
A STUDY OF THE WORKING ENVIRONMENTS (CLIMATES) OF THE NATURAL SCIENCE DEPARTMENTS IN THE UNIVERSITY OF CHICAGO AND NORTHWESTERN UNIVERSITY

SUMMARY OF KEY FINDINGS AND RECOMMENDED OPPORTUNITIES

An overview of the most prominent findings from the research conducted by NORC on behalf of the Provosts of Northwestern University and the University of Chicago.

Submitted to:

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And

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PREFACE

This document was created from the lengthy (over 100 page) report of the research findings from in-depth interviews with 112 faculty members conducted by NORC on behalf of Northwestern University and The University of Chicago. That report was purposely extensive with many direct quotations in order to capture the greatest depth of information possible.

This document represents a synthesis of the most salient findings from the study and interprets them for potential implications and actions. It has been prepared by the study leadership at Northwestern University, The University of Chicago, and NORC to assure accuracy and fidelity to the full study report of findings.

The research data and the full NORC report of the research findings are being maintained as confidential, IRB-protected research records. They will be retained for future comparative studies or additional analysis as might be deemed appropriate. The primary research data are retained only by NORC to eliminate any risk of release of confidential research information.

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Richard McGee, Mary J. Harvey and P. Lindsay Chase-Lansdale¹

INTRODUCTION

The idea to pursue a deep understanding of the lived experiences of faculty originally stemmed from a joint application by Northwestern University and the University of Chicago to NSF for an ADVANCE grant. Although the grant was not funded, a close examination of institutional climates was seen as having very high value, especially the chance to compare across universities. Based on this potential value, the Provosts' offices at each university decided to provide funds to pilot the methodology in a subset of departments. Unlike the more typical survey approaches, this alternative approach used in-depth, more open-ended, interviews instead. The goal was to explore faculty perceptions of institutional climate and to identify practices that may lead to increased faculty satisfaction.

In order to protect the confidentiality of participants, NORC, an outside research firm expert in qualitative interviewing and data analysis, was contracted to conduct the interviews and analyze the data. Confidentiality was further protected by conducting the study as an IRB-approved research study with guarantees that any data reported would be sufficiently de-identified to protect anonymity.

The questions for the interviews were developed by members of the university study team, which included faculty, some with expertise in qualitative interview design and analysis, members of the Provosts' offices, and NORC. That team included from Northwestern University Katherine T. Faber, Walter P. Murphy Professor of Materials Science and Engineering, Richard McGee, and James B. Young, Professor of Medicine and former Associate Provost for Faculty Affairs; from the University of Chicago Mary J. Harvey, Ka Yee Lee, Professor of Chemistry, and Peggy Mason, Professor of Neurobiology; from NORC Jake Bartolone, Senior Research Scientist. Questions were designed to elicit insights into the overall working environments that faculty encountered and to which they related most closely. Interviewers were trained by NORC to ask follow-up questions to obtain more detail and information contributing to initial question responses. The interview protocol is included with this report in an Appendix.

The study was initiated in September 2012, with the following email sent to all members of the natural science departments by the respective Provosts:

Dear Colleagues,

I am writing to let you know of a new effort to understand more systematically and accurately the working environment within individual departments at Northwestern University (or University of Chicago). As you may know, we periodically participate in national surveys designed to compare academic working environments among similar universities. Broad national surveys, however, tend to provide information of only modest depth and with low response rates, so caution must always be exercised in interpreting the data. To obtain a deeper understanding of the climate within several departments at Northwestern (or University of Chicago), we have contracted with NORC at the University of Chicago (formerly known as the National Opinion Research

¹ Richard McGee, Associate Dean for Faculty Recruitment & Professional Development, Northwestern University Feinberg School of Medicine (Dr. McGee led the team in the design of the study, ongoing consultation with NORC on data acquisition and analysis, and the creation of this summary); Mary J. Harvey, Associate Provost for Program Development, University of Chicago; and P. Lindsay Chase-Lansdale, Associate Provost for Faculty, Northwestern University.

Center) to conduct a research study using confidential, private interviews with a representative sample of faculty in the natural science departments. This is a pilot effort so we are starting with a limited number of departments with both commonalities and differences, to refine this method and determine its effectiveness. If it is successful and suggests ways in which we can improve, this project could be expanded in the future to encompass more departments and become a regular tool for continual self-assessment. This study is being conducted in parallel in a similar set of departments at the University of Chicago, also sponsored by their Provost's Office, to provide comparative data to aid interpretation of the information obtained.

Within the next few weeks, some of you will be contacted by NORC with an invitation to participate in this study, which will require 30-60 minutes of your time. The interview would be conducted in-person at a site convenient to you, or it can be conducted by phone if a convenient meeting time and place are not possible. I encourage you to participate in this important activity but, of course, participation is voluntary. All information provided during the interviews will be treated with the highest level of confidentiality and privacy, and no information will ever be reported in any way that would allow an individual to be identified with any comment. No individually identifiable information will be provided to Northwestern (or University of Chicago) by NORC, only summaries and syntheses of observed themes. To provide the highest level of assurance, and in keeping with our hope that his new approach can be of general use to the academic community, it has been reviewed and approved by the IRB's at Northwestern, University of Chicago and NORC. If you have any questions, please contact the Northwestern study PI, Dr. Richard McGee (r-mcgee@northwestern.edu) (or the University of Chicago study PI, Dr. Mary Harvey).

Participating Departments

Northwestern University:	University of Chicago:
Cell and Molecular Biology	Ben May Department for Cancer Research
Microbiology-Immunology	Biochemistry and Molecular Biology
Molecular Pharmacology and Biological Chemistry	Ecology and Evolution
Physiology	Human Genetics
Molecular Biosciences	Microbiology
Neurobiology and Physiology	Molecular Genetics and Cell Biology
Chemistry	Neurobiology
Earth and Planetary Science	Neurobiology, Pharmacology, and Physiology
Mathematics	Organismal Biology and Anatomy
Physics and Astronomy	Astronomy and Astrophysics
Statistics	Chemistry
	Computer Science
	Geophysical Sciences
	Mathematics
	Physics
	Statistics

Sampling Methods and Participation Rates

Sampling within each department was designed to achieve approximately the same number of women and men, and a distribution across academic ranks. A total of 143 faculty members were invited to participate across the two universities. Of these, 112 agreed to participate, for an overall response rate of 78%. There were small differences by university, with a response rate of 81% for Northwestern and 77% for the University of Chicago. Women agreed to participate more often than men (77% vs. 66%) but with substitutions to achieve an equal gender mix, the final study population was 80% men and 77% women. These response rates are higher than are typically obtained with online or mailed surveys, a first indicator that faculty felt this approach was a worthwhile use of their time. Most faculty members elected to be interviewed in their offices, with a few preferring other sites. The average time of the

interviews was 42 minutes with a range from 10-90 minutes (16 interviews of 10-20 minutes and 14 longer than an hour).

Analysis of the data from the interviews utilized established methods for qualitative analysis. Using transcripts of audio recorded conversations, or detailed notes from the five individuals who preferred not to be recorded, NORC researchers read through all of the interviews to identify potential common or important themes. Early themes were discussed with Northwestern University and the University of Chicago study leaders for calibration, interpretation and guidance on context as analysis progressed. Once theme identification had reached saturation with all of the interviews (no new themes emerging), the final thematic architecture was discussed and agreed upon. None of these discussions used individually identifiable quotations to preserve confidentiality. The analysis and conclusions were then based on comparing responses within the themes across various subdivisions, such as departments, fields, rank, and gender. In the report that follows, no information is provided by any 'unit' which could be sufficiently small to risk identification of one or a few individuals. Thus, very little information is provided that explicitly compares departments. The intent of the study was to delineate the working climate for faculty with sufficient granularity to reveal reasons behind perceptions of climate. Of particular importance, the rationale for doing the study was to hopefully identify examples of highly effective and positive working environments to guide improvement in those that are perceived by faculty to be less positive.

Candor and Confidence in Confidentiality/Anonymity

Based on the level of detail and sensitive issues that came out in the interviews, the great majority of faculty appeared to be willing to provide honest and candid information. A few declined to share details or identifiable information in some instances but, in most cases, very clear pictures of faculty perceptions of their work environments were obtained. It is not possible to know information that was not revealed, but the NORC study team reported that the information provided in the interviews was very detailed compared to information typically seen in surveys.

THE FINDINGS

The questions posed in the interviews addressed all phases of faculty careers. Responses are grouped below into a series of overarching themes as a way of organizing the wide-ranging answers. The themes include preparation for faculty positions and transitions into them; promotion and tenure review; overall perceptions of working environment and climate; race, ethnicity and climate; gender differences in perceptions of climate and equitable treatment; and the centrality of departments and Chairs for the faculty experience. Most thematic sections include a number of subsections. Throughout, opportunities for improved institutional practices are proposed.

I. PREPARATION FOR FACULTY POSITIONS AND TRANSITIONS INTO THEM

Few if any faculty members expressed concerns that they were unprepared for the scientific expectations of positions they moved into, whether they were at the Assistant, Associate or Professor level. However, many expressed clear under-preparedness for accompanying or ancillary skills. Most of the challenges reported were from Assistant Professors, although more advanced faculty moving back into the academy from other sectors also reported similar challenges. For those moving into positions that required significant teaching loads, many felt unprepared for this role. Few who felt under-prepared reported receiving clear guidance and support in becoming skilled teachers, feeling more like they were expected to 'figure it out on their own'. Similarly, although all science faculty are expected to obtain external

research support, few reported systematic or designated support to assist them in 'learning the ropes' for getting grants. On a related topic, many reported significant challenges in getting their own research labs and groups started, wishing they had more guidance in getting started. From the research perspective, many likened getting started to beginning a small business with little preparation for much of what is required. Several reported missteps that ended up costing them time and productivity in their early years. Some reported problems related to promised lab and office space not being ready on time, and other infrastructure problems. None of the perceptions above differed by gender. Although these observations are not necessarily novel, they point to the potential value in careful consideration of assistance for male and female junior faculty in getting started.

OPPORTUNITY – Greater attention to assisting faculty when they transition into new positions could pay dividends in terms of greater faculty productivity, more rapid achievement of extramural funding, more consistent development of teaching expertise and lower stress.

Transitions Outside of University Work but with Substantial Impact on Faculty Life

Aside from research and teaching transitions, the most common transition needs/challenges reported were with school/child care issues and housing. Here, there were notable differences between the two universities. Faculty at the University of Chicago more often were pleased with school and child care options compared to faculty at Northwestern. A number of faculty also reported expecting more assistance finding housing than they received. The magnitude of the challenges faced in these areas was highly variable as might be expected. However, the responses confirm the often-reported observation that, today, many junior faculty members are starting their careers in later life stages where family and other life issues are frequently of concern.

OPPORTUNITY – Review and modest expansion of services to assist new faculty obtain housing and other family-related resources could decrease stress related to transitions and ongoing complexities of balancing work and other responsibilities.

Mentoring and Other Informal Guidance

Considerable time and attention was given to this topic within the interview structure and by faculty during their responses. Interviewees revealed a much more complicated calculus when it comes to mentoring than might have been expected. The range of responses can be subdivided into: (1) little or no mentoring offered; (2) informal effective mentoring by peers and senior colleagues; (3) formal mentoring programs – effective and not effective; (4) rejection of mentoring as desirable for different reasons; (5) problematic mentoring by senior colleagues.

There was a very wide range of approaches to and expectations for mentoring of junior faculty across departments; efforts or needs for mentoring of more senior faculty rarely came up. This was one of the contributing factors to the key finding, expanded below, of the centrality of departments and Chairs to establishing the climate and environment that faculty experience. The highest level of satisfaction for junior faculty was associated with departments in which the leadership set a tone of the importance and value of senior faculty mentoring junior faculty. In most cases, this was done informally to match interests and personalities. This allowed for some faculty members to prefer not to get excessive mentoring if they did not want or need it. In departments where there was little or no formal or informal system, or expectation of mentoring, junior faculty felt they had to 'figure it out on their own'. This was seen as adding stress and potential for wasted time and efficiency during the 'figuring it out' phase. This also led some to reflect a sense of isolation and risk of making missteps. Some faculty members referred to formal mentoring programs within their departments, but with mixed reviews at best. Mentoring committees were seen as generally ineffectual if mentors were assigned and faculty

approached them as just an obligation to meet. More formal structures could and did work if junior faculty actively engaged in choosing their mentors and senior faculty engaged in it as a valued process. The contribution of peer mentoring, especially with junior faculty starting positions at similar times, was also generally seen as very positive.

A relatively small number of faculty (somewhat more common among senior women) expressed a clear and often strong negative association with mentoring. Reasons they identified for their views included not wanting anyone to be telling them what to do or their desire to show they could make it on their own. With respect to concerns about seeking mentoring as a sign of weakness, one faculty member pointed out how a formal approach to mentoring could counteract this potential concern. It would also seem that the messages delivered from department leadership would be key in establishing mentoring as a normal process during transitions.

Several unique challenges faced by women with respect to mentoring were evident in the interviews. Not unexpectedly, some junior women desired senior women mentors when there were few or none in their departments. Some senior women felt over-burdened with extra demands on their time that male colleagues did not face. More problematic, however, were two types of experiences only reported by women faculty. Several women reported senior male mentors who came across as overly controlling or exhibited condescending attitudes as mentors, often not appearing to be concerned with the best interests of the junior colleague. In other instances, the junior faculty member felt that her senior male mentor capitalized on the power differential. There were even several reports of sexual harassment, although most of these alleged instances occurred many years or decades in the past and far fewer instances were reported by current junior faculty. However, some junior faculty members still reported an awareness of the imbalance of power and some concern about its potential misuse.

OPPORTUNITY – The most effective and positive environments are those in which mentoring is presented by leadership and seen by faculty as a legitimate element of transitioning into new positions and career steps. Providing flexibility in how much individuals engage mentors and establishing some system or structure to make it feasible is ideal. Faculty feel (and likely accurately) that effective mentoring could significantly decrease the risk of lost time and productivity and missteps in getting started. Mentoring is seen as a key element of departmental relationships, and likely is an ingredient of what makes those departments effective. Establishing mentoring as a priority, and its effectiveness as a criterion for evaluation of departmental leadership, would be one way to make mentoring a central aspect of institutional culture. Concerns noted by some faculty members, especially women, would have to be recognized and incorporated into assessment of senior faculty most suited to play key mentoring roles.

II. PROMOTION AND TENURE REVIEW

The following section is particularly long and detailed as the concerns raised were among the most commonly expressed and significant. Not surprisingly, among pre-tenure faculty, concerns about achieving promotion and tenure were by far the most prominent stressors discussed. This topic also displayed some of the most clear differences between the University of Chicago and Northwestern University, and more institutional issues vs. departmental issues than other areas of discussion. As with other topics, there was a large array of opinions and perceptions ranging from levels of stress affecting health to little stress at all. Beyond the deleterious effects of stress by itself, several junior faculty members related concrete, lasting negative impacts on productivity and ambition. A comparison of factors contributing to low vs. high stress processes provides a window into ways to achieve promotion and tenure review while minimizing unnecessary stress and inequities. Some comments from senior

faculty on their experiences relate to practices that no longer exist, so most of the focus of this section is on current practices and the experiences of untenured faculty up through those tenured within the last few years.

Slightly fewer than half of those interviewed experienced a generally positive experience with promotion and/or tenure review. One quarter had a negative experience and the other quarter was mixed. The frequency of positive experience was slightly higher for Northwestern University faculty, but the frequency of an overall negative rather than mixed experience was slightly higher as well.

Characteristics of Positive/Lower Stress Processes

The key attributes of a positive experience included: (1) a straightforward and well managed process; (2) clear and transparent requirements for promotion and tenure; and (3) a process that minimized stress including short periods of uncertainty. At Northwestern, about half of those with a positive experience attributed it to their own efforts and abilities to demonstrate success leading up to review, as well as to being proactive to find out what was required. Others attributed it to supportive Chairs and mentors. Faculty at the University of Chicago provided more varied reasons on why it was positive. Several mentioned how helpful it was to be able to sit in on tenure reviews of other faculty to learn what to expect. Unique to the University of Chicago were several reports by faculty of an accelerated tenure review after being offered positions elsewhere. In these instances, the typical time for review was dramatically decreased. However, those who commented on this did not indicate they believed the review outcome was different than it might otherwise have been.

At both universities, the importance of feedback on a regular basis during years leading up to promotion and tenure was emphasized. Everyone in the biological sciences who received regular feedback felt it was very valuable and a major contributor to a lower stress experience; it was less uniformly seen as a contributor in the physical sciences at the University of Chicago. An active role by department Chairs was associated with a positive experience as well. Finally, efforts and opportunities for junior faculty to interact with and get to know university leaders also were seen as valuable.

Characteristics of Negative/Higher Stress Processes

Characteristics of negative review experiences most commonly reported were roughly the same for both universities, and included a lack of clear guidance on expectations and the process leading up to and during the review, not receiving enough (or any) feedback leading up to the review, feeling unsupported (particularly by the Chair), unnecessary and even unhealthy levels of stress and exhaustion, and confusion over the requirements from outside the department (typically the Office of the Dean). (It should be noted that none of those interviewed had gone through promotion and tenure review and been denied.)

Just under one in three faculty members at both universities felt that they did not receive sufficient guidance from their departments, in terms of explaining the process and expectations and providing regular feedback to candidates. This complaint was somewhat more prevalent among faculty members at the University of Chicago, where it did not vary substantially by division. At Northwestern University, faculty members in the WCAS were far more likely to report a lack of guidance than faculty members in the FSM.

In general, interviewees commonly noted that preparing for and participating in the tenure review process was exhausting and stressful; a few interviewees expressed a serious concern that this negatively affected their health. Many interviewees, including those with positive experiences, noted that participating in the tenure process requires quite a bit of work, and that some level of additional stress is unavoidable. A few interviewees reported feeling overworked prior to review and experiencing post-review burnout (possibly leading to a substantial drop in productivity during recovery), or reported

witnessing colleagues undergoing such experiences. One University of Chicago interviewee said, *“before tenure it was just sort of insane, I drove myself to illness...but then you know tenure was over and I stopped and then I sort of went into a restful period where I wasn't working very hard at all because you just get maxed out...and the tenure process itself is kind of demoralizing.”*

Interviewees at the University of Chicago were more likely than their colleagues at Northwestern University to express concern that the stress and exhaustion levels were well above what they had expected. Just over one in six interviewees in the Biological Sciences Division (BSD) reported this concern, along with a few interviewees in the Physical Sciences Division (PSD). At Northwestern University, one in five interviewees in the WCAS expressed concern about this, but none in the FSM did. Interviewees in the BSD at the University of Chicago were critical of the long forms that were until recently required as part of the process, and interviewees at Northwestern University were critical of the length of time the process takes compared to their peers at other institutions and the added stress of waiting.

Interviewees at both institutions raised concerns about the role of the Office of the Dean in the tenure review process. Faculty in the FSM at Northwestern University were concerned that the Office of the Dean places too much emphasis on grants in the tenure review. A few interviewees in the WCAS at Northwestern University reported being confused by decisions made by the Office of the Dean, and did not feel that sufficient explanations had been provided. In the BSD at the University of Chicago, a few interviewees expressed concern with recent changes to the tenure process being made without very clear guidance from the Dean as to what they meant and how faculty should adapt.

A few interviewees at each university reported that their review committees had been unduly influenced by departmental politics, or that gatekeepers like the Chair had prevented reviews from progressing due to some sort of conflict. A couple of interviewees reported that one or more colleagues had undeservedly received tenure because of the support of one or more powerful figures in the department. Citations of departmental politics usually referred to conflicts between faculty members in different disciplines or subfields within the department, but in a few cases were due to personal conflicts.

Several interviewees, both male and female, and at both universities, noted that receiving outside offers of employment seemed to heavily influence tenure and promotion decisions, as well as the timing of reviews. A few of these noted some problems with this influence. First, it disincentivizes loyalty by rewarding faculty members who regularly interview for other positions, which may not be fair to a faculty member who prefers to stay at one university for continuity, loyalty, or any other reason. Second, there was a general perception among both male and female interviewees that men were more likely to seek outside offers than women, and were rewarded in this behavior with higher salaries, earlier tenure, and quicker promotions contributing to perceived salary disparities between men and women. Third, a handful of female interviewees, and a couple of male interviewees with female faculty partners at either university, said that universities in general, including their own, do not take outside offers to women as seriously as they do those to men. Several offered examples of female faculty members who were offered worse retention incentives (or none at all) compared to male faculty with similar or worse qualifications. One interviewee noted that this is specifically a problem for female faculty members who are married to a male faculty member: *“In a situation of...an academic couple...let's say when it is the woman that has an offer from somewhere else the university doesn't take it quite as seriously as if it was a man, you know?”* A few felt that the fairest approach would be for the university to keep track of faculty members' salaries, and to automatically make adjustments to maintain parity when one faculty member receives a non-promotion raise. The only reported example of this was an instance where raises were given to several male faculty members to match the salary of a female peer who was given a retention raise to match an outside offer.

Interviewees at both universities expressed concern about the possibility that a qualified candidate might be denied tenure based on inadequate preparation or unevenly applied guidelines. A few interviewees noted specific instances in which denial of tenure (sometimes for more than one person in short

succession) negatively impacted departmental morale, especially when the candidate seemed outwardly qualified. However, a handful of interviewees, mostly at the University of Chicago, expressed concern that the tenure review process was not rigorous enough. The unifying theme of their concern was that committees err on the side of granting tenure not because it is clearly deserved but because they do not have enough reason to confidently deny it.

Influence of the Department Chair

The implementation and perceived fairness of promotion and tenure review processes differed substantially by department, usually due to the influence of the department Chair. Many anecdotes about the tenure process revolved around changes implemented by an incoming Chair (most of these changes were viewed as positive). In addition to their standard roles, some interviewees reported that Chairs may informally anchor departmental perceptions of a candidate's worthiness based on their public support (or lack thereof) for that candidate. As described by a few interviewees, the Chair's perceived or stated opinion of a candidate may have little to do with the particular candidate and more to do with the case's relation to extant department politics, particularly in departments with very distinct subfields in which conflicts can arise over allocation of resources between subfields. Based on reports from interviewees, it appears that Chairs have a greater influence at the University of Chicago than at Northwestern University, but that Chairs at both institutions have a substantial influence on the process. Chairs also tend to have more concentrated influence in smaller departments.

Many of the descriptions of the tenure review process revolved around the level of engagement of the Chair and the amount of detail in information provided to candidates, particularly with regard to decisions around granting early or delayed tenure (which was brought up more by Northwestern University faculty than University of Chicago faculty), and on what specific criteria the candidates were to be evaluated.

Perceptions of Differential Treatment of Men and Women in Promotion and Tenure Decisions

A handful of female faculty members at each university and one male faculty member at Northwestern University, evenly distributed across disciplines, shared their perception that the review processes may be biased against women, but generally noted that the issue was complex and not easily addressed. For example, one female interviewee, in reference to delaying her review, said, *"I don't know how you can make it fairer, you know, because there's all these things -- every case is so individual and different, and you can always come up with some argument why someone should go early or later. You know, for women they often say you should go later."* In some cases, female interviewees felt that additional transparency, particularly with regard to the review criteria and the reasoning behind decisions, would likely go a long way towards assuaging their doubts about the process. A few faculty members noted that the tenure review process could be more difficult for female faculty members with young children, although they noted that this is improving at both universities.

The few interviewees who commented on this subject did not directly address bias in the review process itself, but in the people making decisions. That is, these interviewees felt that their reviews were negatively affected by the gender biases of senior male faculty, often including the Chair, who were responsible for preparing the tenure candidate and for conducting the review itself. These interviewees tended to characterize the perceived bias as a lack of respect for women faculty, in particular that these male colleagues may have viewed their accomplishments differently than they would a male candidate with the same qualifications. For example, one female Northwestern University interviewee said *"I've been told by a guy ... you're on these committees because you're a girl"* as a way to explain how successful she was in particular for her age. Another female interviewee, from the University of Chicago, described how her male colleagues used to openly discuss female graduate students very inappropriately, and implied that this might affect how they would view their female colleagues during the review process.

A few other female interviewees reported interactions with senior male colleagues and department Chairs who were dismissive of their work and did not respect their ability to do science. One noted a marked improvement with the arrival of a new department Chair: *“The old Chair was really dismissive. You know I'd try to talk shop and he'd just always said he had a better way to do something. He wouldn't even listen to what it was that I said ... He'd say oh well, you should try our technique ... [The new Chair is] just actually interested in my work. You know I'm interested in his. It's the way colleagues are supposed to be. He talks to me like I'm an adult.”* One female senior faculty member, reflecting on her experiences within the department in general as well as on review committees, said: *“It's how women are portrayed. For instance, we have in the lab these carts that you put together. They arrive in pieces like Ikea things. They arrive with a screwdriver and a picture of a woman in a dress putting it together. What does that say? ‘It is so easy that even a woman can put this together....’ For the longest time I would get letters of recommendation saying I was a ray of sunshine and who cares about that. But, I think the most important thing is ... if a woman did it, it couldn't have been that hard.”*

Institution-Specific Issues

A number of Northwestern faculty perceived that they had been treated differently than colleagues in their own and other departments, particularly with respect to delayed consideration for promotion. In some instances they felt this was the result of departmental politics that did not involve them, or inappropriate delays of promotion for women. However, the largest number of concerns raised were related to the long time between initial submission of promotion/tenure packets and the announcement of decisions. Many provided comparative evidence of the time being much shorter for colleagues at other institutions. The second major concern related to the Deans' ad hoc committees. Although recognizing the potential value of independent assessment, many felt it led to a 'game' being played in which faculty members purposely did not submit names of outside reviewers so they could be 'discovered' when the Deans' Offices were seeking external comment from peers who had not been suggested by the candidate: *“one of the very peculiar aspects of the system here is that instead of the department submitting a list, the department can submit a certain number of names of actual references. But the university wants to come up with their own [list], and so as a result there's this complicated game of not suggesting names in the hope that they will come up with them on their own. It's really a very bizarre system and it's extremely puzzling to the candidates.”*

Faculty at the University of Chicago more frequently reported confusion and lack of clarity in the promotion and tenure process. Recent changes in the BSD appear to have contributed to the confusion. Many differences were reported between departments, again emphasizing the critical nature of department Chairs and senior faculty in setting the tone and climate with respect to promotion.

OPPORTUNITY - The previous sections provide very concrete examples of factors and issues that lead to an excessively stressful promotion and tenure review, and sometimes the appearance of unequal and unfair treatment. It would be redundant to repeat all of them here, but a systematic treatment of the concerns, and particularly the roles of Chairs and senior faculty, provides many opportunities for improvement of the working climates within departments. A few of the low or zero-cost objectives would include: (1) transparency of requirements for and process of promotion and tenure review; (2) regular and meaningful pre-tenure review and guidance along with high quality mentoring; (3) elimination of any perceived differences in treatment of men and women; (4) clear expectations for the role of Chairs in assisting faculty with the review process and periodic review to assure that they are meeting those expectations.

III. OVERALL PERCEPTIONS OF WORKING ENVIRONMENT AND CLIMATE

A qualitative study such as this is not designed to establish quantitative frequency differences among groups, but some broad differences can be observed by looking at the fraction of individuals reporting similar themes within groups. With respect to overall working climate, the following patterns were noted:

- Physical science faculty were more positive than biological science faculty, especially at the University of Chicago.
- Men were more positive than women, with women in the Biological Sciences Division at the University of Chicago least satisfied with working climate.
- Among biological sciences, positive views on climate were about the same by gender, but the greatest number of negative views came from Feinberg School of Medicine due to rising expectations for research funding and perceived devaluing of other academic activities. These often quite strong views were one instance where institutional climate transcended departmental influences.
- Expressions of clearly positive views on climate were highest for Assistant Professors, followed by Full Professors, with Associate Professors a distant third. Associate Professors gave a high fraction of 'mixed' views on climate. They also expressed concerns about added administrative demands coming with promotion and tenure.
- Having respected colleagues to discuss science and collaborate with was the most important element of a positive environment.
- The second most commonly expressed attribute of a positive environment was a high-caliber intellectual climate and quality of research being performed.
- Department/unit cohesion and identity was another common contributor to positive environment.
- High quality facilities were mentioned as important by some, but the negative impact of inadequate space or resources was an important element of less positive environments.
- A number of interviewees at the University of Chicago indicated they felt they had not made a good decision to join the university, citing departmental politics and potential for a better fit at other institutions as cause for that feeling.
- No interviewees at Northwestern University indicated they felt they had not made a good decision to join the university, however, several brought up negative factors (mostly in FSM) including: the split campus with logistical challenges and negative impacts on recruiting of graduate students; an excessive focus on obtaining grants vs. highest quality science.
- A majority of faculty at both universities indicated they had considered leaving at some point, at least in a theoretical sense, but most had not pursued it actively. Reasons for not leaving included the cumulative positive attributes of being where they are and the many complications of moving – i.e. the offer would have to be very good to justify the professional and personal 'costs' of moving.

IV. RACE, ETHNICITY AND CLIMATE

No interviewees reported witnessing or experiencing differential treatment based on race or ethnicity, but most added that there were not any faculty members in their department who were not white or Asian. Most stated that they felt the lack of diversity in their department or within their institution was problematic, but noted that there are very few minority candidates for faculty positions and those who are highly-qualified are very heavily recruited by competing universities.

V. GENDER DIFFERENCES IN PERCEPTIONS OF CLIMATE AND EQUITABLE TREATMENT

Although by no means the only purpose of the study, one objective was to determine if there were differences in perceptions of climate between women and men in the participating fields. Surveys at both universities and nation-wide have noted such differences for decades but the depth of detail is often missing from surveys. This study also revealed very real and persistent gender differences with some new details on the reasons for them and, most importantly, some potential approaches toward improvement.

A number of concerns and perceptions of additional challenges faced by women with respect to promotion and tenure were outlined in that section above. Additional situations, issues and concerns were raised by about three quarters of women, and acknowledged by a number of men. These issues were similar to those typically reported and verified nationally. Among the concerns raised by some of the women were:

- More difficulty finding mentors well-matched with both professional and personal identities
- Less direct guidance from Chairs in preparation for promotion and tenure applications
- Less respect from Chairs and/or male colleagues for their science and legitimate professional advancement vs. assumptions of advancement due to gender advantage
- Being discounted when raising concerns over potential for bias in new faculty recruitment
- More difficulty getting access to leadership positions
- Much less effort by departments and the institution to retain highly successful women being recruited elsewhere compared to effort to retain equally successful men
- Women continue to commit more time than male counterparts to child care

Many women and men acknowledged that incidents of overt sexism, inappropriate comments, and omissions from leadership opportunities, have been declining over the years although they still occur periodically. However, the more subtle forms of differential treatment and exclusion continue. These include, for instance, greater attention paid to comments from men when women have said the same thing previously or social activities among colleagues that are implicitly gender-based. As one woman put it: *“There’s a lot of males in this department and they make a pretty good group together. So they go out for lunches together and that. I was invited to those lunches ... it’s not a group I identify with ... I’m not a 40-something-year-old male who [has time to go out to] lunch every day.”* Access to leadership positions is still seen to be more limited for women.

Women faculty also often feel marginalized, and feelings of isolation are more common among women, especially in departments where the number of women is very small and those who are there do not share common scientific interests. As one woman put it: *“I feel very much at the margin of any sort of climate. I have not had many or any experiences where I felt that I, my work or my career mattered to anyone ... It’s like a clique or a bunch of cliques ... I feel that the recurring issue of marginalization -- that happens a lot with women ... marginalization, or people taking things for granted.”* Few offered suggestions of how to achieve change, often invoking *Catch 22* – damned if they raised concerns and damned if they did not.

Strategies for a More Equitable Climate

Some themes emerged that could be the basis for strategies toward improvement. For many women, a key criterion for a positive atmosphere is respect – respect for their work, their field, their roles as professionals and individuals. An aligned theme is an atmosphere of collegiality. Collaborating

effectively also aligned with a positive atmosphere, with the Chemistry Department at Northwestern being noted by several as an example of such an atmosphere promoting collegiality and collaboration. Collaboration and collegiality also will do a great deal to mitigate potential isolation, with several commenting on the importance of considering the potential for scientific isolation in any hiring decisions. There were clear differences in departmental atmospheres when it came to respect and collegiality, but if some departments can achieve it there is no reason to believe that others cannot.

A second theme that came up from many was the persistent and subtle effect of unconscious bias in the differential experiences of women. Several commented on how hard it is for people, both men and women, to acknowledge they are subject to unconscious bias but all of the current research vividly portrays how ubiquitous it is. Recent research also suggests that unconscious bias can be more easily mitigated than has been thought in the past as long as it is made visible as an inescapable human quality. Frankly discussing unconscious bias, along with acknowledgement of the *Catch 22* that women face, is a practice through which effective leaders, especially Chairs, create the climate of respect that is essential for equal treatment of all and increased faculty satisfaction. Training of search committees along these lines is another possible avenue for addressing this problem and is being shown to be effective in academic settings.

OPPORTUNITY – Ensuring the success of women and faculty of color requires extra vigilance and effort on the part of Chairs. In addition to appropriate transition and mentorship guidance, attention should be paid to the creation of a collegial environment. The views of all junior faculty should be solicited and their accomplishments acknowledged.

VI. THE CENTRALITY OF DEPARTMENTS AND CHAIRS FOR THE FACULTY EXPERIENCE

One cross-cutting theme that came up repeatedly was the central importance of the Department and the Department Chair to faculty work climate and satisfaction. Perhaps this is not surprising, but it revealed that in most cases the primary relationship of faculty is with their departments, not the larger university and only infrequently some other unit such as a Center or Institute. This theme appears in the preceding sections with respect to promotion and tenure and gender differences in perceptions of climate, and also came out in several other ways, such as:

- The need for sufficient numbers of colleagues within a department with similar research interests – without this, some faculty members expressed feelings of isolation and sometimes lack of access to resources (this can be mitigated in some instance via faculty with similar interests in other departments/divisions/centers but must be consciously considered);
- A clear identity as a ‘unit’ with cohesion usually created or promoted by the Chair;
- Transparency in decision-making within the department – some individuals expressed the concern that it was seldom clear how decisions were made. Even if they are being made unilaterally by the Chair, this should be transparent and clear.
- Attentiveness to disruptive colleagues either through a sufficiently cohesive department or a strong Chair who prevents the disruptors from having as much impact as they might otherwise have.
- Regularly communicating that individuals are valued – This came up both from the perspective of visible acknowledgements of contributions and successes as well as the negative impact of overt or subtle messages of valuing some over others.

OPPORTUNITY – From the in-depth commentaries provided by those who participated in this study, it is possible to articulate the characteristics that most faculty would associate with a highly positive work climate. By making these characteristics visible they become concrete expectations that can be set forth by institutional leadership prospectively as goals and retrospectively as metrics of achievement. Responsibility for achieving them is vested in all faculty, but Chairs take on the primary responsibility for leadership in attaining them.

CHARACTERISTICS OF A “MODEL” DEPARTMENT

- A high level of expectations for professionalism and collegiality visibly set by the department Chair or equivalent leader of a primary academic unit
- Equal and demonstrable respect for the research and other academic products of all faculty
- A high level of shared scientific interests which usually requires sufficient numbers of individuals with similar research interests to enable dialogue and minimize isolation
- A geographical setting that enables faculty to ‘bump into each other’ on a regular basis and physical space that promotes formal and informal conversations around science and other topics
 - if groups of faculty are physically separated it is critical to have regular ways to bring them together
- Strong attention to providing support for early stage junior faculty as they transition toward independence with clear communication regarding available resources and normalizing, not stigmatizing, accessing support
 - a conscious, visible and department-wide strategy for mentoring which ‘normalizes’ the utility of mentoring and minimizes potential for negative stigma associated with not ‘making it on your own’
 - the approach may vary between departments but that approach should be predicated on conscious design including efforts to teach, promote and reward effective mentoring skills
 - careful choice of which senior faculty members are entrusted with mentoring of junior faculty to maximize value and minimize risks of real or perceived misuse of the power differential
- A transparent approach and process by which major departmental decisions are made
- A transparent approach to promotion and tenure, including clearly defined criteria and leadership by the Chair such that all candidates are guided explicitly and equally
- Zero tolerance for actions, attitudes or language that indicate or imply bias against or intolerance of individuals with respect to any identifying characteristic, such as gender, race, ethnicity, sexual orientation, or family choices

APPENDIX

INTERVIEW PROTOCOL

1. I would like to start by getting just a very brief history of your professional experience before you started your faculty position at [Northwestern/the University of Chicago]. Specifically, when you completed your final degree, any post-graduate training you received or other positions you held before coming here.
2. Based on your previous experiences, how well prepared did you feel to start your position here? Did you have any qualms about being ready or feelings of need for more preparation?
3. How much and what type of mentoring or guidance did you get and from whom during your first few years? Did you feel it was adequate or were you hoping for more, or possibly less?
 - a. Follow-up – How about assistance for non-academic transition needs?
 - b. Follow-up – Overall, how smooth and successful was your start at [Northwestern/the University of Chicago]?
4. How did the amount of support, broadly defined, compare to the amount of support you have seen others receive when they came into your department?
5. How would you characterize the working and personal relationships among members of your department? How has it changed, if at all, between when you started and today? How do you think they compare to the relationships in other departments here or at other universities you are familiar with?
 - a. Follow-up – How about your relationship with your chair?
 - b. Follow-up – Does your chair play a hands-on or hands-off role in your department?
6. Is your primary “identity” with your department or do you identify with as much or more with another unit, such as an Institute, Center, or the university? What are the factors that contribute to your primary identities?
7. Have you gone through a promotion or tenure review process yet? If you have, how would you characterize that experience?
 - a. Follow-up – How much support and guidance did you receive before going up for promotions? How much help and support during the process?
 - b. Follow-up – How would you change the process if you could?
 - c. Follow-up – Have your responsibilities or relationships changed since you were promoted?
8. What would you say are some of the most positive aspects of being part of our department? What about the most challenging or negative aspects of being in your department?
 - a. Follow-up – How would you describe the quantity and quality of professional conversations among members of you department? Do many members of your department collaborate? Is it encouraged or discouraged?
 - b. How do you feel about the professional network you have been able to establish both with the university and outside?
 - c. Follow-up – How much service work is expected or required of members of your department? Is the amount that you contribute less, about the same or more than most? Is this by choice or by expectation?
9. How would you describe your work-life balance today and in the past? Is this the balance you have chosen or would it be different if you had the choice?

10. Do you have children? If so, when during your time either before or since coming to [Northwestern/the University of Chicago] were they born or adopted?
 - a. Follow-up – How did becoming a parent affect your professional life and progression?
 - b. Follow-up – How did other members of your department respond when you became a parent? Did they respond differently to you than to others in the department?
11. Do you have non-work responsibilities that require significant amounts of your time, such as children, aging parents, someone in your family with substantial medical needs?
12. The expression “climate” is often used to describe the overall feeling about being part of a group. How would you describe the climate of working in your department?
 - a. Follow-up – Have there been any events that have contributed to your view of the climate of your department and/or how you feel you have been treated?
 - b. Follow-up – How do you think others in the department would describe the climate, and if they would see it as different than you, why?
 - c. Follow-up – Do you think your sense of the climate in the department or your experiences to date have been influenced by your gender, race or ethnicity?
13. How would you describe the overall climate of working at [Northwestern/the University of Chicago]?
 - a. Follow-up – How would you compare the climate for working at [Northwestern/the University of Chicago] compared to other universities or the U.S. in general?
 - b. Follow-up – Do you think the climate is different for people of different genders, races, ethnicities or any other identity group?
14. Have there been any critical events during your time here that have been especially important to positively or negatively affect your professional success?
15. Do you feel you made a good choice to come here? If so, when did you come to that conclusion?
 - a. Follow-up – Have you ever considered leaving here? If so, why, and what held you back?