility did not differ within any of the four gender/race-ethnicity groups from 2006 to 2012; the same was true when the subsample of faculty with at least one child under age 18 was considered.

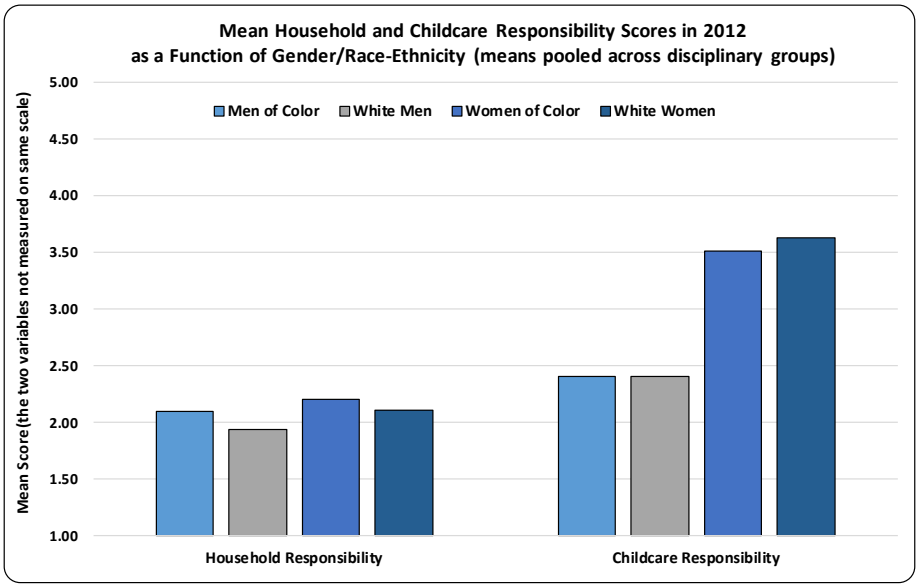
Reported levels of household responsibility for *social sciences* faculty in 2012 were rather similar across the four gender/race-ethnicity groups, ranging from 1.97 for white male faculty to 2.40 for female faculty of color. Levels of household responsibility were stable for all four faculty groups from 2006 to 2012. In 2012, reported levels of caring for another adult ranged from a low of 8% for male faculty of color to a high of 19% for female faculty of color.

When considering all *arts and humanities* faculty in the sample, the mean levels of childcare responsibility in 2012 were 2.60 for white men, 2.65 for men of color, 3.44 for women of color, and 3.52 for white women. Levels of household responsibility in 2012 ranged from a low of 1.88 for women of color to a high of 2.04 for men of color. In 2012, reported levels of caring for another adult ranged a low of 6% for white men to a high of 25% for male faculty of color. Analyses of changes over time were not possible, as the arts and humanities faculty were surveyed for the first time in 2012.

Between Groups Within Time

When considering the whole sample of *science and engineering* faculty, white female faculty reported higher levels of childcare responsibility compared to white men in both 2006 and 2012, and the same was true for women of color compared to men of color. When looking at the subsample of survey participants with at least one child under age 18 in the house, the same differences emerged. Further, in this subsample, white men reported higher levels of childcare responsibility than did men of color in 2006, but not in 2012.

Among the *science and engineering* faculty who had a child under age 18 in the home in 2012 - the only year this was asked – most reported that child care responsibilities affected some aspect of their professional lives; rates ranged from a low of 82% for men of color to a high of 97% for white women. When examining the subsample of participants with at least one child under 18 in the house, the total number of aspects of professional life affected by childcare responsibilities



differed as a function of gender/race-ethnicity group membership. Women of color reported more aspects of professional life affected by childcare responsibilities than did men of color, and the same was true for white women compared to white men. Further, white men reported more aspects of professional life affected by childcare responsibilities than did men of color.

In *science and engineering* in 2012, white women reported higher levels of household responsibility compared to white men; white women were also more likely than white men to report that they had sole responsibility for another adult's care. Further, in 2012 faculty of color (men and women) were more likely than white faculty to report that they were responsible for another adult's care.

In *science and engineering* in 2012, the percentage of faculty members reporting that caring for an ill, disabled, or aging person had impacted some aspect of their professional lives ranged from a low of 13% for men of color to a high of 31% for women of color; female faculty were more likely to report experiencing this than were male faculty. Finally, rates were relatively low for reports of one's own health issues affecting some aspect of professional life; the rates ranged from a low of 6% for men of color to a high of 18% for white women, and there no significant differences as a function of group membership.

When considering the whole sample of *social sciences* faculty, white female faculty reported higher levels of childcare responsibility than did white male faculty in both 2006 and 2012, and the same difference emerged between female faculty of color and male faculty of color in both 2006 and 2012 (the latter was a trend). When examining the subsample of *social sciences* faculty who had a child under age 18 in the home, these same findings emerged. Among the *social sciences* faculty who had a child under age 18 in the home in 2012, most reported that child care responsibilities affected some aspect of their professional lives; rates ranged from a low of 85% for white men to a high of 97% for white women. The total number of aspects of professional life affected by childcare responsibilities did not differ as a function of gender/race-ethnicity when examining the subsample of faculty with at least one child under age 18 in the home.

In the *social sciences* in 2012, female faculty of color reported having more household responsibilities compared to male faculty of color. The percentage of *social science* faculty members reporting that caring for an ill, disabled, or aging person had impacted some aspect of their professional lives ranged from a low of 11% for men of color to a high of 29% for women of color; there were no differences between the groups with regard to the number of aspects of professional life affected by this responsibility. Lastly, rates were in the low to moderate range for reports of one's own health issues affecting some aspect of professional life, ranging from 11% for men of color to 25% for women of color; there no significant differences between groups.

When examining the whole sample of *arts and humanities* faculty in 2012, levels of reported childcare responsibility were higher for white women compared to white men. A very similar pattern of results was present for women of color compared to men of color, but low numbers resulted in a non-significant comparison. When assessing levels of reported childcare responsibility in the subsample of *arts and humanities* faculty with at least one child under age 18, the same results emerged. Among the *arts and humanities* faculty who had a child under age 18 in 2012, most reported that child care responsibilities

affected some aspect of their professional lives; rates ranged from a low of 75% for men of color to a high of 100% for women of color. The total number of aspects of professional life affected by childcare responsibilities did not differ as a function of group membership.

There were no differences among the four gender/race-ethnicity groups in the *arts and humanities* with regard to household responsibilities. However, in 2012, men of color were significantly more likely than white men to report that they had some level of responsibility for another adult's care. Rates were in the low to moderate range in the *arts and humanities* for reports of caring for an ill, disabled, or aging person having an impact on professional life, ranging from 13% for men of color to 45% for women of color. Female faculty of color reported more aspects of their professional lives being affected by such responsibilities compared to white women and men of color. Further, white female faculty reported more aspects of their work lives being affected by caring for an ill, disabled, or aging person compared to white male faculty. Finally, rates were in the low to moderate range for reports of one's own health issues affecting some aspect of professional life, ranging from 16% for white men to 35% for women of color; white women reported more impacts on professional life related to their own health compared to white men.

CROSS-DISCIPLINARY ANALYSES

Finally, 2012 data on family responsibilities were analyzed as a function of disciplinary group (science and engineering, social sciences, and arts and humanities). First, the three groups did not differ significantly with regard to mean levels of household responsibility (the range of means was very small, from a low of 2.00 to a high of 2.03). When only considering faculty members with at least one child under the age of 18, mean levels of childcare responsibility differed significantly between the social sciences faculty (3.07) and the science and engineering faculty (2.68); the arts and humanities faculty were in an intermediate position (2.88) and did not differ from either of the other two groups. Consistent with this – and again only considering those with a child under age 18 – faculty in the social sciences reported significantly more areas of their professional lives impacted by childcare issues (3.68) compared to faculty in science and engineering (3.17). Here again, the arts and humanities faculty were in an intermediate position (3.26) and did not differ from either of the other two groups.

The three disciplinary groups did not differ in terms of likelihood of: (a) being responsible for caring for another adult or (b) having some aspect of work life impacted by caring for a person who is ill, disabled, or aging. However, the faculty in science and engineering (13%) were significantly less likely to report that some aspect of their work lives was impacted their own health issues compared to faculty from the social sciences (18%) and the arts and humanities (18%).

SUMMARY OF FINDINGS (ORGANIZED BY DISCIPLINARY GROUP)

Below we provide a summary of the findings reported above. This is not a comprehensive recounting of all findings, but a highlighting of some key results. This section of the report is organized into three sections that summarize findings for each of the three disciplinary areas: science and engineering, social sciences, and arts and humanities. This approach to summarizing results allows for a focused reading of the key findings for each area.

SCIENCE AND ENGINEERING

In 2012, most assistant professors reported having at least one mentor, and rates for women increased from 2001 to 2012. In general, there were very few gender- and race-ethnicity-related differences with regard to mentoring.

In 2012, more than half of associate and full professors reported serving as mentors to other faculty. White men, white women, and men of color all reported engaging in more of a number of specific types of mentoring activities in 2012 compared to 2006; an increase over time for female associate and full professors of color may not have been detected due to low numbers of respondents in this group.

In general, faculty members rated the feedback received from department/unit leaders as more useful in 2012 compared to earlier time points. Women of color and white men provided more positive ratings of their department/unit leaders' articulation of criteria for tenure and promotion in 2012 compared to earlier time points. In both 2006 and 2012, white female faculty provided lower ratings of feedback utility compared to white male faculty. Also in 2012, white female faculty, compared to white men, provided lower ratings of department/unit leaders' articulation of criteria for promotion/tenure.

White men reported more perceived influence over faculty matters and educational matters in 2012 compared to 2001. By contrast, white women reported less felt influence over educational matters in 2012 compared to 2001 and less felt influence over resource allocation in 2012 compared to the two earlier data collection points. Women of color felt more influence over their units' climate as well as influence over resource allocations in 2012 compared to 2006. Finally, there was a trend for men of color to report less perceived influence over educational matters in 2012 compared to 2006.

White men felt more influence over faculty matters compared to men of color and over educational matters and department climate compared to both men of color and white women in 2012. In 2012, white male faculty also felt more influence over resource allocations compared to white female faculty, At all three data collection points, women of color felt less influence over faculty and educational matters compared to white women and men of color.

In 2012, faculty generally reported high levels of self-determination. However, women of color reported lower levels of self-determination compared to white women and men of color.

White men were more likely to report that they had been nominated for a research award in 2012 compared to earlier time points. By contrast, white women were more likely to report that their department failed to nominate them for an award for which they were qualified in 2012 compared earlier time points, and in 2012 they were more likely than white men to report that their department failed to nominate them for an award for which they were qualified. Female faculty of color were less likely to report that their departments had failed to nominate them for awards in 2012 compared to 2001; the opposite trend emerged for male faculty of color. In 2012 there was a trend for men of color to be more likely than white men and women of color to report their department's failure to nominate them for an award. However, there was also a trend for male faculty of color to be more likely than female faculty of color to be nominated for a service award in 2012.

In general, the faculty in science and engineering reported increased satisfaction with resources, research space, and office space over time, and average ratings of satisfaction in 2012 corresponded to 'somewhat satisfied' on the rating scale. In 2012, the mean level of satisfaction with regard to both university and external funding was between 'neutral' and 'somewhat satisfied.'

In 2012, the mean level of satisfaction with UM's assistance with partner employment was close to 'neutral' on the rating scale. Rates for seeking UM assistance with partner employment were moderate, and increased for white men and women of color from 2001 to 2012. Women of color were happier with this type of assistance in 2012 compared to 2001. In 2012, compared to 2006, men of color, white men, and white women all tended to be more likely to have considered leaving UM to improve their partners' careers.

Reported levels of child care responsibility increased significantly for women of color and decreased significantly for white men from 2006 to 2012. In both 2006 and 2012, both groups of female faculty reported higher levels of childcare responsibility compared to their male counterparts. The large majority of faculty members with at least one child under age 18 reported in 2012 that child care responsibilities affected some aspect of their professional lives. Women of color reported more aspects of professional life affected by childcare responsibilities than did men of color, and the same was true for white women compared to white men. Further, white men reported more aspects of professional life affected by childcare responsibilities than did men of color.

Levels of overall household responsibility were stable for each of the four gender/race-ethnicity groups over time. White female faculty members, compared to white males, reported higher levels of household responsibility in 2012. Also in 2012, white women were more likely than white men to report that they had sole responsibility for another adult's care. Further, women of color were more likely than white women to report that they had some amount of responsibility for another adult's care, and the same was true for men of color compared to white men.

SOCIAL SCIENCES

In 2012, most assistant professors reported having at least one mentor and more than half of associate and full professors reported serving as mentors to other faculty, with rates ranging from 54% for white male

faculty to 79% for white female faculty. White men, white women, and men of color all reported engaging in an increased number of specific mentoring activities in 2012 compared to 2006.

In 2012, the average rating of the usefulness of feedback from department/unit leaders fell between average and above average, and there were no differences in these ratings across the 2006 and 2012 time points. In both 2006 and 2012, white male faculty provided higher ratings of leaders' articulation of criteria for promotion/tenure than did white female faculty.

There was a trend for male faculty of color to feel less influence over faculty matters in 2012 compared to 2006. In 2012, white male faculty felt more influence over faculty matters, resource allocations, and department/unit climate compared to men of color and white women. Also in 2012, female faculty of color felt less influence over educational matters compared to men of color and white women.

In 2012, mean self-determination scores were generally high among the faculty groups. White men reported boundaries between personal and work life that were firmer than those reported by white women.

In 2012, white female faculty reported serving on a greater number of committees in a typical year compared to white men. In 2012 there was a trend for male faculty of color to be more likely than white male faculty to report feeling excluded from decision-making committees.

Few cross-time and cross-group differences emerged with regard to reception of and nomination for awards. However, in 2012 white women were less likely than white men to have been nominated for a service award.

In 2012, the faculty in the social sciences provided moderate ratings of satisfaction with resources. For all faculty in 2012, mean ratings of satisfaction with research and office space ranged from somewhat to very satisfied. In 2012, the level of satisfaction with external and university funding was in the moderate range. Women were more satisfied with their research and office space in 2012 compared to 2006. Also in 2012, the mean level of satisfaction with UM's assistance with partner employment was close to neutral on the rating scale, and rates of seeking UM assistance with partner employment were moderate (under 50% for all gender/race-ethnicity groups). Female faculty of color were less likely to have sought this type of assistance in 2012 compared to 2006. In 2012, compared to 2006, women of color, white men, and white women were all more likely to have considered leaving UM to improve their partners' careers.

Reported levels of child care and household responsibility did not differ over time (comparing 2006 with 2012) for any of the four gender/race-ethnicity groups. White female faculty reported higher levels of childcare responsibility than did white male faculty in both 2006 and 2012, and the same difference emerged between female faculty of color and male faculty of color in both 2006 and 2012. Among the social sciences faculty who had a child under age 18 in the home in 2012, the large majority reported that child care responsibilities affected some aspect of their professional lives. In 2012, female faculty of color reported having more household responsibilities compared to male faculty of color.

ARTS AND HUMANITIES

In 2012, over half of assistant professors - taken as a whole due to low numbers in some groups - reported having at least one mentor; the only group that was clearly under 50% was white male faculty. There were no differences in rates of receiving mentoring across the four gender/race-ethnicity groups. In 2012, less than half of associate and full professors reported serving as mentors to other faculty. The four gender/race-ethnicity groups were largely similar in terms of their levels of engagement in different facets of mentoring (e.g., advising about publishing, serving as a role model, etc.).

In 2012, the average rating of the usefulness of feedback from department/unit leaders fell between 'average' and 'above average,' and the same was true of ratings of department/unit leaders' articulation of criteria for tenure and promotion. White male faculty provided higher ratings of leaders' articulation of criteria for promotion/tenure compared to white female faculty.

In 2012, women of color felt less influence over faculty matters and educational matters compared to white women and men of color.

In 2012, faculty felt somewhat satisfied with their teaching load; white female faculty reported less satisfaction with teaching load compared to white male faculty. Also in 2012, there was a trend for white full professors to be more likely than full professors of color to report having been asked to serve as department/unit chair or director.

In 2012 there was a trend for female faculty of color to be more likely than white women to report that their department failed to nominate them for a deserved award.

In 2012, the faculty in the arts and humanities provided mean ratings of satisfaction with both resources and research and office space that fell in the 'somewhat satisfied' area of the rating scale. Across all groups the mean level of satisfaction with external and university funding was moderate. Also in 2012, the mean level of satisfaction with UM's assistance with partner employment fell between the 'somewhat dissatisfied' and neutral points on the rating scale. In 2012, rates for seeking UM assistance with partner employment ranged from a low of 39% for men of color to a high of 56% for women of color; this difference between men and women of color trended toward statistical significance.

In 2012, levels of reported childcare responsibility were higher for white women compared to white men (a very similar pattern of results was present for women of color compared to men of color, but low numbers resulted in a non-significant comparison). Among the arts and humanities faculty who had a child under age 18 in 2012, a large majority reported that child care responsibilities affected some aspect of their professional lives. In 2012, men of color were significantly more likely than white men to report that they had some level of responsibility for another adult's care. White female faculty in 2012 reported more aspects of their work lives being affected by caring for an ill, disabled, or aging person compared to white male faculty. Finally, white women reported more impacts on their professional lives related to their own health issues compared to white men.

CONCLUSIONS

This report presents data on faculty career- and retention-relevant experiences that extend across three broad disciplinary groups (science and engineering, the social sciences, and the arts and humanities). The data presented above represent measurements at multiple time points for science and engineering (2001, 2006, and 2012) and for the social sciences (2006 and 2012). The arts and humanities group was incorporated into the survey process for the first time in 2012.

Our analyses of differences over time revealed many positive differences across data collection points for the two groups that were surveyed more than once. Examples of these types of differences are:

- Female assistant professors in science and engineering were more likely to have mentors in 2012 compared to earlier time points, and were receiving greater amounts of certain types of mentoring (e.g., mentors helping with career networking and tenure-related advancement) in 2012 compared to 2001.
- Many associate and full professors in the social sciences and science and engineering were engaged in more types of mentoring activities in 2012 compared to earlier time points.
- All four gender/race-ethnicity faculty groups in science and engineering reported higher overall satisfaction with resources in 2012 compared to 2001.
- Female faculty in the social sciences reported higher overall satisfaction with resources in 2012 compared to 2006.
- All groups of science and engineering faculty were more satisfied with their work spaces in 2012 compared to 2001, and there was a similar difference for women in the social sciences when comparing 2012 to 2006.

We note that there also many places where problematic differences between gender/race-ethnicity groups from previous years no longer existed in 2012. For example, in science and engineering, white men reported higher overall satisfaction with resources compared to men of color in 2001, but not in 2012. Positive differences over time – and the disappearance of negative difference over time – are encouraging, and care should be taken when possible taken to ensure that these types of differences are maintained as departments and units continue to grow and evolve.

Despite the many positive differences over time, there were also areas in which there were negative differences across data collection time points. For example:

- White women and men of color in the social sciences and science and engineering reported feeling less departmental influence in certain areas in 2012 compared to earlier time points.
- White women and men of color in science and engineering were more likely to report that their department failed to nominate them for an award for which they were qualified in 2012 compared to earlier time points.

There were also some differences between the gender/race-ethnicity (and between disciplinary groups) in 2012 that are worthy of note. Some examples are provided here:

- Assistant professors in the arts and humanities were less likely to have a mentor compared to their peers in the social sciences and in science and engineering.

- Related to the above point, associate and full professors in the arts and humanities were less likely to serve as mentors compared to associate and full professors in the other two disciplinary areas.
- In all three disciplinary groups, white female faculty provided lower ratings of leaders' articulation of criteria for promotion/tenure than did white male faculty.
- White men in science and engineering reported feeling more impact in their work lives compared to the other gender/race-ethnicity groups, and white men in the social sciences reported feeling more impact compared to white women.
- In science and engineering there was a trend for men of color to be more likely than white men to report their department's failure to nominate them for an award. Further, there was a trend for male faculty of color to be less likely than white men to report being nominated for a teaching award.
- In the arts and humanities there were was a trend for women of color to be more likely than white women to report that their department failed to nominate them for an award for which they were qualified.

Taken together, these findings paint a picture of a faculty that is, in general, feeling more and more satisfied with career- and retention-relevant issues over time. The findings also identify places where UM leadership can direct renewed attention to issues that may impact the faculty members' experiences with overall job satisfaction[11].

[11] We note that the ADVANCE program is also issuing a companion piece to this report that explores associations between job satisfaction and many of the variables analyzed here. This report can be accessed on the ADVANCE program website.

APPENDIX: OVERVIEW OF SAMPLE

By area and gender, the following met the criteria for receiving a survey in 2012 (response rates are included as well):

- 432 female tenure-track faculty members in science and engineering[12]; 40% responded (n=174)
- 1,307 male tenure-track faculty members in science and engineering; 35% responded (n=452)
- 316 female tenure-track faculty members in social sciences; 37% responded (n=117)
- 455 male tenure-track faculty members in social sciences; 33% responded (n=148)
- 157 female tenure-track faculty members in arts and humanities; 56% responded (n=88)
- 251 male tenure-track faculty members in arts and humanities; 42% responded (n=106)

By area and race-ethnicity, the following met the criteria for receiving a survey in 2012 (response rates are included as well):

- 440 tenure-track faculty members of color (African Americans, Latinos, Native Americans, and Asians and Asian Americans) in science and engineering; 28% responded (n=125)
- 1299 white tenure-track faculty in science and engineering; 39% responded (n=501)
- 207 tenure-track faculty members of color in social sciences; 26% responded (n=54)
- 564 white tenure-track faculty members in social sciences; 37% responded (n=211)
- 80 tenure-track faculty members of color in arts and humanities; 44% responded (n=35)
- 328 white tenure-track faculty members in arts and humanities; 48% responded (n=159)

In sum, the total number of respondents for the 2012 survey was 1,085 (626 science and engineering faculty; 265 social sciences faculty; 194 arts and humanities faculty).

The sample at Time 2 (2006) included:

- 121 female tenure-track faculty in science and engineering
- 141 male tenure-track faculty in science and engineering
- 55 tenure-track faculty of color in science and engineering
- 71 female tenure-track faculty in social science
- 72 male tenure-track faculty in social science
- 33 tenure-track faculty of color in social science
- (Arts and humanities faculty were not surveyed in 2006)

The faculty surveyed at Time 1 (2001) included:

- 135 female tenure-track science and engineering faculty
- 100 male tenure-track science and engineering faculty
- 42 tenure-track faculty of color in science and engineering
- (Social science and arts and humanities faculty were not surveyed in 2001)

[12] This included faculty from the three largest schools with science and engineering faculty (Engineering, LSA, and Medicine) as well as seven smaller schools (Dentistry, Information, Kinesiology, Natural Resources and Environment, Nursing, Pharmacy, and Public Health).

Table 1 - Received Mentoring: Weighted Means and Percentages by Race-Ethnicity-Gender Groups within Discipline for Assistant Professors

	Men of Color Science & Engineering			White Men Science & Engineering			Men of Color Social Sciences		White Men Social Sciences		Men of Color Arts & Humanities	White Men Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=10	n=8	n=32	n=19	n=11	n=43	n=3	n=10	n=12	n=13	n=1	n=4
My mentor/career advisor…	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
serves as a role model	2.81	2.58	2.54	2.12	2.36	2.65	2.00	2.70	2.47	2.37	*low n*	2.53
promotes my career through networking	2.46	2.34	2.25	1.75	1.82	2.12	2.00	2.50	2.00	1.86	*low n*	1.23
advises about preparation for advancement (e.g., promotion, leadership positions)	2.46	2.43	2.32	2.12	1.89	2.36	2.67	2.80	2.41	2.60	*low n*	2.16
advises about getting my work published	2.17	2.49	2.11	1.97	1.77	2.16	2.33	2.40	2.00	2.57	*low n*	1.23
advises about department politics	2.34	2.49	1.99	1.97	2.09	2.26	2.33	2.20	2.23	1.92	*low n*	1.77
advises about obtaining the resources I need	2.64	2.54	2.22	1.99	2.12	2.21	2.00	2.30	1.79	1.83	*low n*	1.23
advocates for me	2.79	2.45	2.38	2.24	2.10	2.58	2.67	2.70	2.51	2.34	*low n*	2.00
advises about balancing work and family	1.80	2.14	1.79	1.16	1.55	1.70	2.00	2.10	1.34	1.60	*low n*	1.23
	%	%	%	%	%	%	%	%	%	%	%	%
Do you have a mentor?*	100%	75%	82%	84%	63%	70%	60%	100%	83%	65%	100%	40%

	Women of Color Science & Engineering			White Women Science & Engineering			Women of Color Social Sciences		White Women Social Sciences		Women of Color Arts & Humanities	White Women Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=7	n=7	n=11	n=30	n=28	n=35	n=7	n=4	n=13	n=14	n=3	n=10
My mentor/career advisor…	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
serves as a role model	1.83	2.35	2.85	1.72	2.25	2.55	2.40	2.46	2.70	2.63	2.67	2.70
promotes my career through networking	1.42	2.21	2.30	1.62	2.16	2.35	1.84	1.96	2.30	2.12	1.67	2.19
advises about preparation for advancement (e.g., promotion, leadership positions)	1.91	2.35	2.58	1.91	2.55	2.56	2.00	2.19	2.83	2.67	2.00	2.70
advises about getting my work published	1.86	2.17	2.21	1.73	2.03	2.34	1.58	1.96	2.43	2.44	2.33	2.30
advises about department politics	1.27	1.89	2.17	1.74	2.06	2.12	1.16	2.00	2.35	2.83	2.00	2.01
advises about obtaining the resources I need	1.77	1.97	2.41	1.79	2.06	2.34	1.58	1.96	2.49	2.41	1.67	2.11
advocates for me	1.66	2.11	2.60	1.89	2.28	2.40	1.84	2.19	2.67	2.74	2.67	2.60
advises about balancing work and family	2.30	1.38	1.72	1.38	1.63	1.69	1.39	1.73	1.97	1.66	1.67	1.40
	%	%	%	%	%	%	%	%	%	%	%	%
Do you have a mentor?*	44%	88%	92%	62%	74%	85%	89%	100%	93%	79%	60%	67%

Notes: Numbers of respondents vary slightly by item; reported Ns are maximum numbers for that group for items in table. *For rates of having a mentor, very small numbers of asst. profs. In Arts and Humanities responded.

Table 2 - Provided Mentoring: Weighted Percentages by Race-Ethnicity-Gender Groups within Discipline for Associate and Full Professors

	Men of Color Science & Engineering			White Men Science & Engineering			Men of Color Social Sciences		White Men Social Sciences		Men of Color Arts & Humanities	White Men Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=	n=11	n=36	n=	n=62	n=229	n=7	n=11	n=33	n=49	n=6	n=32
As a mentor I…	%	%	%	%	%	%	%	%	%	%	%	%
serve as a role model for my mentees		91%	97%		74%	99%	86%	100%	70%	100%	100%	100%
promote my mentees' careers through networking		82%	94%		73%	94%	71%	100%	52%	88%	100%	69%
advise about preparation for advancement (e.g. promotion/tenure, leadership positions)		91%	100%		92%	98%	86%	100%	85%	98%	100%	97%
advise about getting my mentees' work published		73%	94%		81%	94%	71%	100%	88%	100%	100%	77%
advise about department/unit politics		46%	81%		84%	87%	43%	91%	82%	92%	100%	88%
advise about obtaining the resources my mentees need		91%	97%		69%	97%	29%	100%	59%	94%	100%	87%
advocate for my mentees		91%	97%		82%	97%	29%	100%	61%	100%	100%	97%
advise about balancing work and family		30%	78%		47%	75%	57%	82%	42%	67%	67%	81%
	%	%	%	%	%	%	%	%	%	%	%	%
Do you serve as a mentor/career advisor to another faculty member?			69%			77%		61%		54%	43%	41%

	Women of Color Science & Engineering			White Women Science & Engineering			Women of Color Social Sciences		White Women Social Sciences		Women of Color Arts & Humanities	White Women Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=	n=14	n=13	n=	n=56	n=69	n=7	n=13	n=31	n=58	n=7	n=24
As a mentor I…	%	%	%	%	%	%	%	%	%	%	%	%
serve as a role model for my mentees		93%	100%		80%	100%	71%	100%	94%	96%	100%	92%
promote my mentees' careers through networking		62%	100%		59%	96%	71%	77%	87%	90%	86%	92%
advise about preparation for advancement (e.g. promotion/tenure, leadership positions)		69%	100%		91%	100%	100%	100%	87%	98%	100%	100%
advise about getting my mentees' work published		100%	100%		71%	91%	100%	85%	74%	93%	100%	92%
advise about department/unit politics		57%	85%		83%	93%	86%	92%	81%	93%	86%	88%
advise about obtaining the resources my mentees need		69%	100%		73%	99%	71%	85%	74%	91%	86%	96%
advocate for my mentees		93%	100%		79%	100%	86%	92%	87%	100%	100%	96%
advise about balancing work and family		43%	69%		59%	81%	71%	85%	58%	74%	86%	83%
	%	%	%	%	%	%	%	%	%	%	%	%
Do you serve as a mentor/career advisor to another faculty member?			52%			74%		65%		80%	44%	45%

Notes: Numbers of respondents vary slightly by item; reported Ns are largest numbers of assistant and associate professors in each group who answered questions about specific mentoring activities.

Table 3 - Feedback from Chair/Executive Leader: Weighted Means by Race-Ethnicity-Gender Groups within Discipline

	Men of Color Science & Engineering			White Men Science & Engineering			Men of Color Social Sciences		White Men Social Sciences		Men of Color Arts & Humanities	White Men Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=24	n=29	n=87	n=68	n=106	n=256	n=13	n=27	n=56	n=107	n=14	n=84
My chair/executive leader…	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
gives me useful feedback about my performance	3.56	3.18	3.59	2.92	3.25	3.44	3.63	3.35	3.31	2.29	3.24	3.24
articulates clear criteria for promotion and tenure	3.49	3.49	3.74	3.23	3.56	3.77	3.78	3.64	4.02	3.76	3.58	3.79

	Women of Color Science & Engineering			White Women Science & Engineering			Women of Color Social Sciences		White Women Social Sciences		Women of Color Arts & Humanities	White Women Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=17	n=26	n=35	n=97	n=88	n=131	n=19	n=24	n=48	n=84	n=20	n=63
My chair/executive leader…	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
gives me useful feedback about my performance	2.86	2.31	3.57	2.96	3.00	3.27	3.37	2.98	3.04	3.08	3.24	2.98
articulates clear criteria for promotion and tenure	2.67	2.70	3.57	3.28	3.30	3.51	3.73	3.40	3.44	3.37	3.50	3.42

Notes: Numbers of respondents vary slightly by item; reported Ns are maximum numbers for that group for items in table.

Table 4 - Influence, Self-Determination, Growth, and Boundaries: Weighted Means by Race-Ethnicity-Gender Groups within Discipline

	Men of Color Science & Engineering			White Men Science & Engineering			Men of Color Social Sciences		White Men Social Sciences		Men of Color Arts & Humanities	White Men Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=24	n=29	n=90	n=73	n=107	n=361	n=13	n=27	n=57	n=114	n=15	n=91
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Felt influence over faculty matters	2.38	2.35	2.28	2.44	2.60	2.75	2.66	2.30	2.83	2.98	2.66	2.94
Felt influence over educational matters	3.40	3.26	2.97	2.97	3.18	3.27	3.01	3.02	3.07	3.14	2.92	3.25
Felt influence over resource allocations	2.27	2.25	2.30	2.39	2.35	2.44	2.53	2.16	2.58	2.55	2.02	2.55
Felt influence over unit's climate/culture	2.83	2.70	2.54	2.94	2.96	3.03	2.65	2.57	3.03	3.18	2.64	2.96
Self-determination			4.57			4.41		4.55		4.60	4.20	4.44
Impact			2.66			2.99		2.93		3.10	2.63	2.88
Growth/Learning			4.42			4.47		4.63		4.56	4.34	4.55
Boundary management*			1.46			1.62		1.47		1.63	1.58	1.56

	Women of Color Science & Engineering			White Women Science & Engineering			Women of Color Social Sciences		White Women Social Sciences		Women of Color Arts & Humanities	White Women Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=17	n=24	n=36	n=104	n=93	n=137	n=19	n=24	n=51	n=90	n=20	n=67
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Felt influence over faculty matters	1.51	1.83	2.04	2.59	2.56	2.43	2.60	2.29	2.56	2.64	2.12	2.70
Felt influence over educational matters	2.02	2.38	2.60	3.29	3.08	2.89	2.81	2.56	3.05	3.07	2.21	2.90
Felt influence over resource allocations	2.11	1.66	2.20	2.38	2.26	1.94	2.16	2.08	2.05	2.26	2.09	2.39
Felt influence over unit's climate/culture	2.09	1.94	2.49	2.79	2.61	2.61	2.39	2.41	2.33	2.73	2.47	2.70
Self-determination			4.10			4.37		4.71		4.53	3.96	4.13
Impact			2.54			2.46		2.49		2.70	2.16	2.60
Growth/Learning			4.58			4.47		4.73		4.62	4.48	4.57
Boundary management*			1.38			1.50		1.40		1.43	1.42	1.36

Note: Numbers of respondents vary slightly by item; reported Ns are maximum numbers for that group for items in table. *Boundary management scores ranged from 1-5, with higher scores representing firmer boundaries between work life and personal life.

Table 5 - Teaching and Advising: Weighted Means by Race-Ethnicity-Gender Groups within Discipline

	Men of Color Science & Engineering			White Men Science & Engineering			Men of Color Social Sciences		White Men Social Sciences		Men of Color Arts & Humanities	White Men Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=21	n=24	n=88	n=66	n=70	n=360	n=13	n=27	n=51	n=113	n=15	n=91
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Number of formal courses			2.64			2.74		3.25		3.36	3.31	3.56
Satisfaction with teaching load			3.94			4.05		3.86		3.74	4.03	4.11
Teaching Responsibilities												
One-on-one instruction			2.44			2.47		2.04		2.05	1.97	2.22
Seminar courses			1.70			1.67		2.10		2.26	2.03	2.24
Formal lecture courses			2.33			2.30		2.57		2.61	2.44	2.15
Occassional lectures in large courses			1.85			1.83		1.79		1.66	1.50	1.68
Modeling correct professional behavior			1.96			2.31		2.11		2.12	2.41	2.29
Advising												
Number of undergraduate advisees	0.35	1.97	2.81	2.25	2.33	4.21	2.86	3.83	3.08	2.45	4.96	8.77
Number of graduate students	2.59	2.81	3.71	2.04	3.10	3.60	4.55	6.97	6.38	6.33	2.86	4.21

	Women of Color Science & Engineering			White Women Science & Engineering			Women of Color Social Sciences		White Women Social Sciences		Women of Color Arts & Humanities	White Women Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=12	n=17	n=36	n=94	n=65	n=134	n=16	n=24	n=43	n=89	n=20	n=67
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Number of formal courses			2.79			2.90		3.24		3.28	3.99	3.66
Satisfaction with teaching load			4.02			3.98		3.79		3.64	3.79	3.69
Teaching Responsibilities												
One-on-one instruction			2.60			2.55		2.01		2.16	2.00	2.16
Seminar courses			1.75			1.75		2.11		2.27	2.34	2.33
Formal lecture courses			2.32			2.25		2.65		2.24	2.71	2.04
Occassional lectures in large courses			1.73			1.68		1.76		1.65	1.90	1.50
Modeling correct professional behavior			2.10			2.36		2.21		2.39	1.95	2.29
Advising												
Number of undergraduate advisees	2.79	1.65	4.19	1.92	6.33	5.48	5.44	3.97	5.13	6.18	4.72	8.63
Number of graduate students	0.91	2.76	2.53	2.02	2.87	3.52	6.03	6.78	4.12	7.21	3.39	3.92

Notes: Numbers of respondents vary slightly by item; reported Ns are maximum numbers for that group for items in table.

Table 6 - Service: Weighted Means and Percentages by Race-Ethnicity-Gender Groups within Discipline

	Men of Color Science & Engineering			White Men Science & Engineering			Men of Color Social Sciences		White Men Social Sciences		Men of Color Arts & Humanities	White Men Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=24	n=29	n=90	n=71	n=112	n=361	n=13	n=28	n=57	n=114	n=15	n=91
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Number of committees served on in typical year	3.20	2.69	2.85	3.21	3.61	3.76	3.21	2.82	3.57	3.09	3.17	3.40
Number of committees chaired in typical year	0.72	0.87	0.55	0.72	1.37	0.88	0.68	0.45	1.19	0.76	0.92	0.75
	%	%	%	%	%	%	%	%	%	%	%	%
Ever asked to serve as organization/program leader (full profs only)	70%	33%	63%	70%	61%	72%	67%	82%	75%	70%	43%	70%
Ever served as organization/program leader (full profs only)	75%	38%	65%	68%	59%	69%	*	82%	69%	68%	50%	73%
Excluded from decision-making committees		38%	24%		27%	21%	8%	26%	16%	13%	27%	26%

	Women of Color Science & Engineering			White Women Science & Engineering			Women of Color Social Sciences		White Women Social Sciences		Women of Color Arts & Humanities	White Women Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=17	n=26	n=36	n=100	n=93	n=133	n=17	n=24	n=51	n=90	n=20	n=68
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Number of committees served on in typical year	3.16	2.22	3.09	4.06	3.52	3.70	3.45	3.62	3.25	3.64	3.30	3.75
Number of committees chaired in typical year	0.68	0.34	0.43	0.82	0.91	0.72	0.86	0.81	0.89	0.87	0.70	0.89
	%	%	%	%	%	%	%	%	%	%	%	%
Ever asked to serve as organization/program leader (full profs only)	*	56%	44%	63%	58%	69%	67%	50%	67%	80%	50%	72%
Ever served as organization/program leader (full profs only)	*	44%	50%	64%	49%	62%	*	50%	58%	71%	40%	68%
Excluded from decision-making committees		46%	29%		33%	24%	24%	25%	26%	17%	15%	31%

Notes: Numbers of respondents vary slightly by item; reported Ns are maximum numbers for that group for items in table. *There are fewer than three respodents in this cell, thus no statistics are reported here.

Table 7 - Recognition: Weighted Percentages by Race-Ethnicity-Gender Groups within Discipline

	Men of Color Science & Engineering			White Men Science & Engineering			Men of Color Social Sciences		White Men Social Sciences		Men of Color Arts & Humanities	White Men Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=22	n=29	n=90	n=71	n=112	n=359	n=13	n=27	n=57	n=116	n=16	n=90
	%	%	%	%	%	%	%	%	%	%	%	%
Department failed to nominate for qualified award	27%	17%	16%	42%	20%	15%	0%	15%	11%	20%	19%	19%
Ever nominated for research award	33%	30%	39%	30%	38%	48%	17%	30%	28%	37%	23%	30%
Ever nominated for teaching award	41%	28%	23%	41%	38%	41%	23%	30%	33%	30%	20%	39%
Ever nominated for service award	21%	11%	19%	12%	16%	26%	17%	12%	6%	8%	15%	11%

	Women of Color Science & Engineering			White Women Science & Engineering			Women of Color Social Sciences		White Women Social Sciences		Women of Color Arts & Humanities	White Women Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=18	n=26	n=36	n=99	n=91	n=137	n=18	n=24	n=50	n=89	n=20	n=68
	%	%	%	%	%	%	%	%	%	%	%	%
Department failed to nominate for qualified award	50%	32%	8%	34%	14%	26%	11%	8%	20%	17%	5%	27%
Ever nominated for research award	0%	23%	35%	32%	30%	28%	0%	21%	29%	39%	15%	33%
Ever nominated for teaching award	0%	12%	16%	30%	25%	30%	18%	17%	33%	34%	25%	29%
Ever nominated for service award	17%	8%	3%	14%	13%	15%	31%	17%	10%	18%	15%	14%

Notes: Numbers of respondents vary slightly by item; reported Ns are maximum numbers for that group for items in table.

Table 8 - Satisfaction with Resources: Weighted Means and Percentages by Race-Ethnicity-Gender Groups within Discipline

	Men of Color Science & Engineering			White Men Science & Engineering			Men of Color Social Sciences		White Men Social Sciences		Men of Color Arts & Humanities	White Men Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=24	n=29	n=90	n=72	n=110	n=360	n=13	n=27	n=56	n=115	n=15	n=91
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Overall satisfaction with resources	3.08	3.98	3.96	3.77	3.96	4.07	3.72	4.05	4.02	4.27	3.95	3.86
Satisfaction with location	3.02	4.27	4.05	3.78	4.00	4.22	3.77	4.20	4.26	4.32	3.86	3.87
Satisfaction with computing	3.55	3.83	3.87	3.85	3.96	4.05	3.62	4.36	3.89	4.34	3.93	4.32
Satisfaction with safety		4.23	4.40		4.00	4.48	4.86	4.55	4.31	4.64	4.24	4.14
Satisfaction with maintenance		3.56	3.27		3.31	3.45	2.79	3.73	3.25	3.75	3.28	3.38
Satisfaction with external funding			3.72			3.69		3.58		3.96	3.79	3.16
Satisfaction with university funding			3.65			3.64		4.21		4.13	3.83	4.06
My chair helps me obtain the resources I need	3.32	3.18	3.67	3.22	3.27	3.55	3.63	3.53	3.71	3.50	3.24	3.57
	%	%	%	%	%	%	%	%	%	%	%	%
Considered leaving to improve partner's career*	40%	15%	37%	31%	13%	32%	0%	46%	2%	42%	50%	56%
Sought employment help for partner*	29%	35%	38%	17%	26%	27%	50%	41%	49%	32%	39%	43%
Satisfaction with employment help for partner (mean)*	2.38	3.86	3.04	2.72	3.02	2.78	2.83	2.50	2.60	3.03	3.09	2.51

	Women of Color Science & Engineering			White Women Science & Engineering			Women of Color Social Sciences		White Women Social Sciences		Women of Color Arts & Humanities	White Women Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=17	n=26	n=36	n=101	n=94	n=135	n=19	n=24	n=51	n=90	n=20	n=67
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Overall satisfaction with resources	3.15	3.82	4.12	3.54	3.86	4.01	3.58	4.42	3.58	4.10	3.95	3.66
Satisfaction with location	3.16	3.81	4.31	3.61	3.94	4.19	3.78	4.54	3.75	4.25	4.19	3.89
Satisfaction with computing	3.46	3.73	4.06	3.53	3.80	3.84	3.77	4.39	3.37	4.02	4.43	3.89
Satisfaction with safety		3.62	4.58		4.22	4.40	3.89	4.49	3.48	4.58	3.95	4.05
Satisfaction with maintenance		3.00	3.58		3.08	3.34	3.94	3.44	3.03	3.69	3.17	2.90
Satisfaction with external funding			3.83			3.68		3.51		3.68	3.29	3.12
Satisfaction with university funding			3.75			3.60		4.05		4.20	4.29	3.77
My chair helps me obtain the resources I need	2.81	2.36	3.61	2.98	3.32	3.33	3.21	3.43	3.41	3.31	3.24	3.47
	%	%	%	%	%	%	%	%	%	%	%	%
Considered leaving to improve partner's career*	53%	0%	57%	51%	17%	48%	6%	67%	8%	41%	53%	58%
Sought employment help for partner*	19%	29%	50%	32%	28%	37%	60%	29%	49%	33%	56%	40%
Satisfaction with employment help for partner (mean)*	1.75	2.80	3.66	2.57	2.93	2.76	3.83	3.75	3.13	3.11	2.73	2.36

Notes: Numbers of respondents vary slightly by item; reported Ns are maximum numbers for that group for items in table. *Respondents included for asterisked questions were subset who viewed questions as applicable.

Table 9 - Household: Weighted Means and Percentages by Race-Ethnicity-Gender Groups within Discipline

	Men of Color Science & Engineering			White Men Science & Engineering			Men of Color Social Sciences		White Men Social Sciences		Men of Color Arts & Humanities	White Men Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=24	n=29	n=90	n=74	n=112	n=363	n=13	n=28	n=57	n=116	n=15	n=91
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Household responsibility	2.00	2.30	2.12	1.93	1.97	1.92	2.37	2.03	1.99	1.97	2.04	1.97
Level of childcare responsibility		2.16	2.28		2.56	2.29	2.90	2.75	2.53	2.64	2.65	2.60
	%	%	%	%	%	%	%	%	%	%	%	%
Single with children	4%	0%	1%	1%	4%	3%	0%	4%	2%	4%	0%	1%
Partner, no children	8%	14%	6%	10%	13%	7%	15%	19%	21%	12%	7%	11%
Partner and children	67%	86%	83%	82%	78%	82%	69%	68%	65%	79%	67%	71%
Single, no children	4%	0%	3%	3%	5%	4%	8%	7%	7%	1%	7%	6%
Responsible for caring for another adult			16%			11%		8%		12%	25%	6%
Sole responsibility for caring for another adult (% of those who said they care for other adult)			23%			22%		0%		23%	0%	0%
Any aspect of professional life affected by childcare*			82%			88%		87%		85%	75%	87%
Any aspect of professional life affected by caring for ill, disabled, or aging person			13%			20%		11%		16%	13%	14%
Any aspect of professional life affected by own health			6%			16%		11%		17%	20%	16%
Partner employed full-time	33%	59%	49%	41%	47%	37%	62%	54%	51%	50%	50%	43%
	n=7	n=13	n=44	n=21	n=42	n=107	n=6	n=9	n=26	n=43	n=7	n=28
Partner is UM faculty (vs.other employment at UM)	43%	46%	50%	52%	43%	52%	67%	56%	69%	61%	71%	68%

	Women of Color Science & Engineering			White Women Science & Engineering			Women of Color Social Sciences		White Women Social Sciences		Women of Color Arts & Humanities	White Women Arts & Humanities
	2001	2006	2012	2001	2006	2012	2006	2012	2006	2012	2012	2012
	n=19	n=26	n=36	n=104	n=95	n=137	n=19	n=24	n=51	n=91	n=20	n=68
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Household responsibility	2.40	2.43	2.27	2.18	2.24	2.23	2.48	2.40	2.26	2.02	1.88	1.98
Level of childcare responsibility		3.13	3.64		3.68	3.74	3.67	3.30	3.40	3.48	3.44	3.52
	%	%	%	%	%	%	%	%	%	%	%	%
Single with children	6%	12%	0%	7%	5%	7%	11%	17%	6%	11%	15%	16%
Partner, no children	16%	4%	8%	13%	14%	10%	16%	8%	12%	10%	25%	18%
Partner and children	67%	77%	78%	62%	71%	69%	63%	58%	71%	58%	30%	43%
Single, no children	0%	4%	11%	13%	10%	8%	5%	4%	4%	9%	20%	10%
Responsible for caring for another adult			27%			8%		19%		18%	22%	14%
Sole responsibility for caring for another adult (% of those who said they care for other adult)			0%			55%		25%		47%	75%	11%
Any aspect of professional life affected by childcare*			95%			97%		87%		97%	100%	86%
Any aspect of professional life affected by caring for ill, disabled, or aging person			31%			20%		29%		25%	45%	29%
Any aspect of professional life affected by own health			11%			18%		25%		23%	35%	25%
Partner employed full-time	79%	85%	81%	64%	71%	67%	68%	58%	57%	52%	40%	43%
	n=8	n=17	n=19	n=39	n=43	n=56	n=12	n=10	n=24	n=27	n=8	n=21
Partner is UM faculty (vs.other employment at UM)	63%	71%	84%	80%	77%	73%	100%	100%	71%	67%	38%	86%

Notes: Numbers of respondents vary slightly by item; reported Ns are maximum numbers for that group for items in table. *This variable was examined only for those faculty in 2012 with at least one child under age 18.