

# The Dynamic between Knowledge Production and Faculty Evaluation: Perceptions of the Promotion and Tenure Process across Disciplines

J. Kasi Jackson<sup>1</sup> · Melissa Latimer<sup>1</sup> · Rachel Stoiko<sup>1</sup>

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**Abstract** This study sought to understand predictors of faculty satisfaction with promotion and tenure processes and reasonableness of expectations in the context of a striving institution. The factors we investigated included discipline (high-consensus [science and math] vs. low-consensus [humanities and social sciences]); demographic variables; and institutional support including mentoring, collegiality, work-life integration, and college commitment to faculty members' fields. High-consensus faculty members were less satisfied with promotion and tenure processes than were low-consensus faculty members ( $p < .01$ ). Faculty members who were more satisfied with collegiality ( $p < .001$ ) and with college commitment to their fields ( $p < .05$ ) were more satisfied with promotion and tenure processes. Faculty members who were more satisfied with work-life integration and mentoring were more satisfied with reasonableness of expectations ( $p < .05$ ).

**Keywords** Promotion and tenure · Roles and rewards · Faculty development · High and low consensus disciplines

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**J. Kasi Jackson** is Associate Professor of Women's and Gender Studies at West Virginia University. Her research focuses on supporting women faculty in STEM, STEM education, gendered impacts on animal behavior research, and the representation of science in popular culture. She completed her Ph.D. in biology, with a focus on animal behavior, and graduate certificate in women's studies at the University of Kentucky.

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**Melissa Latimer** is Professor of Sociology and Director of the ADVANCE Center at West Virginia University. She received her Ph.D. in Sociology from the University of Kentucky. Her research interests include equity among STEM faculty members and welfare reform.

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**Rachel Stoiko** is a post-doctoral fellow at West Virginia University. She received her Ph.D. in Life-Span Developmental Psychology from West Virginia University. Her research interests include gender and the work-family interface as well as student and faculty success, particularly in STEM fields

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✉ J. Kasi Jackson  
kasi.jackson@mail.wvu.edu

<sup>1</sup> West Virginia University, Morgantown, WV 26506, USA

## Significance and Context of the Study

Promotion and tenure guidelines codify and shape the dynamics of knowledge at academic institutions—specifically the interactions that determine what scholarship is produced and how academic institutions value it. Promotion and tenure documents reflect traditional disciplinary understanding of what constitutes solid scholarship and how it interacts with new pressures on academia to document how faculty members spend their time (Fox 2015). We hypothesized that members of low- and high-consensus disciplines would differ in their perceptions of the promotion and tenure (P&T) processes and the reasonableness of P&T expectations and that these differences would be mediated by the impact of other factors such as demographics and perceptions of institutional context.

Hermanowicz (2007) called for studies that recognize the role of local contexts in faculty members' attitudes, beliefs, and feelings about their careers and the changes in these constructs over time. Hermanowicz's research (2005) identified significant differences in the career trajectory of faculty members at different institutions based on the institutions' national rankings and their access to resources as well as their relative emphases on research, teaching, and service. Faculty members were particularly stressed when institutions that had historically emphasized teaching and service tried to increase research productivity by adopting promotion guidelines from higher-research and more selective institutions (Youn and Price 2009). O'Meara and Bloomgarden (2011) defined striving institutions as those trying to gain prestige by garnering higher rankings from external agencies.

We believe that our study adds to the understanding of context-based knowledge by focusing on a sample of respondents affiliated with a single institution which set the goal of upgrading its Carnegie Classification from Research High to Research Very High in 2009. In 2016, the institution achieved this higher rank. This research presents data from 2011, two years into the implementation of initiatives to achieve the goal. In 2009, the student-faculty ratio was higher at this institution than at peer institutions (23:1 vs 17:1). In contrast to elite research institutions, admissions at this institution are not selective; and in 2010 about 1 in 5 students was a first generation student.

As part of the effort to increase research activity, the following initiatives began in 2009. The President announced the creation of 100 new faculty lines, which included 25 focused on teaching and 75 focused on research in targeted areas. Hires occurred over the next 3 years. New faculty members were hired with higher research requirements in their appointments with special emphasis on securing external funding. This meant that some disciplines, especially in the social sciences, now required faculty members to pursue external funding when the scholarship requirements had previously only included publication. Some humanities disciplines shifted their teaching models to reduce overall faculty course loads by offering fewer but larger sections. High-research appointments (60 % research vs. the typical 40 %) were created, requiring faculty members to bring in external funds in excess of their startup packages prior to tenure. Promotable, full-time, but not tenure track, teaching appointments were created, especially to cover large, lower-level courses in order to allow for higher research productivity by tenure-track faculty members.

In general, the initiatives increased and changed research and graduate education expectations in some areas and also developed more distinct faculty tracks with greater variation in research and teaching expectations. The institution also received an NSF ADVANCE IT grant to recruit, retain, and promote women faculty members in science, math and engineering during this time. This project focused on improving external and internal mentoring for faculty

members, changing department-level climates, and upgrading work-life policy and practices across the institution; and it impacted faculty members outside of the target group.

Our research adds to the literature by investigating the impacts of key variables affecting faculty members' perceptions of the promotion and tenure process at an institution striving to move its research profile to the highest level in the Carnegie ranking system (Gardner 2013; Gonzales 2014). Building on work by Lawrence, Celis, and Ott (2014), our study defined faculty perceptions of promotion and tenure as the outcome variable rather than a predictor variable. We examined disciplinary differences among faculty members at all academic ranks and included a separate variable for work-life integration in order to separate the effects of sex and work-life integration. This analysis is important because departments experienced the new institutional requirements differentially, with some asked to secure more external funding, others to take more of the undergraduate burden and/or Ph.D. production, and all to raise the quantity and quality of their scholarship.

## Literature Review

### Low and High Consensus Disciplines

Academic disciplines can be divided into two groups, high- and low-consensus (Biglan 1973a, b). High-consensus (i.e., paradigmatic) disciplines include the natural sciences, which have a high level of agreement of what should be studied, how it should be studied, and which findings meet disciplinary norms. Social sciences and humanities are low-consensus (i.e., pre-paradigmatic) because practitioners have less agreement about what counts as knowledge. Most of the disciplinary differences reported in the literature have used level of consensus to distinguish disciplines (Braxton and Hargens 1996; Jones 2011).

Higher disciplinary consensus has been associated with greater faculty satisfaction with promotion and tenure (Hind et al. 1974). Split voting, in which some evaluators recommend tenure and others do not, occurred in the evaluation processes of fields with lower levels of consensus more often than in those with higher levels of consensus (Hearn and Anderson 2002). Based on the literature, we expected that members of high consensus disciplines would be more satisfied with promotion and tenure processes and expectations than would members of low consensus disciplines.

One limitation of the research conducted thus far is that none of these studies have controlled for demographic variables and other factors that may affect faculty members' perceptions of promotion and tenure. Our work addressed this gap by investigating the impacts of disciplinary consensus on faculty perceptions of promotion and tenure, controlling for sex, rank, first academic appointment, and variables measuring faculty members' perceptions of the context in which they are embedded. This analysis allowed us to separate the effects of these factors from the effect of the consensus level of their disciplines.

### Sex, Academic Rank, and Prior Academic Experience

Fewer women work in the high-consensus disciplines, especially in the highest-consensus disciplines (i.e., physics and engineering); and fewer women than men advance in rank in both low- and high-consensus disciplines (Institute of Medicine, National Academy of Sciences, and National Academy of Engineering 2007; Ginther and Kahn 2014; Modern Languages

Association 2009). Although criteria for tenure tended to be clearer than the criteria for promotion to full professor; lower-ranking faculty members were generally more stressed than their higher-ranking colleagues about time, professional identity, student interactions, their influence in the department, and rewards and recognition (Gmelch et al. 1986). Women faculty tended to have more negative views about promotion and tenure than men (Fox 2015) across a range of disciplines, with negative perceptions increasing as women become more senior (Barnes and Mertz 2012; Bunton and Corrice 2011; Callister et al. 2009; Fox and Colatrella 2006; Jackson 2004; Lawrence, et al. 2014; Rosser 2014). We expected to find women less satisfied than men and assistant professors less satisfied than associate or full professors with promotion and tenure processes and expectations.

Post-doctoral positions are more common in the natural sciences than in the social science and humanities disciplines; and, in general, post-docs focus on research and do not teach (American Academy of Arts and Sciences 2014). As of 2004 (the last year that data on part-time vs. full-time faculty was collected as part of the National Study of Postsecondary Faculty), the humanities (34.6 %) and social sciences (29.7 %) had a higher percentage of part-time faculty members than did the natural sciences (23.5 %) (Forrest Cataldi et al. 2005). We expected that holding a prior position, whether as post-doc or full-time or part-time faculty member, provided some additional opportunity to develop skill or confidence in one of the areas—teaching or research—evaluated. Thus, we expected faculty members with prior experience to be more satisfied with the promotion and tenure process and reasonableness of expectations.

### **Satisfaction with Institutional Support**

Institutional support while faculty members negotiate the promotion and tenure processes and expectations is important, especially for women and faculty members managing care for family members while pursuing tenure. For example, women tended to be less satisfied than men with their work-life balance (Callister et al. 2009; Gmelch et al. 1986; Johnsrud and Des Jarlais 1994). Both men and women law faculty members with children were less likely to think the tenure process was easy than those without children (Barnes and Mertz 2012). Faculty members who provide direct care for others benefited from institutional support in the form of work-life policies (Tower and Latimer 2016).

In addition to work-life support, faculty satisfaction and self-efficacy were higher when colleagues acknowledged that a faculty member's work was important (Bozeman and Gaughan 2011; Campbell and O'Meara 2014). Collegial departmental climate significantly increased faculty members', especially women's, perceptions about the transparency of promotion and tenure criteria (Fox 2015). Mentoring provided many benefits to faculty, including greater awareness of the requirements for promotion and tenure; the expectations for work in service, teaching, and research (Schrodt et al. 2003); the ability to attain satisfaction in work-life integration (O'Meara and Campbell 2011); and an obligation to mentor others (Huston et al. 2007). Yet faculty members have consistently identified mentoring as an unmet need (Bronstein and Farnsworth 1998; Jackson 2004), including at the institution represented in the study we report here.

Institutional commitment played an especially significant role when stated beliefs and values were not clearly aligned with the reward systems actually in place in either the institution or the discipline (Edwards 1999). Further, when an institution's vision for the future shifts, faculty members may resent changes in standards from those in place when they accepted their jobs (O'Meara 2002). Given these findings, we expected that satisfaction with

institutional support in terms of work-life integration, collegiality, mentoring, and commitment to a faculty member's field of study would have significant positive effects on the degree of satisfaction with promotion and tenure processes and with the reasonableness of promotion and tenure expectations.

## The Study

### Data and Sample

Data came from a 2011 on-line survey designed by faculty and staff on a strategic planning committee charged by the Dean to evaluate work-life satisfaction across departments within the College of Arts and Sciences. Faculty members took the survey two years after the implementation of the changes to reach the highest Carnegie research ranking began; thus the data provide a snapshot of faculty members' perceptions during the effort. The survey, intended as an assessment of the college faculty's current status, included items measuring perceptions of several areas of academic life key to faculty satisfaction, including promotion and tenure guidelines, faculty development programs, office space, salary, benefits, technology support, library resources, travel funding, and classrooms, among other items. Faculty members evaluated the items in terms of *their current satisfaction with the item* on a 1–5 Likert scale. The survey also elicited participants' sex, number of years at the institution, type of position (tenure-track, non-tenure track but promotable, and non-tenure track), current rank (assistant, associate, full professor), and whether this job was their first academic appointment. A total of 382 faculty members received a link to the survey; and 209 persons provided complete responses, leading to an overall response rate of 54.7 %. This study is restricted to data from those faculty members most immediately affected by the promotion and tenure process, one hundred and fifty full-time, tenure-track faculty members. The final sample was somewhat further reduced by missing key demographic data as well as by those who provided answers to some but not all of the promotion and tenure questions. Of the faculty members who completed the survey, 6 (2.9 %) did not identify their sex; and 61 (29 %) chose not to identify their department within the college. Most probably, this resulted from a desire to remain anonymous, as in some departments there were few faculty members at certain ranks within demographic categories. Among female faculty members, 61.3 % (57/93) identified their department compared to 75.7 % (84/111) of the male faculty. In terms of current rank, 80.8 % (42/52) of full professors identified their department compared to 69.1 % (47/68) of assistant professors and 62.5 % (30/48) of associate professors.

### Measures

Although the promotion and tenure items were a small part of the survey, they are the focus of this analysis. The following data from the survey were used in this project.

#### *Dependent Variables*

Six survey items dealt with satisfaction with the following aspects of promotion and tenure: 1) clarity of tenure review, 2) adequacy of feedback on performance, 3) reasonableness of expectations, 4) discipline-specific guidelines (by department), 5) electronic submission processes, and 6) alternatives to student evaluation of instruction. We used these items as

dependent variables in the preliminary analyses and for the construction of the promotion and tenure satisfaction scale.

### *P&T Satisfaction Scale*

This scale, which measures overall satisfaction with aspects of the promotion and tenure process, consists of the sum of items 1, 2, and 4. Because each of the three items provides a number from 1 to 5, the scale ranged from 3 to 15, with higher numbers indicating greater satisfaction. The average score on the promotion and tenure satisfaction scale for this sample was 12.01 with a standard deviation of 2.74. The Cronbach's alpha for the scale was .80.

### *P&T Reasonableness*

This variable differs substantially from the other three promotion and tenure variables and reduced the Cronbach's alpha when added to the scale. Thus, it was excluded from the final promotion and tenure satisfaction scale, but it was used separately as a dependent variable. The variable ranges from 1 to 5; in this sample the average score was 3.53, with a standard deviation of 1.12.

### *Independent and Control Variables.*

The institution's official classifications consider members of the history, philosophy, religious studies, English, and foreign languages departments as humanities faculty; members of the communications studies, political science, sociology, psychology, social work, and public administration departments as social science faculty; and members of the biology, chemistry, geology and geography, math, physics, and statistics faculty as science faculty. Our analysis collapses the first two classifications, using a dichotomous independent variable to code science faculty members as one and social science and humanities faculty members as zero (scientist/non-scientist). Scientists encompassed 48 % of the faculty respondents.

We compared the predictive value of participant sex; whether this was the respondent's first academic appointment; professional rank; and how faculty members rated their importance/satisfaction with college commitment to their field, mentoring, collegiality, and work-life balance to discipline in terms of perceptions of promotion and tenure processes and expectations. Female was a dichotomous variable, with women coded as one and men coded as zero. The majority (62.7 %) of tenure-track faculty in the final sample was male, and about a third (37.3 %) was female. First appointment was also dichotomous, with yes coded as one and no coded as zero. Fifty-two percent of the final sample indicated that their current job was not their first academic appointment. We coded rank as follows: assistant professors as one, associate professors as two, and full professors as three. The sample consisted of 42.7 % assistant professors, 24 % associate professors, and 33.3 % full professors.

The variables work-life integration ( $M=3.04$ ,  $SD.=1.21$ ), collegiality ( $M=3.73$ ,  $SD.=1.17$ ), mentoring ( $M=3.08$ ,  $SD.=1.21$ ), and college commitment ( $M=3.24$ ,  $SD=1.37$ ) characterized participants' satisfaction with the college context and were used as control variables in the P&T satisfaction scale and P&T reasonableness regression analyses. Pearson's correlations were conducted to test for multicollinearity between the four satisfaction variables. The results indicated that all four variables were significantly related to collegiality satisfaction. However, none of these correlations exceeded .34.

## Results

Preliminary analyses identified disciplinary differences in tenure-track faculty members' satisfaction with reasonableness of expectations and discipline-specific guidelines (by department). We used Analysis of Variance (ANOVA) to determine whether type of discipline or chance determined the variance in means and Tukey's post hoc tests to identify which, if any, of the groups differed. Levene's Test of Equality of Error Variances was also calculated to ensure the appropriateness of the ANOVA. If the variation within the groups was significantly different, ANOVA was not used. When this occurred, we conducted Welsh and Brown-Forsythe tests of Equality of Means (both are more robust tests of the null hypothesis).

Faculty members in the humanities departments were significantly more satisfied with their discipline-specific promotion and tenure guidelines than were science faculty members. The reasonableness of promotion and tenure expectations was significantly more important for the social science faculty than for the science faculty. Based upon these patterns of difference (i.e., both humanities and social scientists have significantly different perceptions of the process compared to their science peers) and the traditional classification of humanities and social science faculty into low-consensus disciplines, we decided to create the scientist versus non-scientist comparison.

We then conducted an Ordinary Least Squares (OLS) regression analysis to further investigate the impact of low and high consensus discipline membership on (1) faculty satisfaction with the promotion and tenure process and (2) faculty satisfaction with the reasonableness of the promotion and tenure process. The OLS regressions allowed us to control for the other demographic and satisfaction variables.

### Predictors of Tenure and Promotion Satisfaction

Three of the independent variables were significantly associated with tenure-track faculty members' overall satisfaction with the promotion and tenure process (Table 1). As we had hypothesized, faculty members in low- and high-consensus disciplines differed in how they rated their satisfaction with several aspects of the promotion and tenure process; but this difference was not in the expected direction. High-consensus science faculty members scored, on average, 1.58 *lower* (all other variables held constant) on the overall promotion and tenure satisfaction scale compared to humanities and social science faculty members, indicating overall less satisfaction with this process than their colleagues in lower consensus disciplines ( $p \leq .01$ ). Satisfaction with both collegiality and college commitment to their field had a significant positive impact on a faculty member's overall satisfaction with the promotion and tenure process.

### Predictors of Tenure and Promotion Reasonableness

Two of the independent variables were significantly associated with a tenure-track faculty member's satisfaction with the reasonableness of promotion and tenure expectations (Table 1). Contrary to our hypothesis, faculty members in low- and high-consensus disciplines did not significantly differ in how they rated their satisfaction with the reasonableness of promotion and tenure expectations. Participant sex, rank, and first academic appointment were not associated with this aspect of the promotion and tenure process. As expected, greater satisfaction with work-life integration and mentoring was associated with significant increases in a faculty member's satisfaction with the reasonableness of the promotion and tenure expectations.



**Table 1** Linear Regression Models—Unstandardized Coefficients (b)

	Satisfaction with Promotion and Tenure Process Scale (N = 74)	Satisfaction with Reasonableness of Promotion and Tenure Expectations (N = 72)
Scientist	- 1.58**	-.47
Female	-.10	-.13
First Job	-.31	-.02
Rank	-.46	-.07
Collegiality	.99***	.18
College Commitment	.42*	.06
Work-Life Integration	.40	.23*
Mentoring	.28	.22*
Constant	4.93	1.74
Adjusted R <sup>2</sup>	.42	.24
F	7.66***	3.87***

\* $p \leq .05$  \*\* $p \leq .01$  \*\*\* $p \leq .001$

## Discussion

Our primary purpose was to examine disciplinary differences in satisfaction with aspects of the promotion and tenure process, including clarity of tenure review, adequacy of feedback on performance, reasonableness of expectations, and discipline-specific guidelines, within the context of an institution striving to move up in Carnegie Research rankings. This study adds to the literature by looking at how demographic variables, disciplinary membership, and perceptions of institutional support affect faculty perceptions of promotion and tenure after initiatives have begun but before the attainment of the goal.

Existing literature suggests that members of low-consensus disciplines would report less satisfaction with the promotion and tenure process than members of high-consensus disciplines (Hearn and Anderson 2002; Hind et al. 1974). We found that disciplinary consensus is a significant predictor of faculty *satisfaction* with promotion and tenure processes, but not for faculty perceptions of the *reasonableness* of expectations. Further, the direction of the relationship was the inverse of our prediction, with members of high-consensus disciplines reporting *less satisfaction* with promotion and tenure processes, even when controlling for participant sex, rank, and first academic appointment, as well as satisfaction with the institutional context.

Our surprising results may reflect how low-consensus fields have implemented promotion and tenure guidelines at this specific institution. Within the arts and sciences college, each department uses a university-level document, a college-level document, and a department-level document to guide promotion and tenure processes. At the time of the study, the documents for humanities and social science departments had considerably more detail than did their high-consensus department counterparts, including greater discussion of the expectations for promotion and tenure. The latter tended to defer to the college document and/or rely on strictly quantitative requirements (e.g., number of peer-reviewed publications).

This pattern reflected greater initiative among low-consensus departments in efforts to reform the promotion and tenure processes. Faculty members within humanities departments pushed for department-specific guidelines and were the first ones to complete their documents. Most of the humanities and social science departments had approved documents in place by either 2009 or 2010 compared to 2011 or later for the science and math departments.



The emphasis on quantitative measures could have been especially significant after the adoption of expectations that faculty members attain certain quantitative, external funding goals in order to achieve tenure. In general, funding expectations increased in all fields, with faculty in some social science/humanities departments having this expectation added and faculty in science and math fields having this expectation increased. Thus, because all faculty experienced increased expectations around funding, there were no significant differences among fields in satisfaction with reasonableness of expectations.

Science faculty might have expressed more dissatisfaction with the processes because the quantitatively focused nature of their documents left them more vulnerable than their humanities and social science peers to not meeting a rigid standard and being less able to contextualize their effort than the social sciences and humanities faculty members. Further, expectations regarding grants in science and math fields in some cases became strictly quantified with numbers of awards or amounts of funding set as specific criteria, whereas in the social sciences and also sometimes in the humanities faculty members were just expected to pursue funding.

It is possible that the length and depth of humanities and social science departments' promotion and tenure documents increased overall faculty satisfaction with the promotion and tenure process. Faculty members in lower-consensus fields may also have had a more realistic view of promotion and tenure decisions than faculty in higher-consensus fields. Thus, in contrast to Hearn and Anderson's (2002) analysis of split decisions in tenure cases, dissensus could reflect the maturity of a discipline rather than its immaturity, as long as faculty members are able to engage in proactive and productive dialogue around what constitutes solid scholarship. This process may be especially challenging when expectations are changing, as is the case of striving institutions.

A state of change might be the ultimate fate of disciplines rather than fixation around what constitutes knowledge, given the increased emphasis on quantifiable and societally beneficial outcomes at academic institutions. Hearn and Anderson (2002) acknowledged that "a radical might ask whether consensus and clarity in a scholarly field might denote a kind of immaturity rather than maturity" (p. 524). They argued further that the hard sciences are experiencing fragmentation into sub-disciplines and an increase in research that crosses traditional disciplinary boundaries and that consensus may decline in those fields. Dissensus requires comfort with conflict and willingness to resolve conflict through engagement in discussion, rather than appealing to external, fixed standards. Split voting in social science and humanities fields could reflect faculty members' awareness of the complexity of evaluation and of the dynamism of their fields and their consequent comfort with disagreement.

Our results contradict the early findings of Hind et al. (1974), who found a positive relationship between faculty members' perception of consensus in their discipline with satisfaction with evaluation processes. The shift towards dissensus in the hard sciences in the four intervening decades may explain the contradiction; we did not ask faculty members for their perceptions of consensus within their disciplines. Formerly high-consensus disciplines may be slow to adapt. The process of developing transparent consensus around standards may be underway in these disciplines. Faculty members in the humanities and social sciences, perhaps, see standards as a dynamic part of the fabric of their discipline, instead of external and fixed. This difference may give them an advantage in writing promotion and tenure documents that adopt nuanced standards adaptable to context (e.g., changes in available funding for agencies such as NIH and NSF, economic downturns that make less funding available from foundations, calls by legislatures for universities to justify state investment in higher education by economic return) rather than relying on a fixed external standard.

Consensus can be understood as a measure of a discipline's identity and therefore as a way of drawing a boundary around a discipline. Differentiating departments draws boundaries

around disciplinary groupings within an academic institution. Promotion and tenure processes maintain these boundaries. Our measures of faculty perceptions of promotion and tenure processes and expectations indirectly explicate faculty members' reactions to the existing boundaries. These measures also tell us whether faculty members believe that they can and should take an active role in drawing the boundaries, defining their discipline, and establishing the criteria for faculty work. This engagement hinges on whether they see their disciplinary identity as fixed or malleable. The greater satisfaction of humanities and social science faculty members may reflect the fact that they see their disciplinary standards as malleable and themselves as having an active (agentic) role in shaping these standards. In contrast, scientists might see themselves as having to meet an external, fixed standard. In this model, low-consensus faculty members would perceive more ultimate control over their fate. These preliminary conclusions bear further investigation.

Past research finding sex differences in perceptions of promotion and tenure has not controlled for perceptions of work-life integration, which is a gendered issue (Barnes and Mertz 2012; Gmelch et al. 1986). Our results indicate that work-life challenges could explain much of the variation in satisfaction with promotion and tenure expectations that is identified between the sexes. Notably, however, we did not ask faculty members directly about their perceptions of the impact of their sex on promotion, as Bunton and Corrice (2011) had done. They found that women were significantly more likely to perceive more barriers to women's promotion compared to men's promotion. Thus, sex and sex biases may have an effect on the promotion and tenure process; and factors like implicit biases around sex could have an effect that we did not measure.

This finding is especially significant given research that indicates that women faculty members at striving institutions experience unique pressures that lead to high levels of dissatisfaction and a greater likelihood of leaving their institutions (Gardner 2013). Wolf-Wendel and Ward (2006) noted that, although tenure-track women with children at research institutions did not feel especially supported, they did indicate that such women clearly understood the expectations for tenure (i.e., its primary determination by research and publications). This finding contrasts with female faculty at striving comprehensive institutions, who were not sure which factor among research, teaching, and service would be most important to their tenure cases. The importance of clarity for women's perceptions also speaks to the benefits of nuanced expectations at the department level.

Satisfaction with collegiality was positively associated with satisfaction with promotion and tenure clarity, feedback, and discipline-specific guidelines. Several studies suggest that informal conversations with colleagues, more than formal mentoring relationships, disseminate important information about promotion and tenure processes (e.g., Schrodtt et al. 2003). Campbell and O'Meara (2014) found a strong relationship between collegiality and faculty agency in attaining their professional goals, and Fox (2015) found a strong relationship between collegiality and the clarity of the evaluation process. Mentoring, but not collegiality, was positively related to faculty members' perceptions of the reasonableness of promotion and tenure expectations. Perhaps formal mentoring impacts the ease with which faculty members perform specific tasks related to teaching, service, and scholarship in a way that collegiality does not. Mentors may also assist faculty members in determining how to perform tasks related to promotion and tenure processes in a reasonable amount of time.

The link between college commitment to one's field and satisfaction with the clarity of the promotion and tenure process suggests that a sense of security may have a significant impact on faculty perceptions. However, we only found a correlation between perceptions of college support and faculty satisfaction with the promotion and tenure processes, not the

reasonableness of expectations. Perhaps faculty understood the reasonableness of the expectations separately because unreasonable expectations might be separate from a commitment to disciplinary research. For example, a college might publicize research in the humanities indicating a commitment to this scholarship and also expect humanities faculty to teach more service courses to non-majors, leading to dissatisfaction with the reasonableness of work expectations in an area outside of research.

## Conclusion

In conclusion, we found one key disciplinary difference in faculty perceptions of promotion and tenure between members of low consensus, humanities and social science disciplines and members of high consensus, natural/physical science and math disciplines that was not due to different sex composition; rank; or perceived differences in mentoring, collegiality, work-life integration, and college commitment. This difference had to do with how standards are evaluated and/or articulated in promotion and tenure processes with faculty members in high consensus disciplines less satisfied with processes than faculty members in low consensus disciplines. Our findings also indicated that factors such as satisfaction with work-life integration can explain sex differences in satisfaction with promotion and tenure expectations. Other factors explaining faculty satisfaction with promotion and tenure include collegiality, mentoring, and college commitment to a disciplinary field. However, these factors differentially affect faculty members' perceptions of various aspects of promotion and tenure. Collegiality and college commitment are strongly linked to faculty evaluations of the overall promotion and tenure processes while mentoring is related to faculty satisfaction with the reasonableness of promotion and tenure expectations.

By documenting the connections between and among informal factors such as collegiality, mentoring, work/life integration, college commitment, and satisfaction with the promotion and tenure process, the findings of our study support prior researchers who called for institutions to promote and support leadership styles that promote healthy departmental cultures, mutual respect among faculty members, and collegiality. Our results indicate that institutions will benefit when they invest in programs that provide a variety of work-life integration benefits (i.e., parental leave, extension of the tenure clock, paid leave for elder care, etc.) and formal and informal mentoring programs for all faculty members. Implementation must be done systematically so that administrators and faculty members are universally aware of work-life benefits and utilize them correctly and consistently and so that faculty members are able to use them without repercussions to their careers (Mitchneck, Smith, and Latimer 2016). When these conditions are met, effective policies lead to less stress around promotion and tenure, as our finding about the connection between satisfaction with work life integration and the reasonableness of expectations indicates. Our finding that college commitment to a field led to more positive faculty perceptions of promotion and tenure processes indicates that institutions also benefit when administrators routinely acknowledge the value of all disciplines in meeting the overall mission of the organization. Colleges and universities should be aware that prioritizing some initiatives at the cost and/or exclusion of other disciplines can have unintended consequences in terms of faculty perceptions of the promotion and tenure process. These recommendations are especially significant in the context of striving institutions, where clear and nuanced documentation at the department level can help faculty members navigate changing expectations to achieve promotion and tenure.

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