ASSESSING THE WORK ENVIRONMENT FOR CLINICAL-TRACK FACULTY AT THE UNIVERSITY OF MICHIGAN MEDICAL SCHOOL IN 2012:

GENDER AND RACE AS FACTORS IN SCHOOL CLIMATE AND CAREER EXPERIENCES

UM ADVANCE Program

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INTRODUCTION

This report is part of a series of reports derived from the fall 2012 study of the academic climate on the University of Michigan campus. This report focuses exclusively on clinical-track faculty at the UM Medical School[1]. The two main areas of focus for this report are: (1) an examination of potential gender and race-ethnicity differences in experiences of the work climate at the Medical School, and (2) an examination of potential gender and race-ethnicity differences in career experiences at the Medical School generally thought to be related to faculty career satisfaction and retention (e.g., opportunities for leadership and influence, service experiences, the allocation of resources, recognition for work, family responsibilities, etc.). In a final section, relationships between overall job satisfaction and the climate- and career-related variables are explored.

For detailed information about the larger study and the data collection procedures, please refer to the first two reports that stemmed from the fall 2012 study of the academic climate at UM[2].

SAMPLE CHARACTERISTICS

Although clinical-track faculty at the UM Medical School were surveyed at two earlier time points (2001 and 2006), the focus of this report is on 2012 data only[3]. Below we include information about the response rates to the survey and the resulting sample.

POPULATION SURVEYED FOR CURRENT REPORT

In 2012, the following faculty were surveyed:

- All female clinical-track Medical School faculty at or above the rank of assistant professor in 2012 (N = 365).
- All male clinical-track Medical School faculty at or above the rank of assistant professor in 2012 (N = 401).
- Clinical-track Medical School faculty of color at or above the rank of assistant professor in 2012 (N = 187; this included people identifying as African American, Latino, Native American, and Asian/Asian-American).

RESPONSE RATES AND FINAL SAMPLE

Faculty were asked to report on their gender and race-ethnicity, and the vast majority did so. However, two respondents reported gender but not race-ethnicity. The sample sizes varied slightly for the analyses presented in this report due to this missing race-ethnicity information and also, in some cases, due to other questions being skipped by small numbers of respondents.

[1] This report focuses on clinical-track faculty in the Medical School because other reports from the 2012 faculty-wide survey focus on other groups on the UM campus, such as tenure-track and research-track faculty.

[2] http://sitemaker.umich.edu/advance/campus-wide_climate_for_faculty

[3] The 2001 data set included a very small number of faculty of color (< 5), making analyses of race-ethnicity impossible. The 2006 data collection process yielded a very low response rate (11%) for UM Medical School clinical-track faculty, making reporting on those data problematic.

The final sample used for the analyses in this report included:

- 145 female clinical-track Medical School faculty (a 40% response rate)
- 149 male clinical-track Medical School faculty (a 37% response rate)
- 51 clinical-track Medical School faculty of color (a 27% response rate)

The response rate of faculty of color was lower than the response rate for white faculty. To address this issue, all analyses reported below were conducted using appropriate weights. Weighting the data on the basis of race-ethnicity prior to conducting analyses allowed us to adjust the sample survey data to make them more representative of the population from which they were drawn.

Compared to female respondents, the male respondents were older, had received their highest degrees longer ago, and were less likely to be at the rank of assistant professor. Given these gender differences, a composite variable was created that captured respondents' age, years at UM, year of degree, and rank. This measure-of-experience variable was used as a control variable in all analyses. This approach to controlling for experience means that any significant gender- and race-ethnicity-related findings reported below cannot be explained by differences in age, years at UM, year of degree, or rank.

Other Considerations

We note that majority group members (e.g., whites vis a vis race) tend to view certain aspects of the work setting -- e.g., the workplace climate -- as more positive than do minority group members. The sample used in the analyses below includes relatively small numbers of racial-ethnic minority faculty. In the absence of many racial-ethnic minorities, analyses of differences between race-ethnicity groups do not always have appropriate statistical power[4]. In this type of situation, some noticeable group differences may not reach statistical significance (see the section below for more about statistical significance).

Data Analysis Strategy

Group Comparisons

In various areas of this report we report on comparisons across certain groups of faculty on the basis of race-ethnicity and gender. For most of the variables we analyzed, six types of comparisons were made. These are listed below:

- Female faculty (pooled across race-ethnicity groups) were compared to male faculty (pooled across race-ethnicity groups)
- Faculty of color[5] (pooled across gender groups) were compared to white faculty (pooled across gender groups)
- Female faculty of color were compared to male faculty of color
- White female faculty were compared to white male faculty

[4] Statistical power is the likelihood that a test will detect an effect or difference when there is an effect or difference present.
[5] Given the small number of faculty of color in the sample, we combined Asian and Asian-American faculty with underrepresented minority faculty in the analyses reported here.

- Male faculty of color were compared to white male faculty
- Female faculty of color were compared to white female faculty

Analyses of Continuous Variables

When assessing scores on scales as a function of gender and race-ethnicity, we used analysis of variance (ANOVAs). These analyses compared the mean scores of the gender and race-ethnicity groups. Analysis of variance is a statistical procedure that apportions variation in people's scores on a variable to different factors—in this case, their membership in one of the two gender groups (female; male) and their membership in one of the two race-ethnicity groups (faculty of color; white faculty).

Analyses of Frequency Data

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 kinds of faculty experiences the climate study assesses (e.g., reports of unwanted sexual attention). Even in such instances of rare occurrences, planned comparisons were pursued as it was important to understand how these experiences may differ by gender and by race-ethnicity. However, statistical comparisons cannot be made when instances are non-existent or fully present in all groups (i.e., 0% or 100%).

Analyses Predicting Job Satisfaction

In one of the final sections of this report, predictors of job satisfaction were explored. In these analyses, regression and correlation analyses were used. These analyses are useful for testing associations between variables.

Statistical Significance

In the results reported below, references to group differences and associations between variables refer to findings found to be statistically significant (i.e., $p \leq .05$). This involves 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 described as trends (trends involved p-values $\geq .055$ and $\leq .104$). Trends are included in this report because, at times, the numbers in certain groups (e.g., male faculty of color) were relatively low, which makes detecting significant differences more difficult.

Data tables follow the report. Tables were produced for each set of analyses to display differences among the four gender/race-ethnicity groups. Each table reports means or frequencies by group.

STRUCTURE OF THE REPORT

In the first Findings section (Findings I) we report on how the work climate is perceived by faculty members, and ways in which these perceptions differed as a function of respondent gender/race-ethnicity.

In the second Findings section (Findings II) we examine qualities and characteristics of faculty work life, beyond the climate, that are often important to faculty members' ability to be productive and have satisfying careers. Variables of interest here include access to adequate resources, opportunities for leadership, demands for university service, and experiences with mentoring relationships. Here again we consider whether or not these aspects of work life vary systematically by race-ethnicity and/or gender.

In the third Findings section (Findings III) we report on family- and household-related variables, such as level of household responsibility, level of childcare responsibility, household composition, and impacts of caring for others on one's professional life. For each of the variables in this section we tested for group differences as a function of gender and race-ethnicity.

In the last Findings section (Findings IV) we examine predictors of overall career satisfaction. Predictors of career satisfaction were examined via the use of multiple regression and correlation analyses. Predictor variables examined here included both climate-related variables, variables that capture qualities and characteristics of faculty work life, and variables indexing various aspects of home life. Predictors of career satisfaction may differ for men and women, and for faculty of color and white faculty. Thus, group membership was considered in this series of analyses.

FINDINGS I: SCHOOL CLIMATE

ASSESSMENTS RELATED TO GENDER (TABLE 1)

The survey asked gender-related questions regarding the climate that faculty may experience at work: overheard disparaging comments about women and men, gender discrimination, and unwanted and uninvited sexual attention.

DISPARAGING COMMENTS ABOUT WOMEN AND MEN

Faculty were asked about the frequency with which they overheard insensitive or disparaging comments about women and men within the last five years at UM. Reponses were provided on a scale ranging from 1 (never) to 5 (weekly). Respondents were asked about disparaging comments made by both other faculty and by students; these two questions were averaged to form summary variables capturing the frequency with which disparaging gender-related comments were overheard (one variable for comments about women, the other for comments about men).

In general, faculty indicated that it was rather rare to overhear insensitive or disparaging comments about women; mean responses for all four gender/race-ethnicity groups fell between 'never' and 'once or twice per year.' The four gender/race-ethnicity groups did not differ in their responses to this question.

Very similar responses were given to the question about overhearing insensitive or disparaging comments about men; the mean responses for all four gender/race-ethnicity groups again fell in the 'never' to 'once or twice per year' range, and there were no differences between the four gender/race-ethnicity groups.

GENDER DISCRIMINATION

Faculty were asked about their experiences of gender discrimination in six specific areas (hiring, promotion, salary, space/equipment and other resources, access to administrative staff, and graduate student or resident/fellow assignments). We first examined each of these areas individually; however, in most instances frequencies were too low to compare the four groups statistically. Therefore, a variable was created that captured whether a respondent had experienced any of the forms of discrimination. Rates were 0% for men of color, 5% for white men, 11% for women of color, and 19% for white women.

Female faculty of color were more likely than male faculty of color to have experienced some form of gender discrimination. Similarly, white female faculty were more likely than white male faculty to have experienced gender discrimination in some form.

UNWANTED SEXUAL ATTENTION

Faculty were asked if they had, within the past 5 years, experienced any unwanted/uninvited sexual attention (e.g., sexual remarks, pressure for dates, e-mails, touching, sexual pressure, stalking, assault). Rates were quite low: 0% for men of color, 2% for white men, 3% for women of color, and 5% for white women. There were no significant differences between the four gender/race-ethnicity groups, nor was there a significant difference when all women were compared to all men.

Faculty were also asked if, within the past five years, individuals from UM had come to them feeling concerned about behavior they had experienced that fell into the realm of unwanted/uninvited sexual attention. Here again, rates were rather low: 0% for men of color, 4% for white men, 0% for women of color, and 10% for white women. There were no significant differences between the four gender/race-ethnicity groups, nor was there a significant difference when all women were compared to all men.

ASSESSMENTS RELATED TO RACE-ETHNICITY (TABLE 2)

The survey asked about two race-ethnicity-related issues regarding the climate that faculty may experience at work: overhearing disparaging comments about racial-ethnic minorities and/or religious groups and the experience of racial-ethnic discrimination.

DISPARAGING COMMENTS ABOUT RACIAL-ETHNIC MINORITIES AND/OR RELIGIOUS GROUPS

Faculty were asked about the frequency with which they overheard insensitive or disparaging comments about racial-ethnic minorities and/or religious groups within the last five years at UM. Reponses were provided on a scale ranging from 1 (never) to 5 (weekly). Respondents were asked about disparaging comments made by both other faculty and by students; these were averaged to form a summary variable.

In general, faculty indicated that it was rare to overhear insensitive or disparaging comments about racial-ethnic minorities and/or religious groups; mean responses for all four gender/race-ethnicity groups fell in the 'never' to 'once or twice per year' range. There were no significant differences between any of the four gender/race-ethnicity groups in response to this question.

RACIAL-ETHNIC DISCRIMINATION

As with gender discrimination, survey respondents were asked about their experiences of racial-ethnic discrimination in the same six specific areas (hiring, promotion, salary, space/equipment and other resources, access to administrative staff, and graduate student or resident/fellow assignments). Again, frequencies on the individual items were often too low to make statistical comparisons among the four groups. Thus, similar to our measure of gender discrimination, we created a measure that captured whether a respondent had experienced any of the forms of discrimination.

Rates of experiencing racial-ethnic discrimination were: 0% for men of color, 4% for white men, 16% for women of color, and 2% for white women. Women of color were significantly more likely to have experienced some form of racial-ethnic discrimination than were white women. (The difference between women of color and men of color did not approach significance, perhaps due to low numbers of respondents in both groups.)

SCHOOL CLIMATE (TABLE 3)

GENERAL SCHOOL CLIMATE

The general School climate was assessed with five scales (all scale ranges were 1-5). Each scale is described briefly below, with analyses of that scale following the description.

Positive climate: the mean of six items assessing the extent to which the School climate is perceived as: friendly, respectful, collegial, collaborative, cooperative, and supportive (internal consistency for this scale was high; $\alpha = .92$)[6]

Mean scores on the positive climate scale were in the moderately positive range for all gender/race-ethnicity groups, ranging from a low of 3.73 for female faculty of color to a high of 4.11 for male faculty of color. There were no differences on this scale as a function of group membership.

Scholarly isolation: the mean of six items assessing level of isolation in areas such as comfort asking questions about performance and pressure to change one's research agenda (internal consistency for this scale was good; $\alpha = .73$)

Mean scores on the scholarly isolation scale were in the moderately-low range, with a low of 2.23 for white men and a high of 2.52 for women of color. There were no differences on this scale among the four gender/race-ethnicity groups.

[6] Cronbach's alpha is a measure of how closely interrelated a set of items are, with alphas closer to 1.00 indicating that items are highly interrelated and can justifiably be combined to create a composite variable.

Felt surveillance: the mean of four items assessing level of perceived scrutiny, such as reluctance to raise concerns out of fear of career consequences and the perception of needing to work harder than others in order to be perceived as a legitimate scholar (internal consistency for this scale was good; $\alpha = .77$)

Mean scores on the felt surveillance scale were in the moderately-low range, with a low of 2.37 for white men and a high of 2.73 for women of color. There were no group differences on this scale.

Fairness of unit/department leader: the mean of 3 items assessing the perceived fairness of the unit/department head, such as the extent to which the leader honors agreements and treats faculty in an even-handed way (internal consistency for this scale was high; $\alpha = .90$)

Mean scores on this scale were in the moderately-positive range, with a low of 3.61 for white women and a high of 4.04 for men of color. There were no group differences on this scale.

Unit/department leader's creation of positive environment: the mean of 3 items assessing the unit/department leader's perceived record of creating a cooperative and supportive environment, empowering faculty, and serving as an effective administrator (internal consistency for this scale was high; $\alpha = .91$)

Mean scores on this scale were in the moderately-positive range, with a low of 3.70 for white women and a high of 4.02 for men of color. There were no differences on this scale among the four gender/race-ethnicity groups.

SCHOOL CLIMATE RELATED TO DIVERSITY

The School climate related to issues of diversity was assessed with four measures (three scales and one single item; all scale and item ranges were 1-5). Each scale is described briefly below, with analyses of that scale following directly after the description.

Tolerant climate: the mean of six items assessing the extent to which the School climate is perceived as: non-racist, non-homophobic, diverse, and non-sexist (internal consistency for this scale was good; $\alpha = .75$)

Mean scores on the tolerant environment scale were in the moderately-positive range for all gender/race-ethnicity groups, ranging from a low of 3.92 for women of color to a high of 4.29 for white men. Although all groups had mean ratings in the same general area of the scale, female faculty provided significantly lower ratings compared to male faculty.

Gender egalitarian atmosphere: the mean of 9 items assessing issues such as gender-based preferential treatment, the presence of sex discrimination, equal access to lab/research space, and the appropriate representation of women in senior positions (internal consistency for this scale was high; $\alpha = .91$)

Mean scores on this scale ranged from moderate to positive, with a low of 3.53 for women of color to a high of 4.28 for white men. Compared to white male faculty, white female faculty and male faculty of color had significantly lower ratings of the School's gender egalitarian atmosphere. The comparisons involving women of color were not significant, likely due to the low number of respondents in this group.

Tokenism: the mean of two items assessing whether faculty expect colleagues to represent the point of view of their gender and race/ethnicity (internal consistency for this scale was high; α = .88)

Mean scores on the tokenism scale were in the moderately-low range, with a low of 1.42 for white men and a high of 2.33 for women of color. Faculty of color reported significantly more tokenism compared to white faculty, and white women reported significantly more tokenism compared to white men.

Executive leader's commitment to racial-ethnic diversity: a single item assessed perceptions of the extent to which the School leader shows a commitment to racial/ethnic diversity

Mean ratings of the School leader's commitment to racial-ethnic diversity were all in the moderately-positive range, with a low of 3.96 for white women and a high of 4.37 for men of color. There were no differences on this item among the four gender/race-ethnicity groups.

SUMMARY OF CLIMATE-RELATED FINDINGS

The faculty reported that it was rather rare to overhear disparaging or insensitive comments about specific groups (e.g., women, racial-ethnic minorities), and there were no differences among the four gender/race-ethnicity groups with regard to these reports. Reported rates of directly experiencing discrimination and unwanted sexual attention were also low. However, female faculty were more likely than male faculty to report having experienced gender discrimination, and women of color were more likely than white women to have experienced some form of racial-ethnic discrimination.

The overall climate in the Medical School was rated as moderately positive, and endorsement of items asking about negative aspects of climate (e.g., felt surveillance, scholarly isolation) was mid-range to low. Ratings of School leadership with regard to fairness and the creation of a positive environment were generally positive.

When asked about the extent to which the School climate was tolerant and gender-egalitarian, overall ratings were in the moderate range. Ratings of School leadership's commitment to racial-ethnic diversity were in the moderately-positive range. Nonetheless, some group differences did emerge. Compared to male faculty, female faculty provided lower ratings when asked about tolerance in the School. Compared to white male faculty, white female faculty and male faculty of color gave significantly lower ratings of the School's gender egalitarian atmosphere. Faculty of color reported significantly more tokenism compared to white faculty, and white women reported significantly more tokenism compared to white men.

FINDINGS II: CAREER-RELATED EXPERIENCES

RESOURCES & SUPPORT (TABLE 4)

Faculty members were queried about their satisfaction with both office and research space as well as satisfaction with computer equipment, lab equipment, and vendor service (e.g., repairs, supplies, upgrades). They were also asked if their department chair helps them obtain the resources they need. Questions were also asked about satisfaction with other aspects of their research space and equipment: location, computing, safety, and maintenance. There was one question each about level of satisfaction

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

SATISFACTION WITH RESOURCES

A summary scale ranging from 1-5 was created to capture faculty members' overall satisfaction with resources. The scale was computed as the mean of five items measuring satisfaction with: amount of office space, amount of research space, computer equipment, lab equipment, and vendor services (internal consistency for this scale was good; $\alpha = .84$). Mean ratings were in the moderately-positive range for all groups, with a low of 3.74 for female faculty of color and a high of 4.01 for male faculty of color. There were no significant differences on this scale among the four gender/race-ethnicity groups.

Faculty members were also asked to rate the effectiveness with which their unit director/chair helps them obtain needed resources (responses were provided on a 1-5 scale). Mean ratings were in the moderate range across the four gender/race-ethnicity groups, ranging from 3.46 for white women to 3.79 for men of color. There were no differences on this item among the four gender/race-ethnicity groups.

OVERALL SATISFACTION WITH WORK SPACE

A summary scale ranging from 1-5 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 (internal consistency for this scale was high; $\alpha = .89$). Mean ratings on this scale were in the moderately-positive range for all groups, with a low of 3.91 for white women and a high of 4.00 for white men; there were no significant group differences.

SATISFACTION WITH SAFETY AND BUILDING MAINTENANCE

In a single question with a response scale of 1-5, faculty members were asked about their satisfaction with the safety of their research spaces. Mean ratings on this item indicated a great deal of satisfaction with safety, with a low of 4.25 for white women and a high of 4.50 for men of color. There were no differences on this item among the four gender/race-ethnicity groups.

Faculty members were also asked, using a 1-5 scale, to rate their satisfaction with maintenance of building problems (the types of building problems addressed by UM Plant Operations). Mean responses among the four gender/race-ethnicity groups ranged from moderate to positive, with a low of 3.21 for female faculty of color to a high of 4.38 for male faculty of color. Female faculty were significantly less satisfied with building maintenance than were male faculty.

SATISFACTION WITH FUNDING

Using a scale ranging from 1 (very dissatisfied) to 5 (very satisfied), faculty members were asked about their levels of satisfaction with both university and external funding. Mean ratings of satisfaction with university funding were in the moderately-positive range, with a low of 3.76 for men of color and a high of 4.09 for women of color; there were no group differences on this item. Mean ratings of satisfaction with external funding were in the low to moderate range, with a low of 2.45 for women of color to a high of 3.54 for white men. Female faculty of color were significantly less satisfied with external funding compared to white female faculty. There was a trend for female faculty of color to be less satisfied with external funding compared to male faculty of color (it is likely that this difference failed to fully reach statistical significance due to low numbers of faculty of color in the sample).

QUESTIONS ABOUT FACULTY MEMBERS' SPOUSES AND PARTNERS

Rates for seeking UM assistance with partner employment were low across the four gender/race-ethnicity groups, ranging from a low of 6% for male faculty of color to a high of 17% for white male faculty. Satisfaction with this type of assistance from UM was rated on a 1-5 scale. Mean ratings of satisfaction were low to moderate, with a low of 1.67 for white women to a high of 3.00 for women of color (there were no group differences on level of satisfaction).

Faculty members were also asked if they had ever considered leaving UM to improve career opportunities for their partners. Reported rates of this were in the moderate range: 21% for men of color, 28% for white men, and 48% for both women of color and white women. There was a trend for women of color to be more likely than men of color to have considered leaving UM to improve opportunities for their partners.

MENTORING AND FEEDBACK

Faculty at the assistant professor level were asked if they had a mentor and, if so, what kinds of support their mentor(s) provided (e.g., serves as role model, advises about getting work published, advocates for me). Faculty at the associate and full professor levels were asked if they served as a mentor to other faculty and, if so, what kind of support they provide to their mentees. In addition to these questions about mentoring, faculty were asked to rate the extent to which chairs provided useful feedback about performance and articulated clear criteria for promotion and tenure.

ASSISTANT PROFESSORS - RECEIVED MENTORING (TABLE 5)

Slightly more than half of assistant professors reported that they had a mentor: 53% of women of color, 59% of white men, 64% of men of color, and 65% of white women. There was a trend for white female assistant professors to be more likely to have a mentor compared to female assistant professors of color.

Assistant professors were asked about the amount of mentoring they received in eight areas using the following response scale: 1 = none; 2 = some; 3 = a lot; 4 = too much. We report mean responses in Table 5. Below we present the results of analyses we conducted using data derived from this 4-point scale. For each mentoring question we report on: (a) the percentages of assistant professors with mentors who indicated

that they receive none vs. some amount of that type of mentoring, and (b) the percentages of the latter group who indicated that they receive too much of that type of mentoring.

When asked if their mentors *serve as role models*, 99% of all responding assistant professors indicated that they received some amount of this type of mentoring[7]. Further, only 1% of respondents who received this type of mentoring indicated that their mentor provided 'too much' guidance in this area.

When asked about the extent to which their mentors *promote their careers via networking*, most assistant professors with mentors indicated that they did receive some amount of this type of help, with percentages ranging from a low of 78% for women of color to a high of 100% for men of color. Only one assistant professor who received this type of mentoring indicated that she received too much of it, and there were no differences in this area of received mentoring as a function of gender or race-ethnicity.

Most respondents indicated that they receive *advice about career advancement* (e.g., promotions, leadership positions), with percentages ranging from a low of 84% for white men to a high of 100% for women of color. Here again, only one assistant professor who received this type of mentoring indicated that she received too much of it, and there were no significant differences in this area of mentoring among the four gender/race-ethnicity groups.

Assistant professors were asked about receiving *advice about department politics* from their mentors. The majority of respondents indicated that they did receive this type of guidance, with rates ranging from 78% for women of color to 86% for both men of color and white women. Only 2% of those receiving this type of mentorship indicated that they receive too much of it, and there were no gender/race-ethnicity group differences in this area of received mentoring.

Assistant professors with mentors were asked about the extent to which their mentors provide *advice about obtaining needed resources*. Rates ranged more broadly here, from a low of 56% for women of color to a high of 88% for white women. The difference between women of color and white women was statistically significant, and there was also a trend for men of color (86%) to be more likely to receive this type of mentoring compared to women of color. Only 1% of respondents reported that they receive too much of this type of mentoring.

Most assistant professors reported that their mentors *provide advocacy* for them, with rates ranging from a low of 78% for women of color to a high of 100% for men of color and white women. Only 2% of respondents reported receiving too much of this type of help, and there were no significant group differences in this area of mentoring.

[7] Here and elsewhere in the mentoring analyses, comparisons as a function of gender and race-ethnicity were not possible when there was virtually no variation in responding.

Relatively fewer assistant professors indicated that their mentors provide *advice about work/family balance*. Rates of receiving this type of mentoring ranged from a low of 44% for women of color to a high of 71% for male faculty of color. Only one respondent indicated that she received too much of this type of mentoring, and there were no differences as a function of gender/race-ethnicity.

ASSOCIATE AND FULL PROFESSORS - PROVIDING MENTORING (TABLE 6)

Rates of providing mentoring/career advice to another faculty member fell in the 50% to 70% range for associate and full professors; 50% of men of color, 57% of women of color, 67% of white women, and 68% of white men reported that they provided mentoring to junior colleagues. There were no significant differences among the four gender/race-ethnicity groups with regard to the provision of mentoring.

Associate and full professors were asked about the amount of mentoring they provided to mentees in eight areas using the following response scale: 1 = none; 2 = some; 3 = a lot; 4 = too much. For all but one of these eight areas - advising one's mentee about work/family balance - there were no significant differences among the four gender/race-ethnicity groups.

Mean ratings from associate and full professors with mentees indicated that these faculty engaged in a good deal of *role modeling*: ratings ranged from a low of 2.50 for women of color to a high of 2.80 for men of color. Mentors also reported doing a fair amount of *promoting of mentees' careers* via networking, with a low of 2.25 for women of color and a high of 2.80 for men of color. Mean ratings were similar for the degree to which mentors advised mentees about *preparation for career advancement*, with a low of 2.41 for white men to a high of 2.68 for white women.

Faculty mentors also reported giving advice to mentees about *getting work published*, with a low of 2.25 for women of color to a high of 2.80 for men of color. Mean ratings were in roughly the same range for the degree to which mentors advised mentees about *department politics*, with a low of 2.20 for men of color to a high of 2.58 for white women. Mean ratings were similar again for the extent to which mentors give advice to mentees about *obtaining needed resources*, with a low of 2.32 for white women to a high of 2.60 for men of color. Mentors indicated that they did a good deal of *advocating* for their mentees, with mean ratings ranging from 2.50 for women of color to 2.95 for white women.

Lastly, mentors were asked about the extent to which they advised mentees about *balancing work life and family life*. Mean ratings indicate that this is a topic many mentors touch on to some degree, with a low of 2.00 for men of color to a high of 2.75 for women of color. However, female mentors were significantly more likely than male mentors to offer advice to their mentees on this topic.

A final series of analyses examined whether mentors felt that they provided too much mentoring in any of the eight areas represented in the survey. None of the respondents with mentees indicated that they were doing too much with regard to advising about work/family balance, advising about publishing, giving guidance about obtaining needed resources, and serving as a role model. For the four other questions about mentoring, very few associate and full professors reported that they provided too much mentoring;

rates ranged from a low of 1% for the question about advocating for mentees to a high of 3% for the question about advising mentees about department politics. Thus, the overwhelming majority of associate and full professors with mentees did not feel as though they were giving too much advice or support in any of the eight areas reported on here.

FEEDBACK FROM UNIT LEADERS (TABLES 5 AND 6)

Faculty members used a scale ranging from 1 (poor) to 5 (superior) to rate their department/unit leaders on two items: the usefulness of feedback about performance and their articulation of clear criteria for promotion/tenure. These items were first considered separately for junior and senior faculty.

Assistant professors provided ratings of leaders' feedback about performance that fell in the range between 'average' and 'above average,' with a low of 3.32 for white women to a high of 3.91 for men of color. Assistant professors also provided ratings of leaders' articulation of clear criteria for promotion/tenure that fell in the 'average' to 'above average' range, with a low of 3.27 for women of color and a high of 3.73 for men of color. There were no significant group differences on these questions.

Associate and full professors provided ratings of leaders' feedback about performance that fell in the range between 'below average' and 'above average,' with a low of 2.67 for women of color to a high of 3.50 for men of color. There were no group differences on this question (likely due to low numbers in some groups). Associate and full professors provided ratings of leaders' articulation of clear criteria for promotion/tenure that fell in the 'average' to 'above average' range, with a low of 3.00 for women of color and a high of 3.62 for white men. There were no significant group differences on this question.

We conducted follow-up analyses on each feedback variable in which assistant and associate/full professors were combined in order to increase the statistical power of the analyses. In these analyses there were again no significant differences as a function of gender or race-ethnicity.

TEACHING, SERVICE, AND RECOGNITION

TEACHING (TABLE 7)

Faculty were asked about 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,' and were also asked about the number of formal courses they typically teach each academic year. Five questions assessed the extent to which faculty viewed the following as part of their main teaching responsibilities: 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'). Further, faculty were asked about the number of undergraduate and graduate students for whom they serve as primary advisor.

Mean ratings indicated that all four gender/race-ethnicity groups were roughly 'somewhat satisfied' with their teaching loads, with a low of 3.96 for women of color to a high of 4.37 for men of color. There were no group differences with regard to satisfaction in this area. The mean number of formal courses taught per

academic year was between 2 and 3 for all groups, ranging from 2.21 for white women 2.65 for white men; there were no differences as a function of gender/race-ethnicity group.

All groups reported engaging in a fair amount of *one-on-one instruction*; ratings ranged from 2.38 for men of color to 2.88 for women of color. Men of color characterized their main teaching responsibilities as involving significantly less one-on-one instruction compared to women of color and white men.

Mean ratings of the extent to which *seminar courses* comprise part of faculty members' teaching responsibilities fell between the 'none' and 'some' points on the rating scale, with a low of 1.44 for women of color to a high of 1.58 for white men. There were no group differences on this question.

Mean ratings of the extent to which *formal lecture courses* comprise part of faculty members' main teaching responsibilities fell between the 'none' and 'some' points on the rating scale, with a low of 1.41 for white women and a high of 1.72 for women of color. Faculty of color characterized their main teaching responsibilities as involving significantly more formal lecture courses compared to white faculty.

Mean ratings of the instructional time spent *giving occasional lectures in large courses* were low, ranging from 1.60 for both groups of women to 1.74 for white men; there were no group differences.

Faculty indicated that they viewed *modeling correct professional behavior* as a relatively important part of their main teaching responsibilities; mean ratings ranged from a low of 2.33 for men of color to a high of 2.89 for white women. White faculty provided higher ratings on this question compared to faculty of color.

With regard to advising, faculty members reported very few advising relationships with undergraduate students. The percentage of faculty who had at least one undergraduate advisee ranged from a low of 15% for both white men and white women to a high of 30% for male faculty of color. Faculty of color, on average, reported having more undergraduate advisees than did white faculty. The percentages of faculty with at least one graduate student advisee were higher, ranging from a low of 38% for female faculty of color to a high of 54% for both male faculty of color and white male faculty. There were no mean differences as a function of gender/race-ethnicity group with regard to the number of graduate students faculty members identified as advisees.

SERVICE (TABLE 8)

Respondents were asked how many committees they serve on in a typical year, the number they chair, and if they had ever felt excluded from serving on important decision-making committees. Finally, they reported whether they had ever been asked to serve as department chair, section/area/program chair, or center/lab/institute/program director, and if they had ever served in that capacity.

The mean number of committees served on in a typical year roughly ranged from two to three, with a low of 2.17 for women of color and a high of 3.17 for white men. The mean number of committees chaired in a typical year was low, ranging from .38 for white women to .70 for white men. There were no differences as

a function of gender/race-ethnicity with regard to either of these questions. Rates of feeling excluded from important decision-making committees were in the moderate range: 20% of men of color, 22% of white men, 26% of white women, and 32% of women of color. There were no significant differences between the four gender/race-ethnicity groups with regard to this feeling of exclusion. There was a trend for women of color to have felt more of this type of exclusion compared to men of color.

Rates of having ever been asked to serve as some type of unit director were 24% for white women, 28% for women of color, 35% for white men, and 40% for men of color; these rates did not differ significantly by gender/race-ethnicity group. Rates of having ever served in this capacity were 25% for both groups of women, 32% for men of color, and 33% for white men and did not differ by gender/race-ethnicity.

RECOGNITION (TABLE 9)

To assess experiences of recognition, faculty were asked if their primary department/unit had ever nominated them for an award in the following areas: clinical, research, service, and teaching. A fifth item asked whether or not their primary department/unit had failed to nominate them for an award for which they were qualified.

Rates of having ever received a nomination for a *clinical award* ranged from a low of 5% for men of color to a high of 17% for white men; there were no significant group differences related to the receipt of this type of award. Rates for the receipt of a *research award* were low for all groups, ranging from a low of 0% for women of color to a high of 5% for men of color; there were no significant group differences.

Rates for the receipt of a *service award* ranged from 8% for both groups of female faculty to a high of 18% for men of color; there were no significant differences as a function of gender/race-ethnicity. Rates of having ever received a nomination for a *teaching award* ranged from a low of 13% for women of color to a high of 41% for men of color. This difference between women of color and men of color was significant.

Finally, faculty reported on whether they felt passed over for an award nomination for which they were deserving. Rates of affirmative responses ranged from a low of 0% for women of color to a high of 11% for white men; there were no significant differences on this question as a function of gender/race-ethnicity.

INFLUENCE AND SELF-DETERMINATION

INFLUENCE (TABLE 10)

The survey identified nine areas of influence in department activities; respondents were asked to rate their level of felt influence in each of the areas using a scale ranging from 1 (no influence) to 5 (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 *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 *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 *felt influence over resource allocations* scale.
- The ninth area, *influence over the overall unit's climate/culture*, remained a separate item.

Three items assessing faculty members' sense of impact were included in the survey: (a) I have significant influence over what happens in my department/unit; (b) I have a great deal of control over what happens in my department/unit; and (c) my impact on what happens in my department/unit is large). The response scale for these items ranged from 1 (strongly disagree) to 5 (strongly agree). These items were averaged to create a summary impact scale (α = .94).

Mean levels of *felt influence over education matters* fell in the 'minor influence' to 'some influence' range, with a low of 2.48 for women of color and a high of 2.87 for white men; there were no significant gender/race-ethnicity group differences.

Mean levels of *felt influence over faculty matters* fell in the 'no influence' to 'minor influence' range, with a low of 1.70 for women of color and a high of 2.09 for white men; there were no significant mean differences as a function of gender/race-ethnicity.

Mean levels of *felt influence over resource allocations* also fell in the 'no influence' to 'minor influence' range, with a low of 1.65 for women of color and a high of 2.01 for white men.

Mean levels of *felt influence over the overall unit's climate/culture* fell in the 'minor influence' to 'some influence' range, with a low of 2.29 for men of color and a high of 2.67 for white men. There were no significant differences on this item among the four gender/race-ethnicity groups.

Finally, mean scores on the impact scale were in the moderate range, with a low of 2.46 for white women to a high of 3.02 for men of color. Faculty of color, on average, reported experiencing a greater sense of impact in their department/unit compared to white faculty.

SELF-DETERMINATION, GROWTH, AND BOUNDARIES (TABLE 10)

Several questions were asked with the goal of assessing 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 assessed on a 1 (strongly disagree) to 5 (strongly agree) scale were combined to create a *self-determination scale*[8]: (a) I can decide on my own how to go about doing my work; (b) I have significant autonomy in determining how I do my job; and (c) I have considerable opportunity for independence and freedom in how I do my job.

Four items assessed on a 1 (strongly disagree) to 5 (strongly agree) scale were combined to create a *boundary management scale*[9]: (a) I allow work to interrupt me when I spend time with my family and friends; (b) I regularly bring work home; (c) I respond to work-related communications during my personal time away from work; and (d) I work during my vacations. Note: Items were reverse-scored prior to scale creation, meaning that higher scores on this scale indicate firmer boundaries between work life and personal life.

Finally, three items assessed on a 1 (strongly disagree) to 5 (strongly agree) scale were combined to create a *growth and learning scale*[10]: (a) I find myself learning often; (b) I continue to learn more and more as time goes by; and (c) I have developed a lot as a person.

Mean ratings on the *self-determination* scale were in the moderate range, with a low of 3.58 for white female faculty and a high of 3.76 for male faculty of color; there were no significant group differences. Mean ratings on the *boundary management* scale indicated a fair amount of connection between work life and personal life, with scores ranging from a low of 1.64 for white women to high of 1.88 for men of color. (Recall that higher scores on this measure indicate more solid boundaries between work life and home life.) There were no significant group differences on this measure.

Mean scores on the *growth and learning* scale were high, ranging from 4.24 for men of color to 4.40 for women of color. There were no differences on this measure as a function of gender/race-ethnicity.

SUMMARY OF CAREER EXPERIENCE-RELATED FINDINGS

Faculty members provided moderately-positive ratings with regard to their overall satisfaction with resources and work space. There was a great deal of satisfaction with the safety of work spaces. Satisfaction with building maintenance ranged from moderate to positive, with female faculty expressing less satisfaction compared to male faculty.

Ratings of satisfaction with university funding were modestly positive, and ratings of satisfaction with external funding were lower. Female faculty of color were less satisfied with external funding compared to white female faculty and male faculty of color.

[8] See Spreitzer (1995); internal consistency (Cronbach's alpha) was high at .96

[9] See Kossek et al. (2012); internal consistency was good at .80

[10] See Spreitzer et al. (2005) and Porath et al. (2001); internal consistency was high at .86

Ratings of satisfaction for UM assistance with partner employment were low to moderate. Women were more likely than men to have considered leaving UM to improve opportunities for their partners.

Roughly half of assistant professors reported that they had a mentor/career advisor (rates ranged from 53% for women of color to 65% for white women). There was a trend for white female assistant professors to be more likely to have a mentor compared to female assistant professors of color. When asked about the extent to which their mentors provide advocacy and advice about obtaining resources, women of color reported receiving less of this type of mentoring compared to white women and men of color.

All four gender/race-ethnicity groups reported being were somewhat satisfied with their teaching loads. The mean number of committees served on in a typical year roughly ranged from two to three; there were no significant gender/race-ethnicity group differences with regard to serving on or chairing committees. There was a trend for women of color to have felt more excluded from important decision-making committees compared to men of color.

When faculty were asked about the level of influence they experienced in areas such as educational matters, faculty matters, and resource allocation, responses generally ranged from having a minor influence to some influence. Overall, faculty provided ratings in the moderate range when asked about their feelings of self-determination on the job, but were positive when asked about their experiences of learning and growth on the job.

FINDINGS III: FAMILY & HOUSEHOLD VARIABLES

HOUSEHOLD (TABLE 11)

Faculty provided information on whether or not they had spouses/partners and children and, when relevant, information on partner employment status and their level of childcare responsibilities. Faculty with children were asked about the age of their youngest child. For the purposes of the analyses below, we consider faculty as having parenting responsibilities if their youngest children were reported as being under the age of 18 in 2012. Some faculty did not supply any response when asked if they had a spouse or partner; thus, analyses of some variables below (e.g., % of faculty with partners and children under 18) did not include all respondents. Faculty were also asked about their level of household responsibilities, and whether aspects of their work lives were affected by caring for others, or by their own health issues.

FAMILY DEMOGRAPHICS

Of the faculty that responded to questions about family composition, fewer than 1% of faculty members reported being single parents of children under age 18. The rates of faculty who reported being single with no children under age 18 were low, ranging from 3% of white men to 12% of white women. The rates of faculty who reported having a spouse/partner but no children under age 18 ranged from 24% of white women to 42% of white men. Rates of faculty who reported having both a spouse/partner and at least one child aged 18 or younger ranged from a low of 55% for white men to a high of 67% for men of color. There

were no significant differences among the four gender/race-ethnicity groups with regard to these family constellation variables.

PARTNER EMPLOYMENT

Rates of faculty reporting that their partners were employed full time were: 18% for white men, 25% for men of color, 53% for white women, and 59% for women of color; female faculty were significantly more likely to have a partner working full time than were male faculty. Among only those faculty who reported that their partners worked at UM, the rates of those partners who worked as UM faculty were: 41% for white men, 75% for women of color, 86% for white women, and 100% (2 out of 2) for men of color. The rate for white women was significantly higher than the rate for white men.

FAMILY RESPONSIBILITIES

Faculty with children and spouses/partners responded to a question about their own level of childcare responsibility using a 1-5 scale, with values higher than 3 indicating that the respondent handled more of the childcare responsibilities than their partner (a value of 3 indicated equally-shared responsibilities). Mean scores ranged from a low of 2.14 for white men to a high of 3.58 for women of color. Female faculty provided significantly higher ratings on this measure of childcare responsibility compared to male faculty.

A summary 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, partnered employed full time, with young child) received a higher household responsibility score compared to those with fewer family demands (e.g., no partner and no young children). Mean scores on the measure ranged from a low of 1.92 for white men to a high of 2.59 for women of color. Here again, female faculty provided significantly higher ratings on this measure compared to male faculty.

Faculty were also asked if six areas of their professional lives had been affected by (a) caring for an adult who is ill, disabled, or aging, (b) caring for children, and/or (c) one's own health issues. Responses to these questions were scored with regard to the number of areas of professional life affected (0 - 6). 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.

Mean scores were rather low with regard to the number of work life areas affected by caring for another adult. Mean scores ranged from a low of .19 for white women to .34 for white men; there were no significant group differences.

Mean scores for the number of work life areas affected by caring for children ranged from a low of .96 for male faculty of color to a high of 2.00 for female faculty of color. On average, female faculty reported significantly more work life areas affected by childcare than did male faculty.

Mean scores for the number of work life areas affected by one's own health issues ranged from a low of .04 for men of color to a high of .59 for women of color. On average, women of color reported more areas of their professional lives affected by health issues compared to white women and men of color.

SUMMARY OF FAMILY & HOUSEHOLD-RELATED FINDINGS

Female faculty were more likely to have a partner working full time than were male faculty, and they also indicated that they had more childcare and household responsibilities compared to male faculty. Further, female faculty indicated that more areas of their professional lives are impacted by childcare responsibilities, compared to the number indicated by male faculty. When asked about how one's own health issues impacted their work, women of color reported more areas of their professional lives affected by health issues compared to white women and men of color.

FINDINGS IV: VARIABLES ASSOCIATED WITH JOB SATISFACTION

ANALYTIC APPROACH

ABOUT REGRESSION ANALYSIS AND CORRELATION COEFFICIENTS

In a final series of analyses, we examined relationships between faculty members' overall job satisfaction and many of the variables considered above. Most predictors of job satisfaction were explored via the use of multiple regression. Multiple regression analysis allows for the simultaneous examination of multiple potential predictors of an outcome variable of interest (in this case, job satisfaction). Those predictors that emerge as significant in such an analysis are those that predict substantial variance in job satisfaction above and beyond any variance predicted by the other variables in the model.

We also report on a small number of correlational analyses below. Correlation statistics describe the associations between two variables, in terms of magnitude and direction, but do not allow for the statistical control of a large number of other predictor variables.

When a significant, positive relationship emerges between two variables in a regression or correlation analysis, it means that increases in the predictor variable (e.g., satisfaction with funding) are associated with increases in the outcome variable (e.g., job satisfaction), on average[11]. Conversely, when a significant, negative relationship between two variables emerges in a regression or correlation analysis, it means that increases in the predictor variable (e.g., number of committees served on) are associated with decreases in the outcome variable (e.g., job satisfaction), on average[12]. We note that significant associations in this type of study cannot and should not be interpreted in causal terms, but are often quite informative nonetheless.

[11] Further, in a positive association, decreases in the predictor variable are associated with decreases in the outcome variable, on average.

[12] Further, in a negative association, decreases in the predictor variable are associated with increases in the outcome variable, on average.

Because only a fraction of the faculty sample had sought UM help with finding employment for a partner/spouse, this variable was not explored as a predictor of job satisfaction in the regression analyses. Including this variable in the regression models, in which cases with missing values were omitted, would have drastically decreased the numbers of respondents included in these analyses, thereby reducing statistical power. Instead, satisfaction with UM help in securing employment for partners was assessed in relation to job satisfaction in stand-alone correlation analyses for each gender/race-ethnicity group.

JOB SATISFACTION VARIABLE

The outcome variable of interest - overall job satisfaction - was measured with a summary variable that was constructed as the mean of three items[13] that were each assessed on a 5-point scale: (1) How satisfied are you with your current position at UM?; (2) How much you would like to stay at UM for your entire career?; and (3) How often do you think about leaving UM? Prior to computing the job satisfaction variable, responses to the third item used in the scale were reverse-scored so that more positive values indicated fewer thoughts about leaving.

DEMOGRAPHIC VARIABLES INCLUDED IN ALL REGRESSION ANALYSES

In the sections below, the predictor variables used in each set of regression analyses are listed. However, we note that the following demographic variables were included in all of the regression models:

Demographic Variables	Description
Experience in Academia	Composite of age, years at UM, year of highest degree, and rank
Gender	Single item (coded as: 0 = male, 1 = female)
Race-ethnicity	Single item (coded as: 0 = white, 1 = faculty of color)

Gender and race-ethnicity were entered as predictor variables in all regression models. These variables allowed us to compare female faculty to male faculty, and faculty of color to white faculty. The interaction between gender and race was also tested for significance in each model. This test had the potential to reveal patterns of job satisfaction that may vary within a particular gender group (e.g., women) as a function of race, or within a particular race-ethnicity group (e.g., faculty of color) as a function of gender. In each model presented below, we also tested two-way interactions between gender and other predictor variables, and between race-ethnicity and other predictor variables. We do not discuss interactions further, as none of the two-way interaction variables we tested were significant predictors of job satisfaction.

RELATIONSHIPS BETWEEN CLIMATE-RELATED VARIABLES AND JOB SATISFACTION

The first regression model explored the relationships between key climate-related variables and faculty members' overall job satisfaction. In addition to the demographic variables listed above, the following climate-related variables were included in the regression model:

[13] Cronbach's alpha – a measure of internal consistency – was quite good at .82. This alpha was high enough (i.e., > .70) to justify combining these three items into a summary scale measuring job satisfaction. All other summary scales created for the regression analyses were also checked for adequate internal consistency (alphas > .70) prior to use in the analyses reported below.

Climate-Related Variables	Description
Summary Climate Scale	Mean of items assessing positivity of environment, level of scholarly isolation, felt surveillance, and ratings of unit leader
Tolerant Climate Scale	Mean of 4 items assessing prejudice/discrimination in department/unit for vulnerable groups
Gender Egalitarian Atmosphere	Mean of 9 items assessing gender egalitarianism
Disparaging Comments about Women	Mean of 2 items assessing presence of disparaging comments about women in unit
Disparaging Comments about Racial-Ethnic and/or Religious Minorities	Mean of 4 items assessing presence of disparaging comments about racial-ethnic and/or religious minorities
Experienced Gender Discrimination (in past 5 years)	Presence of observed discrimination in any of 6 areas; e.g., hiring, salary (coded as 0 = absent, 1 = present)
Experienced Racial-Ethnic Discrimination (in past 5 years)	Presence of observed discrimination in any of 6 areas; e.g., hiring, salary (coded as 0 = absent, 1 = present)

Taken all together, the demographic and climate-related variables in this model accounted for 42% of the variance in job satisfaction[14]. The following two variables emerged as statistically significant predictors of job satisfaction after controlling for all other variables in the model:

- The summary climate scale was a relatively strong, positive predictor of job satisfaction. More positive ratings of the work climate – e.g., less scholarly isolation, less felt surveillance, higher ratings of the unit leader, etc. – were associated with greater job satisfaction, on average.
- The tolerant climate scale also emerged as a significant, positive predictor of job satisfaction. More positive ratings of the climate with regard to levels of prejudice/discrimination – e.g., less perceived racism, sexism, and homophobia – were associated with greater job satisfaction, on average.

RELATIONSHIPS BETWEEN CAREER-RELATED VARIABLES AND JOB SATISFACTION

The next analysis explored relationships between career-related variables and faculty members' job satisfaction. Summary scales were created to measure a number of predictors of job satisfaction that were originally measured using multiple items. We note in the list of predictor variables below any variables that were constructed as composites of multiple items. For some predictor variables, the creation of summary scales was not possible; these variables were included in the regression analyses as single items.

[14] Note that across the three models presented here, the percentage of variance accounted for is not expected to sum to 100% or any other specific value. This is because the various predictor variables are not completely uncorrelated, some relevant predictor variables were not measured in the survey, and some of the same demographic variables were included in each model.

Career-Related Variables	Description
Satisfaction with Office Space and Location	Mean of satisfaction with amount of space, computer and lab equipment, vendor service, location and contiguity, maintenance, and safety
Number of Committees Served on in Typical Year	Single item
Quality of Feedback from Department/Unit Chair/Director	Mean of 2 items measuring quality of feedback from superior on job performance and quality of information offered about promotion/tenure
Have Mentor or Career Advisor	Single item (coded as: 1 = no, 2 = yes)
Failure to be Nominated for Award by Department/Unit	Single item (coded as: 1 = no, 2 = yes)
Self Determination/Impact	Mean of 6 items measuring the extent to which respondent can make autonomous decisions about work activities and has influence over work activities
Boundary Management	Mean of 4 items measuring the extent to which work spills into vacation time, family time, and time at home
Learning/Growth on the Job	Mean of 3 items measuring growth and learning on the job; e.g., "I find myself learning often"
Satisfaction with Teaching Load	Single item
Satisfaction with University Funding	Single item

Taken all together, the demographic and career-related variables in this model accounted for 47% of the variance in job satisfaction. The following variables emerged as statistically significant predictors of job satisfaction after controlling for all other variables in the model:

- The variable capturing level of experience in academia was a significant, positive predictor of job satisfaction. More experience in the academic world was associated with greater job satisfaction, on average.
- In this model, a trend (p = .06) emerged wherein faculty of color reported less overall job satisfaction, on average, compared to white faculty.
- The variable measuring quality of feedback from chairs/unit leaders was a significant, positive predictor of job satisfaction. More positive ratings of this type of feedback were associated with greater job satisfaction, on average.
- A significant and positive predictor of job satisfaction was the extent to which faculty felt a sense of self-determination and impact. Greater levels of self-determination and impact were, on average, associated with higher levels of job satisfaction.

As noted above, correlation analyses were used to explore potential associations between satisfaction with UM assistance with partner employment and job satisfaction (for those faculty who had sought such assistance). There were 24 respondents who indicated that they had sought such assistance (10 women and 14 men), and in this group there was no significant association between overall job satisfaction and satisfaction with UM assistance with partner employment.

RELATIONSHIPS BETWEEN FAMILY & HOUSEHOLD VARIABLES AND JOB SATISFACTION

The final regression model explored relationships between family and household variables and faculty members' level of job satisfaction. The following variables, in addition to the demographic factors included in all models, were assessed here:

Family/Household Variables	Description
Number of Areas of Work Life Affected by Caring for Children	Computed as sum of 6 areas of work like potentially affected by caring for children (e.g., professional travel curtailed)
Number of Areas of Work Life Affected by Caring for Adult	Computed as sum of 6 areas of work like potentially affected by caring for an adult (e.g., opportunities not taken)
Number of Areas of Work Life Affected by Own Health	Computed as sum of 6 areas of work like potentially affected by own health issues (e.g., time away from work)
Level of household responsibility	Those with more family responsibilities (e.g., single parent; partner employed full time; 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).

Taken all together, the demographic and family/household-related variables in this model accounted for 6% of the variance in job satisfaction. The following variables emerged as statistically significant predictors of job satisfaction after controlling for all other variables in the model:

- The variable measuring the number of work areas affected by caring for children was a significant and negative predictor of job satisfaction. More childcare-related impacts on work life were, on average, associated with lower levels of job satisfaction.
- Likewise, the variable measuring the number of work life areas affected by one's own health issues was a significant and negative predictor of job satisfaction. More of these types of impacts on work life were, on average, associated with lower levels of job satisfaction.

SUMMARY OF FINDINGS FROM REGRESSION ANALYSES

The first regression model explored associations between climate-related variables and job satisfaction. More favorable evaluations of the overall work climate were associated with greater job satisfaction, on average. Similarly, more positive views of the work climate as diverse and tolerant were associated with greater job satisfaction, on average.

The second regression model examined relationships between career-related variables and job satisfaction. In this model, more time spent in academia (as indexed by age, rank, time since highest degree, etc.) was associated with greater career satisfaction. Also associated with job satisfaction were ratings of the quality of feedback from chairs/unit leaders, and the extent to which faculty felt a sense of self-determination and impact. Higher values on both of these variables were associated with greater job satisfaction. Finally, after controlling for all of the career-related variables in the model, a marginally-significant relationship between race-ethnicity and job satisfaction emerged, with faculty of color having lower mean satisfaction scores than white faculty.

In the final regression model, household and family variables were examined in relation to job satisfaction. Two variables were negatively related to job satisfaction: the number of aspects of work life impacted by (a) childcare responsibilities, and (b) one's own health issues. For each of these variables, greater numbers of impacts were associated with less job satisfaction, on average.

CONCLUSIONS

CLIMATE

In general, clinical-track faculty members' ratings of the climate at the Medical School were in the moderately-positive range, and reports of explicitly discriminatory or harassing behaviors in the School were rare. Further, for many of the climate-related questions, the four gender/race-ethnicity groups did not differ significantly in their responses.

However, some differing views on the climate as a function of gender and/or race were found, and these deserve attention. Compared to male faculty, female faculty were more likely to report having experienced gender discrimination, and provided lower ratings when asked about tolerance in the School. Women of color were more likely than white women to have experienced some form of racial-ethnic discrimination. Compared to white male faculty, other faculty members provided lower ratings of the gender egalitarian atmosphere in the school. Finally, faculty of color reported significantly more tokenism compared to white faculty, and white women reported significantly more tokenism compared to white men.

Do experiences of the workplace climate have implications for job satisfaction? For the clinical-track faculty at the Medical School, the answer appears to be yes. More favorable evaluations of the overall work climate – which included ratings of things like collegiality, cooperation, friendliness, scholarly isolation, felt surveillance, and views of the unit leader – were associated with greater job satisfaction. Further, more positive views of the work climate as diverse and tolerant were associated with greater job satisfaction. While strong conclusions about causality cannot be drawn based on these findings, these results do suggest that continued efforts to improve experiences of the workplace climate could lead to greater job satisfaction for some faculty.

CAREER-RELATED EXPERIENCES

Faculty respondents answered questions that addressed many aspects of career- and retention-related experiences. Faculty members provided positive ratings with regard to their satisfaction with resources, work space, safety of work spaces, and university funding. Ratings of satisfaction with external funding were lower, and female faculty of color were less satisfied with external funding compared to white female faculty and male faculty of color. Ratings of satisfaction regarding UM assistance with partner employment were low to moderate, and women were more likely than men to have considered leaving UM to improve opportunities for their partners.

Roughly half of assistant professors reported that they had a mentor/career advisor, but there was a trend for white female assistant professors to be more likely to have a mentor compared to female assistant professors of color. Further, compared to white women and men of color, women of color reported receiving less advice about obtaining needed resources.

When faculty were asked about the level of influence they experienced in areas such as educational matters, faculty matters, and resource allocation, responses generally ranged from having a minor influence to some influence. Overall, faculty provided ratings in the moderate range when asked about their feelings of self-determination on the job, but were positive when asked about their experiences of learning and growth on the job.

Do the types of experiences described here have implications for overall satisfaction with work? In the sample we surveyed, there were indeed links between career-related experiences and job satisfaction. First, and perhaps not surprisingly given the stress that comes with being a junior faculty member, more time spent in academia (as indexed by age, rank, time since highest degree, etc.) was associated with greater career satisfaction. Second, higher ratings of the quality of feedback from chairs/unit leaders were associated with greater feelings of job satisfaction. Finally, a greater sense of work-related self-determination and impact was associated with greater job satisfaction. Although it is not possible to make causal claims about these relationships, these results suggest that efforts to improve communication between unit leaders and faculty, and efforts to help faculty to feel that more of their work is self-motivated and self-determined could have positive impacts on job satisfaction for some faculty.

FAMILY AND HOUSEHOLD EXPERIENCES

Lastly, faculty members were asked a variety of questions about family and household issues. Female faculty had more childcare and household responsibilities than did male faculty, and they identified more areas of their professional lives as being impacted by childcare responsibilities than did male faculty. Additionally, women of color reported more areas of their professional lives affected by their own health issues compared to other faculty.

Do family and household variables have an impact on work satisfaction? We found that two such variables were significantly associated with job satisfaction: the number of aspects of work life impacted by childcare responsibilities, and by one's own health issues. In each case, greater numbers of impacts were associated with less job satisfaction. Thus, although causal links cannot be established here, these findings do suggest that extra support for those caring for young children and/or facing their own health issues might increase job satisfaction for some faculty.

Table 1 - Gender Related Climate Indicators: Means and Percentages for Clinical-Track Medical School Faculty in 2012

	Men of Color n=17		White Men n=92		Women of Color n=22		White Women n=90	
	mean	sd	mean	sd	mean	sd	mean	sd
Disparaging comments about women	1.32	0.45	1.32	0.62	1.43	0.66	1.58	0.70
Disparaging comments about men	1.38	0.60	1.45	0.76	1.30	0.55	1.47	0.66
	percentage		percentage		percentage		percentage	
Gender discrimination	0%		5%		11%		19%	
Unwanted sexual attention	0%		2%		3%		5%	
Individuals reporting others reported unwanted sexual attention	0%		4%		0%		10%	

Notes: Ns vary slightly by item; N=max number of responses by group for items in table.

Table 2 - Race-Ethnicity Related Climate Indicators: Means and Percentages for Clinical-Track Medical School Faculty in 2012

	Men of Color n=17		White Men n=92		Women of Color n=22		White Women n=90	
	mean	sd	mean	sd	mean	sd	mean	sd
Disparaging comments about racial/ethnic minorities and/or religious groups	1.25	0.41	1.25	0.49	1.25	0.53	1.17	0.32
	percentage		percentage		percentage		percentage	
Racial-ethnic discrimination	0%		4%		16%		2%	

Notes: Ns vary slightly by item; N=max number of responses by group for items in table.

Table 3 - School Climate: Means for Clinical-Track Medical School Faculty in 2012

	Men of Color n=19		White Men n=101		Women of Color n=22		White Women n=96	
	mean	sd	mean	sd	mean	sd	mean	sd
Positive Environment (scale)	4.11	0.78	4.03	0.77	3.73	1.10	3.92	0.96
Scholarly Isolation (scale)	2.26	0.69	2.23	0.77	2.52	1.05	2.38	0.79
Felt Surveillance (scale)	2.43	1.08	2.37	0.98	2.73	1.34	2.41	0.96
Executive Leader as Fair (scale)	4.04	1.12	3.78	1.01	3.63	1.23	3.61	1.03
Executive Leader Creates Positive Environment (scale)	4.02	1.06	3.84	0.95	3.71	1.09	3.70	1.06
Tolerant Environment (scale)	4.28	0.74	4.29	0.62	3.92	1.02	4.12	0.72
Gender Egalitarian Atmosphere (scale)	3.80	0.83	4.28	0.61	3.53	1.08	3.64	0.91
Tokenism (scale)	1.86	1.19	1.42	0.71	2.33	1.35	1.74	0.98
Commitment of Executive Leader to Racial-Ethnic Diversity (single item)	4.37	0.76	4.12	0.84	4.19	0.87	3.96	0.85

Notes: Ns vary slightly by item; N=max number of responses by group for items in table.

Table 4 - Resources and Support: Means and Percentages for Clinical-Track Medical School Faculty in 2012

	Men of Color n=23		White Men n=118		Women of Color n=27		White Women n=114	
	mean	sd	mean	sd	mean	sd	mean	sd
Overall satisfaction with resources	4.01	1.10	3.93	1.07	3.74	1.14	3.96	1.22
Leader helps obtain needed resources	3.79	1.08	3.52	1.09	3.48	0.93	3.46	1.17
Overall satisfaction with work space	3.97	1.24	4.00	1.02	3.96	0.95	3.91	1.13
Satisfaction with safety of research space	4.50	0.76	4.46	0.90	4.42	0.90	4.25	1.07
Satisfaction with building maintenance	4.38	0.74	3.98	1.16	3.21	1.31	3.29	1.27
Satisfaction with university funding	3.76	1.30	3.82	1.12	4.09	1.11	3.87	1.14
Satisfaction with external funding	3.20	0.63	3.54	1.05	2.45	0.93	3.33	0.93
	n=1		n=14		n=3		n=6	
Satisfaction with UM assisatance with spouse/partner employment	*n too small*		2.36	1.69	3.00	2.00	1.67	0.82
	percentage		percentage		percentage		percentage	
Sought UM assistance with spouse/partner employment	6%		17%		15%		8%	
Considered leaving UM to improve spouse/partner's career opportunities	21%		28%		48%		48%	

Notes: Ns vary slightly by item; N=max number of responses by group for items in table.

Table 5 - Receieved Mentoring and Feedback - Assistant Professors: Means and Percentages for Clinical-Track Medical School Faculty in 2012

	Men of Color n=11		White Men n=56		Women of Color n=17		White Women n=78	
	percentage		percentage		percentage		percentage	
I have at least one mentor/career advisor	64%		59%		53%		65%	
	n=7		n=33		n=9		n=50	
My mentor/career advisor…	mean	sd	mean	sd	mean	sd	mean	sd
serves as a role model	3.00	0.00	2.55	0.51	2.33	0.71	2.80	0.45
promotes my career through networking	2.57	0.54	2.24	0.75	1.78	0.44	2.38	0.73
advises about preparation for advancement (e.g., promotion, leadership positions)	2.57	0.79	2.28	0.73	2.00	0.00	2.40	0.73
advises about getting my work published	2.43	0.79	2.39	0.75	2.00	0.50	2.44	0.71
advises about department politics	2.43	0.79	2.03	0.65	1.89	0.60	2.34	0.77
advises about obtaining the resources I need	2.57	0.79	2.30	0.68	1.56	0.53	2.32	0.71
advocates for me	2.86	0.38	2.58	0.71	2.22	0.83	2.74	0.49
advises about balancing work and family	2.14	0.90	1.67	0.82	1.67	0.87	1.92	0.85
	n=11		n=46		n=15		n=68	
My chair/executive leader…	mean	sd	mean	sd	mean	sd	mean	sd
gives me useful feedback about my performance	3.91	1.22	3.47	1.14	3.87	1.13	3.32	1.09
articulates clear criteria for promotion and tenure	3.73	1.35	3.46	1.19	3.27	1.03	3.51	1.07

Notes: Ns vary slightly by item; N=max number of responses by group for items in table.

Table 6 - Provided Mentoring and Feedback - Associate and Full Professors: Means and Percentages for Clinical-Track Medical School Faculty in 2012

	Men of Color n=10		White Men n=57		Women of Color n=7		White Women n=30	
	percentage		percentage		percentage		percentage	
I serve as mentor/career advisor to at least one faculty member	50%		68%		57%		67%	
	n=5		n=39		n=4		n=20	
As a mentor I…	mean	sd	mean	sd	mean	sd	mean	sd
serve as a role model for my mentees	2.80	0.45	2.64	0.49	2.50	0.58	2.60	0.50
promote my mentees' careers through networking	2.80	0.45	2.45	0.65	2.25	0.50	2.35	0.67
advise about preparation for advancement (e.g. promotion/tenure, leadership)	2.60	0.55	2.41	0.68	2.50	0.58	2.68	0.75
advise about getting my mentees' work published	2.80	0.45	2.44	0.64	2.25	0.50	2.32	0.82
advise about department/unit politics	2.20	0.45	2.44	0.64	2.25	0.96	2.58	0.77
advise about obtaining the resources my mentees need	2.60	0.55	2.51	0.56	2.50	0.58	2.32	0.67
advocate for my mentees	2.60	0.55	2.74	0.44	2.50	0.58	2.95	0.41
advise about balancing work and family	2.00	0.71	2.36	0.71	2.75	0.50	2.63	0.60
	n=8		n=52		n=6		n=28	
My chair/executive leader…	mean	sd	mean	sd	mean	sd	mean	sd
gives me useful feedback about my performance	3.50	0.54	3.33	1.08	2.67	0.52	3.43	1.32
articulates clear criteria for promotion and tenure	3.38	1.06	3.62	1.09	3.00	1.41	3.61	1.10

Notes: Ns vary slightly by item; N=max number of responses by group for items in table.

Table 7 - Teaching: Means for Clinical-Track Medical School Faculty in 2012

	Men of Color n=20		White Men n=107		Women of Color n=25		White Women n=101	
	mean	sd	mean	sd	mean	sd	mean	sd
Satisfaction with teaching load	4.37	0.83	4.15	0.92	3.96	1.31	4.09	0.92
Number of formal courses taught in typical academic year	2.45	1.50	2.65	1.68	2.64	1.62	2.21	1.59
Extent to Which Following are Part of Teaching Responsibilities								
One-on-one instruction	2.38	0.74	2.79	0.58	2.88	0.53	2.86	0.67
Seminar courses	1.48	0.51	1.58	0.57	1.44	0.58	1.46	0.67
Formal lecture courses	1.71	0.56	1.60	0.67	1.72	0.68	1.41	0.55
Occassional lectures in large courses	1.71	0.56	1.74	0.57	1.60	0.58	1.60	0.55
Modeling correct professional behavior	2.33	0.91	2.80	0.78	2.48	0.87	2.89	0.78
Advising								
Number of undergraduate advisees	0.93	1.53	0.36	1.14	0.76	2.19	0.20	0.53
Number of graduate student advisees	1.63	2.58	1.98	2.86	1.14	2.29	1.78	2.89

Notes: Ns vary slightly by item; N=max number of responses by group for items in table.

Table 8 - Service: Means and Percentages for Clinical-Track Medical School Faculty in 2012

	Men of Color n=20		White Men n=108		Women of Color n=25		White Women n=103	
	mean	sd	mean	sd	mean	sd	mean	sd
Number of committees served on in typical year	2.85	3.34	3.17	3.07	2.17	1.90	2.72	2.96
Number of committees chaired in typical year	0.50	1.05	0.70	1.27	0.42	0.58	0.38	0.94
	percentage		percentage		percentage		percentage	
Ever asked to serve as department chair	40%		35%		28%		24%	
Ever served as department chair	32%		33%		25%		25%	
Felt excluded from decision-making committees	20%		22%		32%		26%	

Notes: Ns vary slightly by item; N=max number of responses by group for items in table.

Table 9 - Recognition: Percentages for Clinical-Track Medical School Faculty in 2012

	Men of Color n=22	White Men n=113	Women of Color n=25	White Women n=108
	percentage	percentage	percentage	percentage
Ever nominated for clinical award	5%	17%	8%	12%
Ever nominated for research award	5%	2%	0%	3%
Ever nominated for teaching award	41%	36%	13%	26%
Ever nominated for service award	18%	13%	8%	8%
Dept/Unit/School failed to noimiate for deserved award	5%	11%	0%	5%

Notes: Ns vary slightly by item; N=max number of responses by group for items in table.

Table 10 - Influence and Self-Determination: Means for Clinical-Track Medical School Faculty in 2012

	Men of Color n=21		White Men n=113		Women of Color n=25		White Women n=111	
	mean	sd	mean	sd	mean	sd	mean	sd
Felt influence over educational matters	2.53	1.08	2.87	1.04	2.48	1.46	2.77	1.13
Felt influence over faculty matters	1.93	0.95	2.09	1.01	1.70	0.91	1.86	0.91
Felt influence over resource allocations	1.94	0.76	2.01	0.92	1.65	0.83	1.79	0.78
Felt influence over unit's climate/culture	2.29	0.99	2.67	1.17	2.35	1.14	2.47	1.16
Impact	3.02	1.23	2.59	1.12	2.89	1.20	2.46	1.10
Self-determination	3.76	1.17	3.75	1.02	3.73	1.35	3.58	1.05
Learning	4.24	0.76	4.29	0.70	4.40	0.91	4.29	0.64
Boundary management	1.88	0.78	1.73	0.86	1.83	0.95	1.64	0.72

Notes: Ns vary slightly by item; N=max number of responses by group for items in table.

Table 11 - Household-Related Variables - Means and Percentages for Clinical-Track Medical School Faculty in 2012

	Men of Color n=18		White Men n=95		Women of Color n=23		White Women n=92	
	percentage		percentage		percentage		percentage	
Single with children under age 18	0%		0%		0%		1%	
Single, no children under age 18	6%		3%		9%		12%	
Spouse/Partner, no children under age 18	28%		42%		26%		24%	
Spouse/Partner and children under age 18	67%		55%		65%		63%	
	n=24		n=124		n=27		n=117	
	mean	sd	mean	sd	mean	sd	mean	sd
Level of childcare responsibility	2.39	0.51	2.14	0.64	3.58	1.26	3.52	1.16
Level of household responsibility	2.12	0.54	1.92	0.71	2.59	0.54	2.40	0.58
Number of work life areas affected by caring for another adult (0 - 6 scale)	0.25	1.03	0.34	1.04	0.22	1.15	0.19	0.83
Number of work life areas affected by caring for children (0 - 6 scale)	0.96	1.43	1.24	1.70	2.00	2.15	1.72	1.96
Number of work life areas affected by own health issues (0 - 6 scale)	0.04	0.20	0.12	0.55	0.59	1.53	0.25	0.78
	n=24		n=124		n=27		n=117	
	percentage		percentage		percentage		percentage	
Partner employed full-time	25%		18%		59%		53%	
	n=2		n=29		n=8		n=29	
	percentage		percentage		percentage		percentage	
Partner is UM faculty (vs.other employment at UM)	100%		41%		75%		86%	

Notes: Ns vary slightly by item; N=max number of responses by group for items in table. Percentages were rounded, and thus may not sum to 100%