

**Survey of Postdoctoral Fellows at the University of Michigan
Prepared by the ADVANCE Program
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INTRODUCTION

In conjunction with several other academic institutions, the UM ADVANCE Program administered a survey to postdoctoral fellows at the University of Michigan in spring 2011. The survey covered a broad range of issues related to the postdoc experience and career plans. The aims of the study were to better understand the postdoctoral experience at the University of Michigan and to allow comparisons with other participating institutions with the goal of improving the work environment for postdocs at the University of Michigan.

The survey was open to all postdocs with active appointments at the University in spring 2011 (N=1406). Each postdoc received an email from Dean Janet Weiss and Vice President for Research Stephen Forrest inviting them to participate and including a link to the on-line survey. The on-line survey was open from April 28, 2011, through June 6, 2011, and a total of five email messages were sent by the ADVANCE research and evaluation team to encourage postdocs to participate. A total of 806 completed the survey (57% response rate). Those postdocs who completed the survey were given the opportunity to enter a random drawing for fifteen \$100 and twenty-five \$50 Visa gift cards.

Analysis Strategy

Following is a summary of the findings. We report frequencies, means, and standard deviations for each close-ended item. The mean provides a measure of central tendency, averaging across all responses. However, similar averages can be produced from very different spreads or dispersions of responses (e.g., responses that cluster around the mean or a more bi-modal response pattern with clusters of responses distributed at each end of the response scale). The standard deviation (the measure of spread around the mean) and frequencies provide further information about the response pattern beyond the mean. Tables are appended at the end of the report.

We assessed differences among groups within the UM postdoctoral fellow data. Comparisons were made by gender, race-ethnicity, citizenship status, and academic unit. For race-ethnicity comparisons, we compared responses from domestic Asian American, underrepresented minority (including Black, Hispanic, and Native American), and white postdocs. For the purposes of this report, we defined domestic postdocs as those who indicated they were a U.S. citizen or permanent U.S. resident. In addition, due to the large number of postdocs in the Medical School, we compared postdocs in all other fields to those in the Medical School. When data become available, the University of Michigan postdoc responses will also be compared to reports by postdocs at other peer institutions.

We begin with a detailed description of results by topic area for all UM postdoctoral fellows and then a summary of significant differences by group (gender, race-ethnicity, citizenship status, Medical School vs. all other fields).

FINDINGS

Description of Respondents

Gender and Race-Ethnicity. Of those who reported their gender, fifty-seven percent identified as male, and 43% identified as female (97 respondents did not identify their gender); this is similar to the gender composition of postdoctoral fellows at the University more generally, in which 60% are male. In terms of racial-ethnic background, of those who identified their race-

ethnicity, 52% identified as white, 41% identified as Asian/Asian American, and 8% identified as an underrepresented minority (112 respondents did not report their race-ethnicity). These rates are similar to those for the entire population of postdocs that received the survey, which was 45% white, 46% Asian/Asian American, and 7% underrepresented minority (19 of the population, or 1%, did not have a race-ethnicity code listed in the UM database).

Family. Three-quarters (76%) of postdocs reported having a partner, and of these, 81% are currently living with this person. Nearly as many (74%) of those with a partner reported that their partner works outside of the home. And of these, half (57%) indicated their partner works in academia, and slightly more (66%) of their partners work in this geographic area. Nearly one-third (31%) of these postdocs reported that their partner is currently enrolled in school.

One-third (34%) of all postdocs reported having children who live with them; a few (5%) indicated that they have children not living with them for whom they have childcare responsibilities. Regardless of whether or not they currently had children, 53% of respondents indicated that they expect to have a child within the next three years (including half of the postdocs who currently do not have children).

Income. Most postdocs (80%) reported that their current annual *personal* income from all sources was between \$30,001 and \$50,000; 16% reported current annual personal income greater than \$50,000. Similarly, nearly two-thirds (65%) of postdocs reported that their current annual *household* income was between \$30,001 and \$75,000; 31% reported current annual household income greater than \$75,000. A few reported annual personal (4%) and household (3%) incomes below \$30,000.

Academic Unit Affiliation. More than three-quarters of the postdocs were affiliated with the Medical School (40%), the College of Literature, Science, and the Arts (24%), or the College of Engineering (13%); 5% of respondents (each) were affiliated with the School of Public Health or the Life Sciences Institute. Other academic units accounted for the remaining 14% of respondents (see Table 1). The response rate by academic unit for this survey closely reflects the breakdown of the University postdocs as a whole. However, in terms of proportions, postdocs affiliated with the Medical School were slightly underrepresented in this survey, and postdocs affiliated with the College of Literature, Science, and the Arts were slightly overrepresented.

Postdoctoral Positions. For three-fourths (75%) of respondents, the UM appointment is their first postdoctoral position; 21% reported that they held one previous postdoctoral position, and 5% held two or more postdoctoral positions prior to their UM appointment. Nearly two-thirds of respondents (64%) reported that they came directly to UM from graduate school; 20% came from another postdoctoral position and 9% came from a non-postdoctoral position. The remaining 7% were looking for work, staying home with children, on family leave, or engaging in other activities.

One-third of postdocs (35%) found this postdoctoral position by contacting their current supervisor at UM directly. Fewer learned of the position from an advertisement in a journal, publication, or website (18%), their doctoral advisor (15%), another colleague (13%), or from their current supervisor (12%); see Table 2. The remaining 7% found out about their current position from a conference job center or career fair, a professional recruiter, or as a dual career hire. Most (69%) were only applying for postdoctoral positions when seeking their current position (and not also applying to other non-postdoc positions).

Three-fourths (75%) of the postdocs indicated that they had been at the University for six months to three years at the time of the survey, and 12% had been at the University for more than three years; see Table 3. A few (13%) indicated that they had been in their current position for fewer than six months. On average, respondents had been at UM for 1.60 years.

Most postdocs (63%) expected to be at the University for another six months to three years, 18% expected to leave in fewer than six months, and 19% expected to stay for more than three years. When asked how many total years they have held a postdoc position, including past and present positions, two-thirds (66%) reported being in a postdoc position for six months to three years, and 26% for more than three years. Few (9%) indicated that they had been in a postdoc position for less than six months.

Employment Status and Sources of Funding. Nearly all (98%) postdocs reported that they are currently employed full-time. Most (62%) indicated that their funding comes from a grant awarded to their supervisor; 12% received funding from University funds, 10% received funding from a U.S. federal fellowship, 8% were supported by a U.S. federal training grant awarded to their department, lab, or center, and 5% had a non-federal fellowship. The remaining 5% received support from other sources; see Table 4.

More than one-third (37%) of the respondents reported that the terms of their postdoctoral position depend on them securing additional funding. More than one-third of all postdocs (39%) also reported that they were aware of options for future funding; 28% indicated that they were not aware, and 33% were not sure.

Degree Completion. Half of the postdocs (55%) completed their doctoral degrees in 2009 or 2010, and one-quarter (25%) received their degrees in 2008 or 2007. The remaining postdocs (21%) earned their degrees earlier. Postdocs who completed their doctoral degrees recently were somewhat overrepresented in this survey, and postdocs who completed their degrees during 2003-2005 were slightly underrepresented.

Career Path and Goals

Reasons for Choosing a Postdoc. Postdocs were asked to rate the importance of eleven reasons for choosing to pursue a postdoc (e.g., opportunity to publish, preparation for a faculty position, collaborative work environment) on a three-point scale (from a low of 'not important' to a high of 'very important'); see Table 5. Based on mean ratings, the most important reasons identified for choosing a postdoc were the opportunity to publish (mean of 2.71), conduct independent research (2.59), and increase knowledge in their field (2.49; 96%, 96%, and 90% of respondents, respectively, rated these as somewhat or very important). The least important reasons were the need for U.S. training to advance their career in their home country (1.49) and opportunity to teach (1.53; 36% and 43% of respondents identified these as being somewhat or very important, respectively).

Reasons for Choosing a Postdoc at UM. Postdocs also rated the importance of nine reasons for electing to do postdoctoral work at the University of Michigan (e.g., prestige of the institution, to work in the same general location as their partner, compensation) on a three-point scale (from a low of 'not important' to a high of 'very important'); see Table 6. Based on mean ratings, the most important reasons were the opportunity to work with a particular researcher, lab, or department (2.57), followed by prestige of the institution (2.33) and a collaborative work environment (2.13; 92%, 89%, and 79% of respondents, respectively, rated these as somewhat or very important). In contrast, they indicated that an active postdoc association and/or career development network and availability of dual career options were the least important reasons

(means of 1.52 and 1.64, respectively; 41% and 46% of respondents, respectively, rated these as somewhat or very important).

Career Paths. Postdocs were asked to identify which career path (e.g., a tenure-track position with an emphasis on teaching, applied research position, position in engineering) they were most interested in pursuing when they started their postdoc, what they hope for when they leave their current position, and what their career goals are for ten years in the future; see Table 7. Half (51%) of postdocs reported that when they first started their current postdoc they were most interested in pursuing a tenure-track faculty position with a focus on research; a similar percentage expected the same to be true when they leave their postdoc position (56%), and slightly fewer saw themselves pursuing such a position ten years out (42%). The second most frequently identified career path was a tenure-track position with an emphasis on teaching: 18% identified that interest when they first started their postdoc position, and one-fifth (20% in both cases) identified this as a goal for when they leave their position and ten years out.

Other career paths were somewhat more highly rated when postdocs considered their expected career paths when they leave their current position compared to when they first arrived. Several identified a non-academic applied research position (23%) and a non-academic basic research position (16%) as being of interest when they leave this position; fewer rated these as career paths they expected to pursue when they first arrived (13% and 10%, respectively) or ten years out (12% and 8%, respectively).

Expected Employer. Postdocs were also asked to identify what type of employer or organization they most expect(ed) to work for (e.g., a national lab, a non-profit organization, an academic institution) when they first started their postdoc, when they leave their current position, and in ten years; see Table 8. Two-thirds of postdocs (64%) reported that, when they first started their postdoc position, they expected their employer to be an academic institution; 62% expected the same when they leave this position, but fewer (48%) anticipated being in an academic institution in ten years.

Fewer anticipated careers in a medical school at an academic institution: 19% expected to work in a medical school when they first started; 23% when they leave their current position; and 15% in ten years. The proportion of postdocs who expected to work in a government agency, a national lab, a non-profit organization, and a for-profit company also increased across the first two time points (when they first started their postdoc position to when they leave this position).

Two-thirds (66%) of postdocs reported that they plan to pursue a career in the United States in the next ten years; 28% were unsure, and 7% do not plan to remain in the United States (6% of these are international postdocs and 1% are domestic postdocs).

Changes in Career Goals. Given the findings above, it is not surprising that nearly one-third (30%) of postdocs indicated that their career goals have changed since coming to the University of Michigan. Those who reported changed plans were asked to rate the extent to which a range of factors (e.g., money, autonomy, loss of engagement with the field) contributed to the change (on a three-point scale from a low of 'not important' to a high of 'very important'); see Table 9. Based on mean scores, respondents indicated that the most important reasons for their change in goals were the desire to integrate work and personal life (2.44), the difficulty in obtaining a desired position (2.32), and concerns about job security (2.25; 91%, 86%, and 82% of respondents, respectively, rated these as somewhat or very important). Postdocs indicated that peer pressure (1.54), loss of engagement with the field (1.68), and change in research direction (1.71) were the least important reasons for their career goal change (57%, 48%, and 46%,

respectively, identified these reasons as not at all important). When asked to identify the single most important reason for changing their career goal using these same factors, none of the factors received a predominant number of responses.

Open-ended Responses Related to Reasons for Changing Career Path. When asked, in an open-ended format, if postdocs had anything else they wanted to share about their career goals, including how they may have changed over time, 86 postdocs responded. The majority of responses broadly related to difficulty and/or disillusionment about prospects of finding a job (34%), including concerns about finding a job in their desired field (e.g., an academic job), dual career or family issues, accessing appropriate training for their job of choice, and finding a job in the geographic location of their choice; see Table 10. A few (12%) expressed concerns about securing research funding, especially from federal funding agencies, and 6% of postdocs mentioned disillusionment about how academia works (specifically, lack of collaboration within academia, few opportunities for research innovation, more time spent on writing grants than conducting research, and personal doubts about the societal impact of their research).

More than one-third (36%) of postdocs indicated that their career goals had changed due to changes in their own interests or plans, rather than concerns about academia. These included: a change in professional interests (e.g., becoming interested in teaching), becoming more flexible and open-minded about career options (including options outside academia), and exposure to new ideas during their postdoc.

One-quarter (24%) of postdocs explained that they already have a job offer or provided details about the specific job they were most interested in.

Attrition in Tenure-track Careers. Postdocs were also asked if they believe that some groups (based on e.g., race-ethnicity, gender, family situation, etc.) of postdoctoral fellows are less likely than others in their unit to pursue a tenure-track career; 30% of postdocs reported this to be true. These postdocs were asked, in an open-ended format, to describe reasons for this attrition, and 144 postdocs responded.

Forty-three percent reported that gender was an issue, specifically, that women may be less likely to pursue a tenure-track career due to family or parenting restrictions and/or because women are excluded and/or isolated from academic opportunities (without any reference to family obligations); see Table 11. Very few postdocs reported that men are less likely to pursue a tenure-track position.

One-quarter (25%) indicated that postdocs with children or partners (without any reference to a specific gender) are less likely to pursue a tenure-track position. Specific reasons included: less time for scholarly work because of family responsibilities, work demands limiting family planning options, insufficient salary for tenure-track positions to provide for a family, difficulty finding academic positions for both partners, and the challenges involved in moving a family for a position.

Twenty-five percent reported that international postdocs are less likely to pursue a tenure-track position given that the lack of U.S. citizenship may exclude them from some jobs and funding opportunities and language limitations can affect their career options and success, particularly in the U.S.

Sixteen percent reported that racial-ethnic minority postdocs are less likely to pursue a tenure-track position, due at least in part to feeling undervalued or because of experiences of bias in

academia; of these respondents, half were women, and about one-third were from each of the racial-ethnic groups (Asian/Asian American, underrepresented minority, and white). In addition, one postdoc mentioned that African Americans were less likely to pursue a faculty position because of the “harsher realities of unemployment,” and another reported that there are “caps on departments for hiring Asian faculty.”

A few postdocs (1%) indicated that individuals from financially disadvantaged backgrounds were less likely to pursue a tenure-track position; they suggested that such postdocs would be less likely to have the educational credentials necessary to secure a tenure-track position and/or would be more likely to pursue positions in industry or government offering higher salaries (compared to starting salaries for tenure-track faculty).

Current Job Satisfaction

Overall Satisfaction with Postdoc Position. Respondents rated their overall satisfaction with their postdoctoral experience at the University of Michigan on a five-point scale (from a low of ‘very dissatisfied’ to a high of ‘very satisfied’); see Table 12. In general, postdocs reported high satisfaction (4.15). The majority of respondents (84%) indicated they were very satisfied or somewhat satisfied; a few reported that they were somewhat (5%) or very dissatisfied (2%).

Postdocs were asked to rate the extent to which they would recommend postdoc training in general to a graduate student in the same field with similar goals and also, specifically, a postdoc at the University of Michigan on a five-point scale (from a low of ‘would not recommend’ to a high of ‘would enthusiastically recommend’); see Table 13. Most (79%) reported that they would recommend or enthusiastically recommend such training in general; few indicated they would recommend with reservation (6%) or would not recommend (3%; 12% were neutral). Postdocs reported similar willingness to recommend postdoc training at UM; 79% of postdocs indicated they would recommend or enthusiastically recommend a postdoc at UM; very few reported they would recommend with reservation (6%) or would not recommend UM for their postdoc training (3%; 12% were neutral).

Work-related Stress. Postdocs rated how stressful their current position at UM is and indicated the extent to which ten work-related activities or experiences were sources of stress for them (e.g., securing funding for research, working relationship with colleagues, searching for next position) on a four-point scale (from a low of ‘not at all stressful’ to a high of ‘extremely stressful’); see Table 14. Overall, postdocs reported that their current position at UM was moderately stressful (2.19). One-quarter (26%) rated it very or extremely stressful, and nearly two-thirds (63%) rated it somewhat stressful. Few (11%) rated their position as not at all stressful.

Based on mean ratings, respondents indicated that the most stressful work-related aspects were scholarly productivity (2.66), search for next position (2.57), and ability to make progress on their own research (2.51; 53%, 51%, and 47%, respectively, indicated these were extremely or very stressful). The least stressful aspects of their positions were the working relationships with people they supervise (1.32) and bias, discrimination, and unfairness in procedures (1.38; 72% and 74%, respectively, indicated these aspects were not at all stressful).

Open-ended Responses Related to Transition to UM Postdoc. Postdocs were queried, in an open-ended format, about their adjustment and transition to their position at UM. Postdocs were asked to think back to when they first came to UM and comment on one or two things that helped them adapt to their environment; 436 postdocs responded. The most frequently mentioned factor reported by 38% of postdocs was the support of their faculty mentor, lab

members, or department (see Table 15). For example, one postdoc said, “Everyone in my lab, including my PI, was...so friendly and accommodating, which made the transition to a new job very easy.” And thirty percent of respondents reported receiving support and advice from current postdocs outside their lab or department, from administrative staff members, and from other University community members.

Eleven percent of postdocs indicated that official University events or programs were helpful with their adjustment. Of these, about half reported that an orientation or single occurrence event, such as a University-sponsored social event, was helpful; the remaining postdocs indicated that an ongoing program or University office (e.g., events offered by the UM Postdoctoral Association, International Center, CRLT, etc.) aided their transition. Thirteen percent reported that they received support from their non-UM social network, including friends and family members.

Seven percent of postdocs reported that a general feature of UM, such as being a strong research institution, helped. For example, one postdoc commented that “the prestige of the institution” was important, and another reported that “decent pay...and an opportunity to teach graduate courses” were beneficial. Twelve percent indicated that their adjustment was eased by having been affiliated with UM previously (e.g., previously attended undergraduate or graduate school at UM) or having previously lived in Michigan, and 9% referenced a personal trait, such as being patient or willing to make compromises, that helped in their transition.

Respondents also identified the following aspects as useful in adjusting to their lives as a postdoc at UM: doctoral training and previous experiences at another institution, such as having spent time in an academic setting (3%); features or amenities of Ann Arbor, such as the bus system (3%); and religious groups or other community activities (2%). Very few postdocs (3%) reported that they are still adjusting to their position at UM.

Open-ended Responses Related to Ways to Improve Transition to a UM Postdoc. Postdocs were also asked to comment on one or two things that the University might have done to make their transition easier, and 344 postdocs responded.

Twenty-two percent of postdocs suggested that the University could have provided better access to basic, logistical information, such as a listing of available programs and resources and how to go about finding housing or obtaining library access (see Table 16); some of these respondents wanted more information about the UM Postdoctoral Association, and a few would have liked more information about visas and international status questions.

Relatedly, thirteen percent indicated that the University could have organized an orientation and/or an orientation packet to help them ease into their postdoc appointments. Eleven percent of postdocs suggested that the University should provide more opportunities to meet other postdocs in a social setting. Six percent reported that being integrated more fully into the department and/or University would have helped their transition. For example, one postdoc wrote, “[The] distinction of whether a postdoc is staff or [a] student is rather murky, and it is somewhat unclear how we fit into the department culture.”

Eleven percent of postdocs reported that financial assistance would have made their transition easier. Of these, specific suggestions included a higher salary or payment promptly after starting their position, assistance with moving expenses, and more startup research funding. A few postdocs also suggested that receiving assistance managing their relationship with their mentor and/or receiving better mentoring (3%), better administrative support (3%), more support

for their partner's move to Ann Arbor (e.g., help finding a job; 2%), and reducing the amount of new hire paperwork (2%) would have eased their transition to UM.

One-third (35%) had no suggestions for things the University could do to improve their transition.

Current Job Experiences

Workload. Postdocs were asked to evaluate the amount of control they have over their workload, as well as its reasonableness, and the number of hours worked per week. Control over workload was rated on a three-point scale (from a low of 'none' to a high of 'a lot'). Overall, postdocs reported a generally high level of control (2.60). Nearly two-thirds of postdocs (64%) indicated that they have a lot of control over their workload; however, 33% indicated that they have a little control, and 4% reported that they have no control.

Reasonableness of their workload was rated on a five-point scale (from a low of 'much too light' to a high of 'much too heavy'). Postdocs reported a fairly reasonable workload (3.22). Three-fourths of postdocs (75%) reported that their workload was 'about right'; fewer indicated that their workload was too heavy (20%), and very few described it as much too heavy or as too light (2% in both cases). Two-fifths of postdocs (39%) reported working 40-49 hours per week, followed by 33% who work 50-59 hours, and 18% who work 60 hours or more per week; 9% reported working fewer than 40 hours per week.

Postdocs were also asked to report the proportion of time they allocated to work on postdoctoral-related tasks and activities each week. Most postdocs reported allocating 76-100% (63%) or 51-75% (20%) of their time to research; 17% reported allocating one-half or less of their time to research (see Table 17). Half of postdocs (48%) reported spending 1-25% of their time mentoring students; 49% allocated no time to this activity. Similarly, half (52%) allocated 1-25% of their time to professional development; 44% reported spending no time on professional development. Few (14%) reported allocating any time to teaching.

Productivity. Postdocs were asked to indicate the types and frequency of publications (e.g., papers published in conference proceedings, peer-review journals, book chapters) since beginning their position at UM. Nearly one-third (30%) have published between one and three papers in conference proceedings, and 10% published four or more conference papers; 60% have not published a paper in a conference proceeding while a postdoc at UM (see Table 18). Nearly three-fifths of postdocs have authored or coauthored between one and three (40%) or four or more (16%) presentations at regional, national, or international conferences, and 44% have presented none. A similar proportion (40%) reported between one and three articles published or accepted for publication in a peer-review journal, 12% published four or more articles, and 48% have published none. Half of postdocs have submitted between one and three (47%) or four or more (4%) articles for publications in a peer-reviewed journal that have not yet been accepted for publication; 49% have submitted no articles that have not yet been accepted for publication. Fifteen percent of postdocs indicated that they have published one or more books or book chapters, and 85% have published none.

Professional Development Opportunities. Postdocs were asked to indicate whether or not they had the opportunity to engage in five professional development activities (e.g., taught courses or delivered lectures as part of a course, served as a reviewer for a conference, journal, or an agency, institution, or organization). Two-thirds of postdocs reported that they have supervised or directed research activities of undergraduates, graduate students, or technical staff (68%) and worked with researchers who were not part of their department or lab (63%); see Table 19.

Half reported that they have prepared grant proposals (56%) or served as a reviewer for a conference, journal, or an agency, institution, or organization (51%). One-quarter (27%) indicated that they have taught courses or delivered lectures as part of a course.

Skill Enhancement. Postdocs rated the extent to which their postdoctoral position at the University of Michigan enhanced their skills as researchers, educators, and job applicants (e.g., learning time management, working in a team, understanding how academic organizations work) on a three-point scale (from a low of 'not at all' to a high of 'to a great extent'); see Table 20. Based on mean scores, postdocs identified the following as most enhanced: fostering critical thinking (2.33), keeping up with current advances in the field (2.33), writing papers for publication (2.32), knowing the latest research techniques (2.31), and presenting research results to peers (2.28). Postdocs reported the least development in the areas of interviewing (1.46) and preparing resumes (1.52) for different kinds of job searches and teaching (1.47).

Postdocs were also asked if their present postdoc position at UM is preparing them adequately for their current career goals on a five-point scale (from a low of 'strongly disagree' to a high of 'strongly agree'). Overall, postdocs reported moderately high agreement (3.98); 77% reported somewhat to strong agreement, 14% were neutral, and 9% reported somewhat to strong disagreement.

Suggestions to Enhance Career Preparation. Postdocs were asked, in an open-ended format, to comment on one or two things that UM should consider doing to enhance their career preparation; 279 postdocs responded. Twenty percent suggested that UM could offer better training opportunities, including sessions focused on grant writing, teaching, professional development, field specific content and specialized techniques, and English as a second language; see Table 21. Similarly, twenty percent of postdocs mentioned that workshops or resources specifically related to career development, job preparation, or job searching would enhance their career preparation. Of these, some postdocs mentioned that such events or information should be presented at the beginning of postdocs' time at UM. A few (10%) indicated that receiving support, information, and/or workshops related to non-academic career options, such as careers in industry, would be useful.

Sixteen percent of postdocs reported that more professional opportunities would be helpful, including opportunities to teach, publish, present research, attend conferences, and apply for grants. Twelve percent suggested more funding for research-related activities and/or for personal support.

Postdocs also reported that additional networking opportunities (9%), opportunities for additional mentoring and better training of mentors (8%), better promotion of existing resources and workshops (6%), more administrative and logistical support from administration and staff members (5%), and support for immigration issues (5%) would enhance their career preparation at UM. Lastly, one-quarter (24%) indicated that there was nothing more UM could do to support their career preparation.

Climate. To assess the overall climate for postdoctoral fellows, respondents were asked to rate their level of agreement with sixteen statements related to their experiences within their unit and the University more generally (e.g., colleagues value my research/scholarship, I have colleagues at UM who are my personal friends, my department/lab/center is a good fit for me) on a five-point scale (from a low of 'strongly disagree' to a high of 'strongly agree'); see Table 22.

Postdocs reported a generally positive climate. The majority reported that their supervisor helps them obtain the resources they need and creates opportunities for them to gain experience and that their colleagues value their research/scholarship (85%, 82%, and 81% somewhat agreed or strongly agreed, respectively). At the same time, one-quarter indicated that they feel excluded from their lab's or department's informal network (23%; 25% were neutral) and that they have to work harder than others to be perceived as a legitimate scholar (29%; 26% were neutral). Some (18%) also disagreed that they have a voice in decision-making in their unit or lab (20% were neutral on this item). In addition, a few postdocs reported that they have been harassed or have been subject to inappropriate or disrespectful language while a postdoc at UM (9% agreed in both cases).

Open-ended Suggestions for Enhancing the Postdoc Community. Postdocs were asked, in an open-ended format, what one or two things UM should consider doing to enhance the community for postdocs at UM, and 274 postdocs responded. The most frequently cited response, mentioned by 41% of postdocs, was that more networking and professional development events would be helpful. Twenty-one percent reported that better financial support, benefits, or amenities would improve the UM postdoc community, including providing retirement benefits, less expensive and/or more accessible childcare, increased salary, and more funding for research and/or conferences (see Table 23). Twelve percent suggested better communication and information-sharing with postdocs; ideas included organizing an orientation for incoming postdocs, providing information about events and resources online in a single location, and providing more information about the UM Postdoctoral Association.

Postdocs also suggested that UM could enhance the community for postdocs by improving mentoring and decreasing workload (6%), encouraging more inclusion of international postdocs at events (7%), and by integrating postdocs' family members into the larger postdoc community (2%). Twelve percent of postdocs reported that there was nothing more UM could do to improve the postdoc community.

Supervision and Mentoring

Sources of Advice. Postdocs were asked to rate the extent to which they rely on seven different sources or people for career development advice (e.g., current supervisor, doctoral advisor, postdoctoral career development program) on a three-point scale (from a low of 'not at all' to a high of 'to a great extent'); see Table 24. Respondents reported relying on their current supervisor (2.28) the most for career development advice, followed by their peers and doctoral advisor (1.93 in both cases). Career counselors (1.14) and a postdoctoral career development program (1.26) were reportedly used least frequently (88% and 77% reported not using these services at all, respectively).

Research Group Colleagues and Supervision. Three-fourths of respondents (75%) reported that there are other postdocs in their research group, and more (81%) indicated that they have colleagues other than faculty or postdocs in their research group whom they consider colleagues. Nearly all (95%) reported that they are supervised by a faculty member; 3% are supervised by a senior researcher who is not faculty, and 2% are supervised by other members of the University community or by no one.

Respondents rated their level of satisfaction with the amount and quality of contact with their supervisor; see Table 25. Postdocs reported moderate to high levels of satisfaction with both the amount (3.98) and quality (3.79) of supervisor contact on a five-point scale from 'very dissatisfied' to 'very satisfied.' Three-quarters (73%) indicated that they were very or somewhat satisfied with the amount of contact with their supervisor; 16% were very or somewhat

dissatisfied. Fewer (68%) reported that they were very or somewhat satisfied with the quality of contact with their supervisor, and 21% were very or somewhat dissatisfied.

Support from Supervisor and UM in Career Development. To assess their relationships with their current supervisor and other sources of career advice at UM, postdocs were asked to indicate their level of agreement with five statements (e.g., my supervisor would support me in any career path I choose, I have received information from UM sources other than my supervisor on career options outside of academia) on a five-point scale (from a low of 'strongly disagree' to a high of 'strongly agree'); see Table 26. Respondents reported highest agreement with the following items: my supervisor would support me in any career path I choose (4.15), and I have received advice from my supervisor on career options within academia (3.79); 80% and 67%, respectively, agreed with these statements. Postdocs were least likely to agree that they have received advice from their supervisor (2.66) or from UM sources other than their supervisor (2.85) on career paths outside of academia; only 30% and 35%, respectively, agreed, and one-quarter each were neutral.

Performance Evaluations. Postdocs were asked to indicate if they have received written, oral, or informal performance evaluations. Over one-half of postdocs (54%) reported that they have received at least one type of performance evaluation. Of those who have received any form of performance evaluation, two-thirds (69%) reported that their supervisor had initiated it, and 31% reported that they had initiated it.

Those postdocs (54%) who received written or oral performance evaluations were asked to indicate how many evaluations they have received in total while a postdoc at UM. Of postdocs who have received at least one type of performance evaluation and who have held a postdoc appointment at UM for one year or less, 48% reported that they have received one evaluation, 24% have received two, and 28% have received three or more. Of those who have held a postdoc appointment at UM for one to three years, more than one-third (36%) reported that they have received one evaluation; 32% have received two evaluations, and 33% have received three or more written or oral performance evaluations. Nearly one-third (29%) of postdocs who have held an appointment at UM for more than three years reported that they have received only one written or oral performance evaluation, and one-quarter have received two evaluations; the remaining 46% have received three or more performance evaluations.

Career Development Plans. Postdocs were also asked to indicate if they have discussed with their supervisors how they will work together for successful mentoring. Nearly three-fifths of postdocs (57%) reported that they have, and of those, 22% have a written mentoring agreement and/or career development plan. These postdocs were subsequently asked to rate how useful they have found the written agreement on a five-point scale (from a low of 'not at all useful' to a high of 'very useful'). Nearly half (46%) reported that their plans were somewhat or very useful; 20% described them as not at all or not very useful, and 34% were neutral.

Knowledge of and Access to Resources

Help with Problems. Postdocs were asked whether or not they knew who to go to for help if they had a problem. More than half (56%) reported that they did not. Those who reported knowing who to go to for help were asked to rate their level of confidence that their problem would be resolved fairly on a five-point scale (from a low of 'not at all confident' to a high of 'very confident'). Overall, these postdocs reported moderate confidence in a fair resolution. Nearly two-thirds (63%) reported that they were somewhat or very confident that their problem would be resolved fairly; 10% reported very little or no confidence, and 28% were neutral.

Postdocs were also asked to identify their level of awareness of grievance and/or mediation procedures at UM on a three-point scale (from a low of 'not at all aware' to a high of 'very aware'); see Table 28. Two-thirds of postdocs (66%) indicated that they were not at all aware of such procedures at UM; 31% were somewhat aware, and 2% were very aware.

General Services and Resources. Postdocs also indicated their level of awareness and use of nine services and resources at UM (e.g., on-campus childcare services, International Office, Center for the Education of Women) and were provided three response options ('not aware of resource,' 'aware of resource, have not used it,' and 'aware of resource, have used it'). Those who indicated they had utilized the services and resources were also asked to rate the quality of their experience on a five-point scale (from a low of 'poor' to a high of 'excellent'); see Table 27.

Overall, few postdocs reported that they were both aware of and have used the nine resources (with a range of 4% to 34% who reported using a service or resource). Specifically, one-third of postdocs reported that they have used the International Office (34%); about one-fifth reported using the UM Postdoctoral Association (23%), CRLT teaching skills training (21%), and the career development workshops from other UM sources (21%). Nearly half of the postdocs were aware of, but had not made use of, on-campus childcare services (48%) and the Office of Postdoctoral Studies (44%); few (7% and 8%, respectively) reported that they have used these resources. Moreover, a majority of postdocs (79%) were not aware of the Faculty and Staff Assistance Program, and more than half reported they were not aware of the Center for the Education of Women (58%) or career development workshops in their unit (54%).

Overall, postdocs who had utilized a service or resource at UM reported, in general, having very good experiences. Based on mean ratings, postdocs reported the highest quality of experiences for on-campus childcare services (4.32, N=37), CRLT teaching skills training (4.15, N=136), Center for the Education of Women (4.10, N=31), and the International Office (4.09, N=199). They indicated that the Office of Postdoctoral Studies (3.67; N=42) and the UM Postdoctoral Association (3.71, N=140) were somewhat less helpful.

Resources Specific to Postdocs. Postdocs were also asked about their awareness of three resources specific to UM postdoctoral fellows: the UM Postdoctoral Association website, the Office of Postdoctoral Studies' Postdoctoral Fellow Handbook, and the newly revised personnel policy that applies specifically to postdocs (Standard Practice Guide, SPG 201.19) on a three-point scale (from a low of 'not at all aware' to a high of 'very aware'); see Table 28. In general, postdocs reported low levels of awareness of these resources. The majority of postdocs were not at all aware (81%) or only somewhat aware (17%) of the newly revised University personnel policy that applies to postdocs. In addition, three-fifths of postdocs were not at all aware (59%) or were only somewhat aware (33%) of the Office of Postdoctoral Studies' Postdoctoral Fellow Handbook. More than half were somewhat (46%) or very (13%) aware of the UM Postdoctoral Association website; 40% were not at all aware.

Benefits. Postdocs were asked to describe their current health and dental insurance situation and to indicate their awareness of various UM policies and benefits. Most postdocs reported that they receive health and dental insurance through UM (89% and 88%, respectively); see Table 29. Some reported such coverage through their partner's employer (6% for both health and dental insurance) or through a sponsor (3% for both health and dental insurance). Fewer than 1% of postdocs reported that they do not have health insurance, and 4% of postdocs reported that they do not have dental insurance.

Postdocs were asked to rate the extent of their interest in receiving retirement benefits from UM on a three-point scale (from a low of 'not at all interested' to a high of 'very interested'). Over one-half of postdocs (56%) indicated that they were very interested; the remaining were somewhat (32%) or not at all interested (11%).

Postdocs were also asked if they were aware of UM policies about postdocs taking paid time off for childbirth/adoption. Only one-quarter of postdocs (27%) indicated that they knew about the policies. Fourteen percent of postdocs indicated that they had taken time off for childbirth/adoption; however an identical percentage reported that they were not able to take this time off (the remaining 72% of postdocs reported this was not applicable to them).

Work-Life Balance

Satisfaction with Outside Life and Work-Life Balance. Postdocs rated their satisfaction with their life outside of UM and work-life balance on a five-point scale (from a low of 'very dissatisfied' to a high of 'very satisfied'); see Table 30. Postdocs reported moderately high overall satisfaction with life outside UM (4.06; with 81% of postdocs being somewhat to very satisfied). Fewer postdocs reported satisfaction with the ability to integrate the needs of work with personal/family life (3.50; 60% of postdocs were somewhat to very satisfied).

Work Flexibility. To assess their ability to balance work and personal responsibilities and demands, postdocs were asked to indicate their level of agreement with three statements (e.g., demands at home limit my professional activities, my current work schedule provides flexibility to take care of demands at home, my supervisor understands when demands at home impact my professional responsibilities) on a five-point scale (from a low of 'strongly disagree' to a high of 'strongly agree'); see Table 31. Nearly three-fourths of postdocs agreed that their supervisor understands when demands at home impact their professional responsibilities (3.97; 73% somewhat or strongly agreed); similarly, 69% agreed that their current work schedule provides flexibility to take care of needs at home (3.77). Few (9% and 15%, respectively) disagreed with these statements. One-half of postdocs (51%) disagreed that their demands at home limit their professional activities; however, 31% of postdocs reported some level of agreement with this item (mean of 2.56).

Life Stresses. Postdocs were asked to indicate the extent to which ten aspects of their life outside UM (e.g., balancing work and family responsibilities, cost of living, childcare) are currently sources of stress for them on a four-point scale (from a low of 'not at all stressful' to a high of 'extremely stressful'); see Table 32. Based on mean ratings, postdocs reported the most stressful aspects of their life outside UM were balancing work and family responsibilities (2.18) and the situation of their partner (e.g., job situation, living in another city; 2.17). Taking care of someone who is ill, disabled, aging, and/or in need of special services and their own health were rated as the least stressful aspects of their life outside of UM (1.51 and 1.62, respectively).

Additional Comments

When given an opportunity to provide additional comments about their experiences as a postdoc at the University of Michigan, a total of 87 postdocs responded. The most frequently articulated theme, mentioned by 37% of postdocs, was related to benefits and salary at UM. Of these, seven addressed the need for retirement benefits. Five postdocs argued for increased salaries for postdocs, and four raised issues related to taking time off for maternity or sick leaves. Specifically, three postdocs suggested that maternity leave policies should be University-wide and transparent; two reported that they were told that there was no maternity leave, and another was limited to three weeks off. Four postdocs expressed concerns specific to childcare; of these, two noted that childcare was too expensive given their current salary. Three

postdocs mentioned concerns about health and dental insurance and suggested that postdocs should have a plan similar to that provided to graduate students. Two postdocs expressed concerns about ancillary career-related costs, specifically, lack of conference funding and/or tuition. Lastly, six postdocs listed other problems related to benefits, such as payroll deductions, parking passes, and/or moving expenses.

Thirteen percent of postdocs mentioned situation-specific problems or complexities. Of these, postdocs mentioned: department specific issues, such as feelings of isolation and/or competitiveness within the department, and advisor specific problems, such as too much monitoring and/or not being treated as a colleague.

Twelve percent of postdocs reported University-wide policy problems. Of these, postdocs noted lack of regulations and contracts related to workload, lack of administrative assistance and support (for example, one expressed frustration dealing with red tape and/or administrative paperwork), and academic related issues, such as suggesting that the University should “take a more active role in ensuring that its graduates and postdocs get good faculty placements at R1 institutions.” Lastly, two postdocs mentioned general concerns that the University does not value postdocs.

Six percent of postdocs commented on international concerns and issues, including problems with green card or visa issues as well as the need for additional funding and more English training for international postdocs. Three percent described issues related to work-life balance and preparing for the academic market.

In addition, 15% of postdocs reported other concerns; specifically, three suggested more networking and socializing for postdocs, and two suggested that information and training opportunities should be made more accessible; two mentioned that their perspective may differ from others in the survey because of disciplinary/departmental differences (e.g., STEM vs. non-STEM department). One postdoc each reported: the most stressful aspect of postdoc life was living away from his/her partner; that s/he is dissatisfied with career counseling opportunities; and the UM bus system is great.

A final theme, mentioned by 18% of postdocs, was appreciation for their current position. These respondents mentioned that their experience as a postdoc was invaluable and/or a great decision and that they valued the resources at UM, such as research facilities and/or postdoc associations and support.

GROUP COMPARISONS

Differences between Postdocs Based on Group Membership

Analyses were also conducted to compare responses of different groups of postdocs in our sample. Comparisons were run by gender (women vs. men) and race-ethnicity (specifically U.S. citizens and permanent residents who are underrepresented minorities (URM), Asian American, vs. white). For these analyses, we defined URM as Hispanic/Latino/a, Native American/American Indian, and African American. Differences by citizenship status were also examined, comparing international postdocs vs. domestic postdocs (U.S. citizens and permanent residents). Lastly, we made comparisons between the postdocs in the Medical School vs. all other postdocs, given that so many of the postdocs represented in the sample reside in the Medical School. Results by groups are reported below.

Only statistically significant differences are reported; these refer exclusively to differences found to be statistically different ($p \leq .05$ —that is, differences or effects that would have occurred by

chance under the null hypothesis at or less than five percent of the time, which is a generally accepted standard of statistical significance in social science research).

Gender: Women vs. Men Postdocs

Description of Participants. Women were less likely than men to report that their partner does not work outside of the home. They also reported higher annual household income from all sources.

Career Path and Goals. Women were more likely than men to report that they have changed their career path goals since coming to UM for a postdoc and to identify the desire to integrate work and personal life as an important reason for this change. They were less likely to report that when they leave their current postdoctoral position, they are interested in pursuing a tenure-track position with an emphasis on research. In addition, women were more likely to report that they believe some groups (based on e.g., race-ethnicity, gender, family situation, etc.) of postdoctoral fellows are less likely than others in their unit to pursue a tenure-track career.

Women were less likely to indicate the need for U.S. training to advance their career in their home country (fewer women than men were from another country) and more likely to indicate that a collaborative work environment was an important factor in their decision to choose a postdoctoral position generally. Moreover, women were more likely to indicate that working in this geographic area, working in the same general location as their partner, and a collaborative work environment were important to their decision to choose a postdoctoral position at UM.

Current Job Satisfaction and Experiences. Women were more likely to identify bias, discrimination, and unfairness in procedures, as well as scholarly productivity, ability to make progress on their own research, working relationship with their supervisor, and identifying long-term career goals as stressful.

They were less likely to report that their current position has enhanced their skills in knowing the latest research techniques and more likely to report enhanced skills in supervising others and teaching. Moreover, they were more likely to indicate that, since the beginning of their postdoctoral position at UM, they have supervised or directed research activities of undergraduates, graduate students, or technical staff.

Women were less likely to agree that their unit's procedures are fair and equitable to all and are transparent and open for discussion and more likely to report that they have been subject to inappropriate or disrespectful language while a postdoc at UM.

Supervision, Mentoring, and Resources. Women were less satisfied with the amount of contact they have with their supervisor and with the quality of guidance/mentoring they receive from their supervisor. They were also less likely to agree that their supervisor would support them in any career path they choose and that they have received advice from their supervisor on career options within academia.

Women, compared to men, were more likely to report that they were aware (whether they used the resource or not) of CRLT teaching skills training and the Center for the Education of Women (and three-fourths of all postdocs indicated they were not aware of the latter resource); in contrast, they reported less awareness of career development workshops from other UM sources. For postdocs who were aware of and used the Faculty and Staff Assistance Program (FASAP), women rated their experience with this resource as lower in quality.

Women were more likely to be aware of the University policies about postdocs taking paid time off for childbirth or adoption and to indicate an interest in receiving retirement benefits during their postdoctoral appointment if the University offered them. They were less likely to be covered by dental insurance.

Work-Life Balance. Women were more likely than men to report stress related to managing household responsibilities, childcare, and having a lack of time to think and reflect and were less satisfied with their ability to integrate the needs of their work with those of their personal and/or family life.

RACE-ETHNICITY: Domestic White vs. Asian American vs. URM Postdocs

For these analyses, we compared the responses of three race-ethnicity groups: domestic Asian American, URM (including Black, Hispanic, and Native American), and white postdocs.

Description of Participants. URM postdocs were less likely than white postdocs to report that their partner works in the area. Asian American postdocs were more likely than both white and URM postdocs to report that they have children living with them. In addition, Asian American and URM postdocs were more likely than white postdocs to report that they have children not living with them for whom they have childcare responsibilities.

Asian American postdocs were less likely than white postdocs to report that they are working full-time as a postdoc, and they were more likely than URM and white domestic postdocs to report that the terms of their postdoctoral appointment depend on them securing funding.

URM postdocs were more likely than Asian American and white domestic postdocs to report that their primary source of funding for their current postdoctoral position was from non-University and non-governmental sources and reported higher annual personal income than white postdocs. Both URM and white postdocs were more likely than Asian American postdocs to report that they were aware of options for future funding as a postdoc.

Career Path and Goals. Asian American postdocs were more likely than white postdocs to report that an active postdoc association and/or career development network were important factors in their decision to choose a postdoctoral position generally.

Compared to Asian American postdocs, both white and URM postdocs were more likely to report that they expected to work at an academic institution both when they first started their position and when they leave their current postdoctoral position.

URM postdocs were more likely than white and Asian American postdocs to report that they expected to work in a non-academic applied research position in the future. Moreover, they were less likely than white postdocs to report that their postdoc positions were adequately preparing them for their current career goals.

Current Job Satisfaction and Job Experiences. Asian American postdocs reported a greater number of published papers in conference proceedings than both white and URM postdocs and were more likely than both groups to report that their current position enhanced their teaching skills. In contrast, both white and URM postdocs were more likely than Asian American postdocs to report that their current position has enhanced their skills in becoming an authority in their field.

Compared to white postdocs, URM postdocs were less likely to report that they have taught courses or delivered lectures as part of a course and were more likely to report that their skills in working in a team, understanding how an academic organization works, selecting research problems, and learning time management have improved during their time at UM

Compared to white postdocs, Asian American postdocs were more likely to agree that they have been harassed while a postdoc at UM, and URM postdocs were more likely than white postdocs to agree that they have been subject to inappropriate or disrespectful language while a postdoc at UM.

Supervision, Mentoring, and Resources. Asian American postdocs were more likely than white postdocs to agree that they have received advice from their supervisor on career options outside of academia and to report that they rely on career counselors for advice. In contrast, URM postdocs were more likely than Asian American postdocs to indicate that they rely on senior colleagues outside of UM for career development advice.

URM postdocs were more likely than white postdocs to report that they have discussed how they will work together for successful mentoring with their supervisor. White postdocs were more likely than both groups to have initiated a performance evaluation from their supervisor.

Compared to URM postdocs, white postdocs were more likely to report that they were aware (whether they used the resource or not) of on-campus childcare services; they were also more likely to report that they receive dental insurance through their partner than both groups of postdocs.

Work-Life Balance. Compared to white and Asian American postdocs, URM postdocs were less likely to report stress related to balancing work and family responsibilities and were less likely to report stress related to household responsibilities compared to their white peers. In contrast, they were more likely to report stress related to immigration matters (even though they were all domestic postdocs).

CITIZENSHIP: Domestic vs. International Postdocs

Description of Participants. International postdocs, compared to domestic postdocs, reported more total years spent in all postdoc positions (including UM) and more expected years in their current postdoc position; they were also less likely to report that within the next ten years they planned to pursue a career in the U.S.

In addition, international postdocs were less likely to report that they applied for non-postdoc positions while applying for postdoc positions and were more likely to report that the term of their postdoc appointment depends on them securing funding.

International postdocs were less likely to indicate that their partner works in the area and were more likely to report that they have children not living with them for whom they have childcare responsibilities. They also reported lower annual personal and household income from all sources. In addition, international postdocs were less likely to report that their primary source of funding for their current postdoctoral position was from University funds (e.g., fellowship, instructors).

Career Path and Goals. International postdocs were more likely than domestic postdocs to identify the opportunity to increase knowledge in their doctoral field of study, the need for U.S. training to advance their career in their home country, an active postdoc association and/or

career development network, and availability of dual career opportunities as important factors in their decision to choose a postdoctoral position in general. They were also more likely to report that the opportunity to work and/or conduct research with a particular researcher, lab, or department and the active postdoc association and/or career development network were important factors in their decision to choose a postdoctoral position at UM; working in the geographic area and in the same general location as their partner were less relevant to their decision to choose a postdoctoral position at UM.

International postdocs were less likely to report that their expected employer was an academic institution when they first started their postdoctoral position, when they leave their current postdoctoral position, and in ten years. They were also less likely to report that when they first started their postdoctoral position they were interested in pursuing a tenure-track position with an emphasis on teaching. Moreover, international postdocs were also less likely to report that they have changed their career path goals since coming to UM and to rate geographic preference and integrating work and personal life as important reasons for their change in career goal; in contrast, they were more likely to rate peer pressure and the best option for pursuing new ideas as important.

Current Job Satisfaction and Experiences. International postdocs were less likely to rate their current postdoctoral position at UM as stressful and, in particular, were less likely to identify scholarly productivity and searching for their next position as stressful. In contrast, they were more likely than domestic postdocs to rate advising responsibilities as stressful.

Compared to domestic postdocs, international postdocs reported less control over their workload. They also indicated fewer papers that they have (co)authored for presentations at conferences and articles that have been submitted for publication in a peer-reviewed journal that have not yet been accepted for publication.

In terms of professional development opportunities, international postdocs were less likely to report that they have supervised or directed research activities of undergraduates, graduate students, or technical staff as a postdoc at UM, taught courses or delivered lectures as part of a course, worked with researchers not a part of their department or lab, served as a reviewer for a conference, journal, or an agency, institution, or organization, or prepared grant proposals.

International postdocs were also less likely to report that their current position has enhanced their skills in becoming an authority in their field, writing papers for publication, presenting research results to an audience of peers, writing grant proposals, supervising others, teaching, understanding how an academic organization works, understanding their discipline outside of UM, negotiating with people in authority, fostering critical thinking, selecting research problems, and learning time management. In contrast, they were more likely to report that their skills in preparing resumes for different job types were improved.

International postdocs were less likely to agree that their colleagues value their research and/or scholarship, that they have a voice in the decision-making that affects the direction of their unit or lab, that their unit or lab is a place where postdocs may comfortably raise personal and/or family responsibilities when scheduling obligations, or that their supervisor creates opportunities for them to gain experience (e.g., to attend conferences, write grants, network). They were also more likely to agree that they have to work harder than some of their colleagues to be perceived as a legitimate scholar, that they have been harassed while a postdoc at UM, and that they have been subjected to inappropriate or disrespectful language while a postdoc at UM.

International postdocs were more likely than their domestic colleagues to report that their unit's or lab's procedures are transparent and open for discussion.

Supervision, Mentoring, and Resources. International postdocs were less likely to report that they have received either a formal or informal written or oral performance evaluation as a postdoc at UM. They were also less likely than domestic postdocs to agree that they have received advice from their supervisor and other sources at UM on career options within academia. Moreover, they were less likely to indicate that they rely on senior colleagues outside of UM, peers, and their doctoral advisor for career development advice—and were more likely to indicate that they rely on a career counselor and the postdoctoral career development program. International postdocs were less likely than domestic postdocs to report satisfaction with the amount of contact they have with their supervisor.

International postdocs were less likely to report that they were aware (whether they used the resource or not) of CRLT teaching skills training, the Center for the Education of Women, and career development workshops from other UM sources; in contrast, they were more likely to report that they were aware of the International Office and the UM Postdoctoral Association. They expressed less confidence that their problems would be resolved fairly if they did go to someone for help. For postdocs who were aware of and used the Faculty and Staff Assistance Program (FASAP), international postdocs rated their experience with this resource as higher in quality.

International postdocs were more likely to report that they receive health insurance through a sponsor. They were less likely to have taken time off for childbirth and/or adoption, and they expressed less interest in receiving retirement benefits from UM.

Work-Life Balance. International postdocs reported more satisfaction than domestic postdocs with their ability to integrate the needs of their work with those of their personal and/or family life; however, they were less likely to agree that their current work schedule provides sufficient flexibility to take care of demands at home. They were more likely to report stress related to balancing work and family responsibilities, managing household responsibilities, the situation of their partner, and caring for someone who is ill, disabled, aging, and/or in need of special services as well as with issues related to immigration matters.

SCHOOL AFFILIATION: Medical School vs. All Other Postdocs

Description of Participants. Postdocs in the Medical School, compared to postdocs in all other departments, reported more total years spent in all postdoc positions (including UM), more total years spent in their current postdoc position, and more expected years in current position. They were less likely to report that they applied for non-postdoc positions when applying for postdoc positions or that they were aware of options for future funding as a postdoc.

Medical School postdocs were more likely to report that they have a partner and children living with them; their partner was less likely to be enrolled in school. They also reported lower annual personal income. In addition, Medical School postdocs were less likely to report that their primary source of funding for their current postdoctoral position was from University funds (e.g., fellowship, instructors).

Career Path and Goals. Medical School postdocs were more likely than postdocs in all other fields to identify the opportunity to publish, opportunity for training outside of their doctoral field, needing training in the U.S. to advance their career in their home country, working in a collaborative work environment, and availability of dual career opportunities, and less likely to

identify the lack of availability of other positions, as important factors in their decision to pursue a postdoc. They were also more likely to report that the success of their current supervisors' former students and postdocs, the prestige of the institution, working in this geographic area, working in the same general location as their partner, an active postdoc association and/or career development network, the collaborative work environment, and the availability of dual career opportunities were important factors in their decision to choose a postdoctoral position at UM.

Medical School postdocs were less likely to report that when they first started their current postdoctoral position they were interested in pursuing a tenure-track position with an emphasis on research; the same was true when they predicted their future career goals. They were also less likely to express an interest in pursuing a tenure-track faculty position with an emphasis on teaching in the future. Moreover, Medical School postdocs were more likely to expect to work in a medical school across all three points in time and were less likely to expect that their future employer would be an academic institution both when they leave their current position and in ten years.

Current Job Satisfaction and Experiences. Postdocs in the Medical School were more likely than postdocs in all other departments to rate securing research funding as a stressful aspect of work. They were less likely to rate searching for their next position as stressful.

Compared to postdocs in other departments, postdocs in the Medical School reported less control over their workload. They indicated a greater number of papers that they have published in conference proceedings.

In terms of professional development opportunities, Medical School postdocs were less likely to report that they have taught courses or delivered lectures as part of a course or have served as a reviewer for a conference, journal, or an agency, institution, or organization. They were more likely to report that their current position has enhanced their skills in the latest research techniques, presenting research results to an audience of peers, working in a team, understanding the principles of ethically conducting research, keeping up with current advances in the field, fostering critical thinking, and selecting research problems. Moreover, they were less likely to agree that they have to work harder than some of their colleagues to be perceived as a legitimate scholar.

Supervision, Mentoring, and Resources. Postdocs in the Medical School were more likely than postdocs in all other fields to indicate that they rely on senior colleagues in the department or lab (other than current supervisor) and the postdoctoral career development program for career development advice and were less likely to rely on their doctoral advisor and senior colleagues outside of UM. They were also less likely to agree that they have received career advice from their supervisor on career options within academia and more likely to agree that they have received advice from sources at UM other than their supervisor on career options within and outside of academia.

Medical School postdocs were more likely than other postdocs to report that they have discussed successful mentoring with their supervisor and have received a written or oral performance evaluation during their postdoctoral position at UM. They were also more likely to report working with other colleagues (excluding faculty and other postdocs) in their research group.

Compared to postdocs in all other fields, postdocs in the Medical School were more likely to report that they are aware of (whether they used the resource or not) the Center for the Education of Women (CEW), career development workshops in their unit, career development workshops from other UM sources, the UM Postdoctoral Association, the Office of Postdoctoral Studies, and on-campus childcare services; in contrast, they were less likely to report that they were aware of the International Office. They were also more aware of the University policies about postdocs taking paid time off for childbirth and/or adoption, mediation and grievance procedures at UM, the UM Postdoctoral Association website, Office of Postdoctoral Studies' Postdoctoral Fellow Handbook, and the revised University personnel policy.

Work-Life Balance. Medical School postdocs were more likely than postdocs in other fields to indicate stress related to the cost of living and immigration matters (nearly half of all Medical School postdocs were from other countries). They were less likely to agree that their current work schedule provides flexibility to take care of demands at home.

SUMMARY

Most postdocs reported satisfaction with their appointment at UM and indicated that their position is preparing them for their future careers; however, URM postdocs were less likely to report the latter and international postdocs were less likely to report that the position facilitated skill development. Moreover, international and Medical School postdocs were more likely to express little control over their workload. Part of the training postdocs receive includes teaching, and two-thirds have supervised students' research, and one-quarter have done some formal teaching. Women were more likely to report teaching experiences; URM, Medical School, and international postdocs were less likely to have had any formal teaching experience. Half of the postdocs have not published journal articles or submitted any for publication during their time at UM.

About half of the postdocs expected to pursue a tenure-track position with a focus on research; slightly fewer expected the same in ten years. URM and international students were less likely to anticipate working in academia in ten years. One-third of all postdocs had changed their career goals since arriving at UM in response to concerns about balancing work and family demands and finding a desired and secure position. Women were more likely than men to have changed their career goals and to identify the desire to integrate work and personal life as the reason and to report identifying long-term career goals as stressful.

Nearly all postdocs were supervised by a faculty member, and they generally reported moderate to high levels of satisfaction with both the amount and the quality of supervisor contact. However, only half have received a performance evaluation; this was most true for international postdocs and least true for Medical School postdocs. Women were less satisfied with the amount and quality of contact with their supervisor and were more likely to report that their relationship with their supervisor was stressful. International postdocs were less likely to indicate that their supervisor provides opportunities for them to gain experiences and were more likely to rely on others for career development advice.

Postdocs reported a generally positive climate. However, one-quarter feel excluded from informal networks and that they have to work harder than others to be perceived as legitimate scholars; the latter was most true for international postdocs and least true for Medical School postdocs. Women were less likely to report fair and equitable procedures in their unit. A few (especially women and international postdocs) have been harassed and/or subject to inappropriate or disrespectful language while at UM. Most were not aware of newly revised UM personnel policies that apply to postdocs, and two-thirds were unaware of grievance and/or

mediation procedures available to them. Only one-quarter knew about policies for time off related to childbirth and/or adoption, and some reported being unable to take that time off.

Most postdocs indicated that their supervisor understands when demands at home impact their professional responsibilities. However, one-third reported that these demands limit their professional activities and that the most stressful aspects of their life outside of work were balancing work and family responsibilities as well as concerns about their partners' positions. Women were more likely to report stress related to household responsibilities and childcare and were less satisfied with their ability to integrate work and home life demands. International postdocs also reported more stress associated with balancing work and family responsibilities as well as immigration-related matters. Medical School postdocs were less likely to agree that their work schedules provide flexibility to address responsibilities at home.

Recommendations from Postdocs

Postdocs identified faculty mentors as well as other department and lab mentors as most supportive of their transition to their position at UM. They also suggested that better logistical information, orientation, and financial support would improve that process. The most frequently expressed concern of postdocs was related to benefits and salary at UM.

Postdocs also asked for better and more training and professional opportunities to enhance their career development. They also suggested better mentoring, decreased workload, and more efforts to integrate international postdocs as well as all postdoc family members into the community.

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Table 1: Academic Unit

	N	%
Engineering	106	13%
LSA	190	24%
Medical School	324	40%
Dentistry	21	3%
Natural Resources and Environment	14	2%
Life Sciences Institute	41	5%
Public Health	38	5%
Pharmacy	13	2%
Education	8	1%
Public Policy	8	1%
Business	3	0%
Nursing	4	1%
ISR/ Interdisciplinary institutes	12	2%
Law	1	0%
Art and Design	1	0%
Music, Theatre, and Dance	2	0%
Social Work	2	0%
Kinesiology	3	0%
Information	2	0%
Other	13	2%

Table 2: Methods Used to Find Postdoctoral Position

	N	%
Referred by a colleague	99	13%
Referred by doctoral advisor	117	15%
Directly contacted by current supervisor	94	12%
You directly contacted your current supervisor	267	35%
An advertisement in a journal, publication, or website	139	18%
A conference job center or career fair	5	1%
Professional recruiter	2	0%
Dual career hire	6	1%
Other	35	5%

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Table 3: Time in Postdoctoral Position(s)

		Less than 6 months	6 months to 1 year	More than 1 year, less than 2 years	More than 2 years, less than 3 years	More than 3 years, less than 4 years	More than 4 years, less than 5 years	More than 5 years	Unsure
How many years have you been in your CURRENT postdoctoral position at UM?	(N=805)	13%	30%	29%	16%	6%	4%	2%	0%
How many TOTAL YEARS have you held a postdoctoral position, including past and present positions?	(N=785)	9%	22%	26%	18%	10%	8%	8%	0%
How many more years do you plan on holding a postdoctoral position at UM?	(N=779)	18%	15%	30%	18%	6%	2%	0%	11%

Table 4: Sources of Funding

	N	%
Research contract or grant awarded to my supervisor	496	62%
U.S. Federal fellowship (e.g. NIH, NSF) awarded to me	81	10%
U.S. Federal Training Grant awarded to the department/lab/center	61	8%
Non-federal fellowship (e.g. American Cancer Society)	36	5%
University funds (e.g. fellowship, instructors)	92	12%
Foreign government/agency	14	2%
Private company	6	1%
Personal funds	7	1%
Other	9	1%

Table 5: Importance of Factors for Pursuing Postdoc Position in General

	Not important	Somewhat important	Very important	N	Mean	S.D.
Opportunity to publish	4%	22%	74%	751	2.71	0.53
Opportunity to conduct independent research	5%	32%	64%	746	2.59	0.59
Opportunity to increase knowledge of doctoral field	10%	32%	58%	738	2.49	0.66
Opportunity to gain knowledge outside of doctoral field	21%	38%	41%	729	2.20	0.76
Opportunity to teach	57%	33%	10%	723	1.53	0.67
Preparation for a faculty position	14%	31%	55%	732	2.41	0.72
Other positions not available	57%	28%	15%	687	1.58	0.74
Need for U.S. training to advance career in home country	64%	23%	13%	703	1.49	0.71
Active postdoc association/ career development network	56%	32%	12%	706	1.56	0.70
Collaborative work environment	16%	44%	40%	718	2.24	0.71
Availability of dual career opportunities	49%	29%	23%	699	1.73	0.80
Other	64%	9%	28%	80	1.64	0.89

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Table 6: Importance of Factors for Pursuing Postdoc Position at UM

	Not important	Somewhat important	Very important	N	Mean	S.D.
Opportunity to work with a particular researcher, lab, or department	8%	27%	65%	745	2.57	0.64
Compensation	30%	54%	17%	716	1.87	0.67
Success of supervisor's former students or postdocs	26%	42%	31%	723	2.05	0.76
Prestige of the institution	11%	45%	44%	732	2.33	0.67
To work in this geographic area	46%	29%	25%	716	1.79	0.82
To work in the same general location as partner	50%	15%	35%	711	1.86	0.91
Active postdoc association/ career development network	59%	30%	11%	706	1.52	0.69
Collaborative work environment	21%	45%	34%	714	2.13	0.73
Availability of dual career opportunities	54%	27%	19%	698	1.64	0.76
Other	69%	14%	17%	84	1.48	0.77

Table 7: Expected Career Path at Three Points in Time

	When first started postdoc		When leave postdoc		In 10 years	
	N	%	N	%	N	%
Tenure-track faculty position with an emphasis on teaching	136	18%	152	20%	156	20%
Tenure-track faculty position with an emphasis on research	395	51%	432	56%	323	42%
Tenure-track faculty position with an emphasis on clinical work	1	0%	0	0%	0	0%
Non-tenure-track teaching position	30	4%	39	5%	23	3%
Non-tenure-track research position	5	1%	12	2%	7	1%
Applied research position, non-academic	103	13%	175	23%	92	12%
Basic research position, non-academic	74	10%	123	16%	62	8%
Position in engineering	27	4%	38	5%	20	3%
Position in journalism/ science writing	8	1%	11	1%	24	3%
Position in law/ patent law/ intellectual property	8	1%	12	2%	17	2%
Position in Medicine	38	5%	63	8%	45	6%
Consultant	23	3%	49	6%	51	7%
Entrepreneur or self-employed	16	2%	29	4%	57	7%
Other	10	1%	21	3%	18	2%

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Table 8: Expected Employer at Three Points in Time

	When first started postdoc		When leave postdoc		In 10 years	
	N	%	N	%	N	%
Academic institution	495	64%	478	62%	371	48%
Medical school at an academic institution	146	19%	175	23%	112	15%
Government agency	40	5%	90	12%	53	7%
National lab	49	6%	106	14%	63	8%
Non-profit organization	45	6%	88	11%	60	8%
For-profit company	69	9%	150	20%	110	14%
Self-employed	13	2%	19	3%	57	7%
Hospital or clinic	1	0%	5	1%	4	1%
Don't know	1	0%	4	1%	5	1%
Other	1	0%	2	0%	2	0%

Table 9: Reasons for Changing Career Path

	Not important	Somewhat important	Very important	N	Mean	S.D.
Money	17%	46%	38%	291	2.21	0.71
Autonomy	23%	43%	34%	262	2.12	0.75
Partner's career/location	26%	32%	43%	275	2.17	0.81
Geographic preference	22%	50%	28%	266	2.06	0.70
Difficulty of obtaining desired position	14%	39%	47%	273	2.32	0.71
Riskiness/ insufficient job security	19%	38%	44%	263	2.25	0.75
Integrating work and personal life	10%	37%	54%	269	2.44	0.66
Peer pressure	57%	33%	11%	254	1.54	0.68
Change in research direction	46%	37%	17%	256	1.71	0.74
Loss of engagement in the field	48%	36%	16%	250	1.68	0.73
Best option for pursuing new ideas	31%	31%	38%	258	2.06	0.83
Best option for societal change	34%	37%	29%	254	1.94	0.79
Other	45%	16%	39%	31	1.94	0.93

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Table 10: Open-ended Responses Related to Reasons for Changing Career Path

	%
Difficulty and/or disillusionment about prospects of finding a job	34%
Securing research funding, especially from federal funding agencies	12%
Disillusionment about how academia works	6%
Changes in their own interests or plans, rather than concerns about academia	36%
Already have a job offer or provided details about the specific job they were most interested in	24%

Table 11: Reasons for Attrition in Tenure-track Careers

	%
Gender, specifically, that women may be less likely to pursue a tenure-track career due to family or parenting restrictions and/or because women are excluded and/or isolated from academic opportunities	43%
International postdocs are less likely to pursue a tenure-track position given that lack of U.S. citizenship may exclude them from some jobs and funding opportunities and language limitations can affect their career options and success	25%
Postdocs with children or partners (without any reference to a specific gender) are less likely to pursue a tenure-track position	25%
Racial-ethnic minority postdocs are less likely to pursue a tenure-track position, due at least in part to feeling undervalued or because of experiences of bias in academia	16%
Other	1%

Table 12: Satisfaction with Postdoc Experience

	Very dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied	N	Mean	S.D.
Overall postdoctoral experience at UM	2%	5%	10%	44%	40%	753	4.15	0.91

Table 13: Recommending Postdoc in General and at UM to Others

	Would not recommend	Would recommend with reservation	Neutral	Would recommend	Would enthusiastically recommend	N	Mean	S.D.
Would recommend postdoc training to a graduate student in same field with similar goals	3%	6%	12%	44%	35%	749	4.03	0.98
Would recommend postdoc at UM specifically to a graduate student in same field with similar goals	3%	6%	12%	45%	34%	751	4.00	1.00

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Table 14: Work-related Stress

	Not at all stressful	Somewhat stressful	Very stressful	Extremely stressful	N	Mean	S.D.
Overall stress from postdoctoral position	11%	63%	21%	5%	734	2.19	0.69
Securing funding for research	34%	37%	20%	10%	647	2.06	0.96
Scholarly productivity	9%	38%	31%	22%	691	2.66	0.91
Advising responsibilities	62%	32%	6%	0%	584	1.45	0.62
Bias/discrimination/unfairness in procedures	74%	16%	7%	3%	599	1.38	0.73
Ability to make progress on own research	12%	40%	32%	15%	717	2.51	0.89
Working relationship with colleagues	60%	32%	6%	2%	702	1.50	0.69
Working relationship with supervisor	54%	34%	7%	5%	695	1.63	0.81
Searching for next position	20%	28%	25%	26%	666	2.57	1.08
Identifying long-term career goals	18%	39%	25%	19%	696	2.44	0.99
Working relationship with people you supervise	72%	24%	2%	1%	588	1.32	0.58

Table 15: Open-ended Responses Related to Transition to UM Postdoc -- What Helped Postdocs Adapt to the UM Environment

	%
Support of their faculty mentor, lab members, or department	38%
Support and advice from current postdocs outside their lab or department, from administrative staff members, and from other University community members	30%
Official University events or programs	11%
Non-UM social network, including friends and family members	13%
A general feature of UM, such as being a strong research institution	7%
Having been affiliated with UM previously (e.g., previously attended undergraduate or graduate school at UM) or having previously lived in Michigan	12%
A personal trait, such as being patient or willing to make compromise	9%
Doctoral training and previous experiences at another institution, such as having spent time in an academic setting	3%
Features or amenities of Ann Arbor, such as the bus system	3%
Religious group or other community activities	2%
Still adjusting to their position at UM	3%

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Table 16: Open-ended Responses Related to Transition to UM Postdoc -- Ways to Improve Transition to UM Postdoc

	%
University could have provided better access to basic, logistical information	22%
University could have organized an orientation and/or an orientation packet to help them ease into their postdoc appointments	13%
More opportunities to meet other postdocs in a social setting	11%
Being integrated more fully into the department and/or University	6%
Financial assistance	11%
Receiving assistance managing their relationship with their mentor and/or receiving better mentoring	3%
Better administrative support	3%
More support for their partner's/spouse's move to Ann Arbor	2%
Reducing the amount of new hire paperwork	2%
No suggestions	35%

Table 17: Allocation of Time to Selected Activities

	N	0%	1-25%	26-50%	51-75%	76-100%
Research	743	3%	4%	10%	20%	63%
Mentoring students	744	49%	48%	3%	0%	0%
Teaching	743	86%	10%	3%	1%	0%
Professional development	744	44%	52%	3%	0%	0%

Table 18: Productivity

How many...	N	none	1-3	4+
Papers have you published in conference proceedings?	681	60%	30%	10%
Papers have you (co)authored for presentation at regional, national, or international conferences?	682	44%	40%	16%
Articles have you had accepted for publication or already published in a peer-reviewed journal?	704	48%	40%	12%
Articles have you submitted for publication in a peer-reviewed journal that have not yet been accepted for publication?	682	49%	47%	4%
Books or book chapters you have published?	651	85%	14%	1%

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Table 19: Professional Development Opportunities

	N	%
Supervised or directed research activities of undergraduates, graduate students, or technical staff	730	68%
Taught courses or delivered lectures as part of a course	727	27%
Worked with researchers not a part of your department or lab	726	63%
Served as a reviewer for a conference, journal, or an agency, institution, or organization	725	51%
Prepared grant proposals (funded or not, including fellowship proposals)	727	56%

Table 20: Skill Enhancement

	Not at all	To some extent	To a great extent	N	Mean	S.D.
Becoming an authority in field	12%	58%	30%	722	2.19	0.62
Knowing the latest research techniques	8%	53%	39%	725	2.31	0.61
Writing papers for publication	10%	48%	42%	719	2.32	0.65
Presenting research results to peers	11%	51%	39%	722	2.28	0.64
Writing grant proposals	30%	42%	29%	715	1.99	0.76
Managing a research group or lab	38%	45%	18%	717	1.80	0.72
Supervising others	26%	59%	15%	710	1.89	0.63
Teaching	63%	28%	9%	709	1.47	0.66
Working in a team	15%	57%	29%	712	2.14	0.65
Understanding how academic organizations work	15%	59%	27%	713	2.12	0.63
Understanding discipline outside of UM	25%	59%	16%	710	1.90	0.64
Negotiating with people in authority	37%	53%	10%	712	1.73	0.63
Collaborating with other researchers	11%	58%	31%	716	2.21	0.61
Understanding principles of ethical conduct of research	21%	58%	22%	713	2.01	0.65
Keeping up with current advances in the field	5%	57%	38%	715	2.33	0.57
Fostering critical thinking	6%	55%	39%	710	2.33	0.59
Selecting research problems	10%	56%	35%	712	2.25	0.62
Learning time management	14%	58%	28%	710	2.14	0.63
Preparing resumes for different job types	54%	41%	6%	712	1.52	0.60
Interviewing for different job types	60%	36%	5%	708	1.46	0.59
Other	65%	29%	7%	62	1.42	0.62

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Table 21: Open-ended Responses Related to Suggestions to Enhance Career Preparation

	%
Offer better training opportunities, including sessions focused on grant writing, teaching, professional development, field specific content and specialized techniques, and English as a second language	20%
Workshops or resources specifically related to career development, job preparation, or job searching	20%
Receiving support, information, and/or workshops related to non-academic careers options, such as careers in industry	10%
More opportunities to teach, publish, present research, attend conferences, and apply for grants	16%
More funding for research-related activities and/or for personal support	12%
Additional networking opportunities	9%
Additional mentoring and better training of mentors	8%
Better promotion of existing resources and workshops	6%
More administrative and logistical support from administration and staff members	5%
Support for immigration issues	5%
Nothing more UM could do to support their career preparation	24%

Table 22: Department Climate

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	N	Mean	S.D.
My colleagues value my research/ scholarship.	2%	5%	12%	44%	37%	703	4.08	0.93
I am satisfied with opportunities to collaborate.	3%	9%	12%	39%	37%	708	4.00	1.04
Supervisor creates a collegial and supportive environment.	4%	6%	11%	28%	51%	699	4.15	1.11
Supervisor helps me obtain resources I need.	3%	4%	8%	27%	58%	701	4.33	0.98
I have a voice in decision making in department/lab/center.	9%	9%	20%	31%	32%	674	3.69	1.24
My department/lab/center is a good fit for me.	4%	7%	16%	37%	38%	702	3.97	1.07
My department/lab/center is a place where postdocs can comfortably raise personal/family responsibilities when scheduling obligations.	3%	7%	15%	36%	40%	682	4.03	1.04
I feel excluded from an informal network in my department/lab/center.†	30%	21%	25%	16%	7%	669	2.50	1.28
I have to work harder than some of my colleagues to be perceived as a legitimate scholar.†	29%	17%	26%	21%	8%	687	2.62	1.30
I have colleagues in my department/lab/center who are personal friends.	5%	9%	19%	36%	32%	684	3.82	1.13
I have colleagues at UM who are my personal friends.	5%	7%	14%	31%	43%	685	3.99	1.15
My department/lab/center's procedures are fair and equitable to all.	4%	5%	20%	34%	37%	682	3.96	1.06
My department/lab/center's procedures are transparent and open for discussion.	5%	10%	22%	37%	26%	689	3.69	1.12
I have been harassed while a postdoc at UM.†	73%	7%	11%	7%	2%	677	1.58	1.05
I have been subject to inappropriate or disrespectful language while a postdoc at UM.†	71%	10%	10%	7%	2%	679	1.59	1.06
My supervisor creates opportunities for me to gain experience.	3%	4%	12%	31%	51%	695	4.23	0.99

†Denotes items worded in a negative direction; for these items, a lower mean indicates a stronger disagreement with the item.

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Table 23: Open-ended Responses Related to Suggestions for Enhancing the Postdoc Community

	%
More networking and professional development events	41%
Better financial support, benefits, or amenities	21%
Better communication and information-sharing with postdocs	12%
Improving mentoring and decreasing workload	6%
Encouraging more inclusion of international postdocs in events	7%
Integrating postdocs' family members into the larger postdoc community	2%
Nothing more UM could do to improve the community	12%

Table 24: Sources of Career Advice

	Not at all	To some extent	To a great extent	N	Mean	S.D.
Current supervisor	12%	49%	40%	721	2.28	0.66
A senior colleague in department other than supervisor	35%	46%	18%	709	1.83	0.71
A senior colleague outside of UM	34%	45%	21%	703	1.87	0.73
Peers	24%	60%	16%	700	1.93	0.63
Doctoral advisor	32%	44%	25%	694	1.93	0.75
Career counselor	88%	11%	2%	688	1.14	0.39
Postdoctoral career development program	77%	20%	3%	687	1.26	0.51
Other	79%	17%	5%	66	1.26	0.54

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Table 25: Satisfaction with Postdoc Supervision

	Very dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied	N	Mean	S.D.
Amount of contact with supervisor	8%	8%	11%	25%	48%	749	3.98	1.26
Quality of contact with supervisor	9%	12%	11%	28%	40%	746	3.79	1.32

Table 26: Support from Supervisor and UM for Career Development

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	N	Mean	S.D.
My supervisor would support me in any career path I choose	4%	6%	10%	30%	50%	695	4.15	1.10
I have received advice from my supervisor on career options within academia	8%	9%	16%	31%	36%	671	3.79	1.24
I have received information from UM sources other than supervisor on career options in academia	17%	11%	20%	32%	20%	665	3.28	1.36
I have received advice from my supervisor on career paths outside of academia	29%	18%	24%	20%	10%	646	2.66	1.34
I have received information from UM sources other than supervisor on career options outside of academia	24%	14%	25%	24%	12%	647	2.85	1.35

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Table 27: UM Resource Utilization

	N	Used Resource?			If used resource, rating of quality of experience					N	Mean	S.D.
		Not aware of resource	Aware of resource, have not used it	Aware of resource, have used it	Poor	Fair	Good	Very good	Excellent			
CRLT teaching skills training	688	47%	32%	21%	0%	5%	22%	25%	48%	136	4.15	0.94
Center for the Education of Women (CEW)	684	58%	37%	5%	0%	3%	19%	42%	36%	31	4.10	0.83
Career development workshops in my unit	681	54%	29%	17%	1%	4%	29%	38%	29%	98	3.89	0.91
Career development workshops from other UM sources	681	48%	31%	21%	1%	4%	23%	53%	19%	126	3.86	0.80
Faculty and Staff Assistance Program (FASAP)	684	79%	17%	4%	4%	13%	17%	9%	57%	23	4.00	1.31
International Office	677	34%	33%	34%	2%	6%	18%	31%	44%	199	4.09	1.00
UM Postdoctoral Association	684	30%	47%	23%	1%	11%	29%	34%	25%	140	3.71	0.99
Office of Postdoctoral Studies	683	48%	44%	8%	5%	10%	17%	52%	17%	42	3.67	1.02
On-campus child care services	678	46%	48%	7%	5%	0%	11%	24%	60%	37	4.32	1.06

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Table 28: Awareness of UM Resources

	Not at all aware	Somewhat aware	Very aware	N	Mean	S.D.
UM postdoctoral Association website	40%	46%	13%	703	1.73	0.68
Office of Postdoctoral Studies Postdoctoral Fellow Handbook	59%	33%	8%	704	1.49	0.64
Newly revised University personnel policy that applies to postdocs	81%	17%	3%	700	1.22	0.48
Mediation/ grievance procedures	66%	31%	2%	713	1.36	0.53

Table 29: Benefits

	N	% Health	N	% Dental
I receive insurance through UM	669	89%	597	88%
I receive insurance through sponsor	26	3%	18	3%
I receive insurance through my spouse's/partner's employer	45	6%	42	6%
I am not covered by insurance	3	1%	23	4%

Table 30: Satisfaction with Life outside of UM and Work-Life Balance

	Very dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied	N	Mean	S.D.
Overall satisfaction with life outside UM	1%	6%	11%	48%	33%	710	4.06	0.89
Satisfaction with ability to integrate the needs of work with personal/family life	4%	16%	20%	45%	15%	702	3.50	1.06

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Table 31: Work Flexibility

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree	N	Mean	S.D.
Demands at home limit my professional activities.†	29%	22%	17%	25%	6%	638	2.56	1.31
My current work schedule provides flexibility to take care of demands at home.	4%	11%	16%	42%	27%	674	3.77	1.08
My supervisor understands when demands at home impact my professional responsibilities.	3%	6%	18%	35%	38%	644	3.97	1.05

†Denotes items worded in a negative direction; for these items, a lower mean indicates a stronger disagreement with the item.

Table 32: Non-work-related Stress

	Extremely stressful	Very stressful	Somewhat stressful	Not at all stressful	N	Mean	S.D.
Balancing work and family responsibilities	20%	53%	17%	10%	650	2.18	0.86
Managing household responsibilities	28%	53%	14%	5%	674	1.95	0.78
Childcare	31%	43%	16%	9%	335	2.04	0.92
Care of someone who is ill, disabled, aging, and/ or in need of special services	61%	30%	8%	2%	261	1.51	0.72
Your health	48%	43%	7%	1%	670	1.62	0.68
Cost of living	28%	48%	16%	8%	687	2.05	0.88
Immigration matters	38%	32%	17%	13%	444	2.04	1.03
Inability to pursue outside interests and avocations	37%	47%	12%	4%	637	1.84	0.80
Lack of time to think and reflect	33%	44%	18%	5%	668	1.95	0.85
Situation of my spouse/partner (e.g., job situation, living in another city)	31%	36%	19%	14%	533	2.17	1.02