Medicine Faculty Consider Mentoring as the Critical Issue for Development and Retention

Sood, A., Parker, T., Nieto, N., Maloney, J., Greenberg, N., Rishel Brakey, H., Myers, O., Sigl, D., & Wilson, B.

University of New Mexico

Almost 60% of junior faculty at academic medical institutions leave within ten years of hire. Specific reasons for the high rate of attrition are poorly understood. This study aims to identify and analyze factors associated with School of Medicine (SOM) faculty development and retention. A cross-sectional survey of 319 faculty exiting the University of New Mexico SOM was performed during 2009-2017. Self-reported critical issues in faculty development and retention identified the primary outcome. Secondary outcomes included characterization of mentoring and reasons for leaving. Faculty subgroups were analyzed based on sex, under-represented minority (URM) status, and physician status. Quantitative analysis used Chi-square and Fisher exact tests, and qualitative analysis identified themes. Faculty, including all subgroups, most frequently cited greater mentoring as the critical issue for development and retention. Of all participants, 62% rated mentoring advice by senior colleagues as 'helpful/very helpful'; 40% participants rated mentoring advice by the department chair as 'good/ excellent.' Most participants cited personal/family matters as their primary reason to leave, more so by physician versus non-physician faculty (p<0.001). Non-physician faculty more commonly cited 'not achieving tenure' as a reason to leave than physician faculty (p<0.001). Qualitative themes reflected those listed in the quantitative results and expanded on close-ended survey answers. More mentoring, especially by senior colleagues, is the most frequently cited critical issue in faculty development and retention by exiting SOM faculty, and needs to be supported institutionally.

Background

Faculty are the cornerstones of academic medicine. It is important but increasingly difficult to attract and retain the best faculty at academic medical centers (Alexander & Lang, 2008; Krebsbach & Ignelzi, 1999). Data from the Association of American Medical Colleges (AAMC) indicate that the 10-year retention rate of 4,279 first-time assistant professors hired from 1981 to 1997 was 43% (Alexander & Lang, 2008). The challenge of retaining faculty may be even greater for New Mexico-based biomedical and research institutions which are located in diverse, underfunded, and underserved communities and have significant proportions of underrepresented minority (URM) faculty (Rodriguez, Campbell, Fogarty, & Williams, 2014). Inadequately mentored faculty, particularly those from URM backgrounds, are less likely to be retained in academic careers, and demonstrate lower productivity on promotion metrics, and lower satisfaction with their careers (Cohen, 1998; Mahoney, Wilson, Odom, Flowers, & Adler, 2008; Nivet et al., 2008; Pololi, Cooper, & Carr, 2010). The role of mentoring in faculty development and retention at Schools of Medicine (SOM) is inadequately studied, particularly in minority-majority states like New Mexico. The objective of this study was to analyze factors associated with SOM faculty development and retention, focusing on faculty perceptions related to mentoring.

Methods

Study theoretical framework

This study is based upon a grounded theory approach (Heath & Cowley, 2004), involving two stages. The first stage involved open-ended questions that were used to develop a structured faculty exit survey. In the second stage, the structured faculty exit survey was administered.

Study Design

In this cross-sectional study conducted from 2009–2017, 319 non-retiree faculty members exiting the University of New Mexico's SOM at Albuquerque, New Mexico, completed the survey, as part of a faculty exit requirement. This paper-based survey was filled out by hand by the exiting faculty and preceded in most cases, an additional face-to-face or telephonic interview with senior faculty interviewers at the SOM Office of Faculty Affairs and Career Development, who were not in the same division as the exiting faculty. In addition to demographic factors, the survey asked for their perception of critical issues for the development and retention of faculty at the UNM SOM and primary and other reasons that influenced the faculty member's decision to leave. The survey asked faculty to comment on what they liked and disliked about the SOM and to rate the quality of mentoring they received from diverse sources.

Study Outcomes

The study identified the critical issues in faculty development and retention, as perceived by the exiting faculty, as its primary outcome. Secondary outcomes included characterization of mentoring and career advice from different sources and

reasons for leaving the SOM. Input from the study investigators helped classify the critical issues in faculty development and retention, and reasons for leaving as modifiable, potentially modifiable, and non-modifiable.

Population Subgroups

Subgroups were analyzed based on sex, racial/ethnic under-represented minority (URM) status, and physician status. Self-identification as Hispanic, African-American or Black, American Indian or Alaska Native, and Hawaiian or Pacific Islander groups defined racial/ethnic URM status. A terminal M.D. or equivalent degree defined physician status.

Analysis

Quantitative categorical analysis used frequency distributions, and Chi-square and Fisher exact tests for large and small sample size analyses respectively, employing Stata Version 12. A p value less than 0.05 determined statistical significance.

Qualitative analysis used NVivo 12 software (QSR International). NVivo auto-coded responses to open-ended questions with codes labeled as such. A qualitative researcher reviewed all qualitative responses and manually coded text into a separate coding structure that was created through a systematic iterative process. Upon completion of coding, NVivo was used to perform matrix queries to identify quote density across codes and response distribution of subgroups.

The UNM Human Research Protection Office, which served as the Institutional Review Board of record (HRPO 17-347), approved this study.

Results

Faculty most frequently cited 'more mentoring of junior faculty' as the critical issue for development and retention. The second and third most commonly cited critical issues were 'better leadership' and 'compensation.' Comparison between men versus women, URM versus non-URM, and physician versus non-physician faculty with respect to the importance of these three most commonly cited critical issues revealed no significant differences. Qualitative themes reflected those listed in the quantitative results and expanded on close-ended survey answers. One person said, "A comprehensive and systematic approach to faculty development with proper mentorship is essential. Many junior faculty are unaware of [having] a mentor and have no structured way of meeting [their] mentor. The assigned mentor is not aligned with the faculty mentee's research." Another person said, "More mentoring when I started would have been very helpful. I cobbled my career together on my own, and there's a lot I didn't know."

Table 1: Most critical issues in faculty development and retention, as reported by exiting faculty

Most critical issues	All (n=319)	Men (n=158)	Women (n=147)	P value	Non-URM (n=228)	URM (n=91)	P value	MD (n=224)	Non-MD (n=87)	P value
Modifiable factors										
Greater mentoring of junior faculty	37.9%	38.0%	38.1%	0.78	35.5%	44.0%	0.21	37.5%	36.8%	0.42
Better leadership	33.9%	35.4%	33.3%	0.39	33.8%	34.1%	0.99	33.9%	33.3%	0.99
Better organized faculty development efforts	20.7%	23.4%	18.4%	0.44	23.2%	14.3%	0.14	17.9%	26.4%	0.15
More recognition for academic pursuits	16.6%	16.5%	17.0%	0.77	17.1%	15.4%	0.65	16.5%	17.2%	0.89
Possibly modifiable factors										
Better compensation	33.5%	36.1%	31.3%	0.76	34.6%	30.8%	0.24	35.7%	31.0%	0.29

More time for academic pursuits	24.1%	22.8%	25.9%	0.70	22.4%	28.6%	0.24	25.9%	19.5%	0.76
More support for academic pursuits	26.0%	29.7%	23.1%	0.27	26.3%	25.3%	0.74	26.8%	24.1%	0.96
More opportunities for research	14.7%	16.5%	14.3%	0.22	12.3%	20.9%	0.10	15.2%	14.9%	0.84

Note 1: URM includes American Indian/Alaska Native; African American; Hawaiian/Pacific Islander; and Hispanics. Non-URM includes Asian and non-Hispanic White

Note 2: MD faculty includes those with M.D. as their terminal degree. All others are included in non-M.D. faculty, of which 72% were PhD faculty, 5% were MS faculty, and 23% held other degrees.

Note 3: Column percentages may not sum to 100% due to "No answer" category not shown or multiple 'Yes' responses.

Characterization of mentoring and career advice from diverse sources revealed that 62% of all faculty rated advice by senior colleagues as 'helpful/very helpful' (Table 2). Approximately one third of all faculty rated the advice provided by the School of Medicine Office of Faculty Affairs and Career Development as 'helpful/very helpful.' Approximately 40% of all faculty rated mentoring advice by their department chair as 'good/excellent.' Comparison between men versus women, URM versus non-URM, and physician versus non-physician faculty with respect to the characterization of mentoring and career advice from different sources revealed no significant differences. Qualitative themes reflected those listed in the quantitative results. One person responded positively and stated that "my mentors and my division chief have been invaluable to me in my career development. In fact, without them I would not be taking the step up in leadership that I am presently making upon my resignation. I am indebted to UNM and these people." Others felt a lack of mentorship sources at UNM, with one participant saying "The Office of Faculty Affairs and Career Development needs to be more involved and match mentors and mentees." Another said, "My designated mentor never met with me." And, "...I have never received helpful mentorship at UNM. If I had not pushed my advancement, I probably would still be an Assistant Professor instead of a Professor before I was 50 (years old)."

Table 2: Characterization of mentoring and career advice from different sources by exiting faculty

Characterizing mentoring and career advice	All (n=319)	Men (n=158)	Women (n=147)	P value	Non-URM (n=228)	URM (n=91)	P value	MD (n=224)	Non-MD (n=87)	P value
Senior colleagues										
Uncertain	2.5%	3.2%	2.0%	0.43	2.6%	2.2%	0.34	1.3%	5.7%	0.14
Not helpful	17.2%	17.7%	16.3%		19.3%	12.1%		17.4%	16.1%	
Helpful	27.3%	26.6%	29.9%		27.6%	26.4%		28.1%	24.1%	
Very helpful	34.8%	36.1%	34.0%		31.6%	42.9%		36.2%	34.5%	
SOM Office of Faculty Affairs and Career Development										
Uncertain	20.1%	22.8%	18.4%	0.06	20.2%	19.8%	0.40	19.2%	23.0%	0.69
Not helpful	14.4%	13.3%	15.0%		15.8%	11.0%		15.6%	12.6%	
Helpful	22.9%	25.9%	21.8%		23.7%	20.9%		23.7%	21.8%	
Very helpful	9.7%	10.1%	10.2%		7.9%	14.3%		9.8%	10.3%	
Rate Chair performance in mentoring and professional development										

Poor	22.6%	24.1%	21.1%	0.74	20.2%	19.8%	0.88	19.2%	23.0%	0.50
Fair	19.1%	19.0%	19.7%		15.8%	11.0%		15.6%	12.6%	
Good	19.4%	21.5%	18.4%		23.7%	20.9%		23.7%	21.8%	
Excellent	21.3%	20.9%	21.8%		7.9%	14.3%		9.8%	10.3%	

Note 1: URM includes American Indian/Alaska Native; African American; Hawaiian/Pacific Islander; and Hispanics. Non-URM includes Asian and non-Hispanic White

Note 2: MD faculty includes those with M.D. as their terminal degree. All others are included in non-M.D. faculty, of which 72% were PhD faculty, 5% were MS faculty, and 23% held other degrees.

Note 3: Column percentages may not sum to 100% due to "No answer" category not shown.

Most participants cited personal/family matters as their primary reason to leave, more so by physician than non-physician faculty (p<0.001; Table 3). Other commonly cited reasons to leave related to work environment included 'greater career opportunity'; 'departmental leadership'; and 'salary'. Comparison between men versus women, URM versus non-URM, and physician versus non-physician faculty with respect to these commonly cited reasons to leave revealed no significant differences, except 'greater career opportunity' more commonly cited by men than women (p=0.02) and by non-physician faculty than physician faculty (p=0.051). Although 26% of the faculty cited 'salary' as a reason to leave, only 7% of the faculty classified it as their primary reason to leave. Among less common reasons to leave, non-physician faculty more commonly cited 'not achieving tenure' than physician faculty (p<0.001); and men more commonly cited 'a more prestigious institution' and 'better geographical location' than women (p≤0.01 for both analyses). Qualitative themes reflected those listed in the quantitative results. Many faculty had general comments about "having better leadership". They mentioned wanting better feedback, communication, collegiality, and inclusion from leadership. People also expressed frustration with the system and administrative policies. Others wanted "increased doctor control over practice environment," "better operating room structure," and to "make clinical procedure turnover more efficient." Several people wished for less emphasis on generating clinical revenue and more support to pursue academic endeavors. While some faculty wished for more support in clinical practice management, others mentioned the need for more support with research and teaching.

Table 3: Reasons to leave, as cited by exiting faculty

Primary or other reason/s to leave	All (n=319)	Men (n=158)	Women (n=147)	P value	Non-URM (n=225)	URM (n=61)	P value	MD (n=224)	Non-MD (n=87)	P value
Modifiable factors										
Lack of promotion	5.3%	5.7%	5.4%	0.92	4.9%	9.8%	0.15	4.9%	6.9%	0.49
Tenure status	3.1%	3.2%	3.4%	0.91	3.1%	4.9%	0.50	0%	11.5%	<0.001
Lack of recognition	14.4%	13.3%	15.0%	0.68	13.8%	18.0%	0.41	13.4%	16.1%	0.54
Departmental leadership	27.0%	30.4%	23.8%	0.20	26.7%	32.8%	0.35	27.7%	25.3%	0.67
Departmental finances	8.2%	11.4%	5.4%	0.06	9.8%	6.6%	0.44	9.4%	5.8%	0.30
Work environment	30.7%	28.5%	34.0%	0.30	30.2%	31.2%	0.89	29.5%	35.6%	0.29
Possibly modifiable factors										
Personal/family matters	41.1%	39.2%	44.9%	0.32	43.1%	42.6%	0.95	48.7%	23.0%	<0.001
Salary	26.3%	29.8%	22.5%	0.15	27.6%	26.2%	0.84	26.3%	27.6%	0.82
Non-modifiable factors										
More prestigious institution	6.3%	10.8%	1.4%	0.001	6.7%	4.9%	0.62	4.6%	6.7%	0.49

Greater career opportunity	30.7%	36.7%	24.5%	0.02	31.1%	29.5%	0.81	27.7%	39.1%	0.051

Note 1: URM includes American Indian/Alaska Native; African American; Hawaiian/Pacific Islander; and Hispanics. Non-URM includes Asian and non-Hispanic White

Note 2: MD faculty includes those with M.D. as their terminal degree. All others are included in non-M.D. faculty, of which 72% were PhD faculty, 5% were MS faculty, and 23% held other degrees.

Note 3: Primary and other reasons to leave were combined and presented in the table.

Discussion

'More mentoring' is the most frequently cited critical issue in faculty development and retention by exiting SOM faculty at the University of New Mexico. Mentoring is most helpful when provided by senior colleagues and needs to be supported institutionally. There are no differences between men versus women, URM versus non-URM, and physician versus non-physician faculty with respect to the most commonly cited critical issues in faculty development and retention, and characterization of mentoring and career advice from different sources. Faculty cited 'personal/family matters'; 'work environment'; 'greater career opportunity'; 'departmental leadership'; and 'salary' as the most common reasons to leave. Effective mentorship of faculty may help to address several of the above-mentioned reasons to leave, and thereby improve faculty retention. This is particularly important for resource poor institutions such as the University of New Mexico SOM, as the cost of replacing a single faculty member may exceed $250,000, when recruitment, training and time to maximize income is taken into consideration (Waldman, Kelly, Arora, & Smith, 2004).

Given the difficulty and expense of recruiting and retaining high-quality faculty in academic medicine in this data-driven era of limited resources, evidence-based interventions that promote faculty retention and career success are needed. It has been suggested that organized faculty development and mentoring programs, particularly for junior faculty, can have an important influence on faculty retention and, ultimately, career success in academic medicine (Bickel et al., 2002; Fried et al., 1996; Kosoko-Lasaki, Sonnino, & Voytko, 2006; Mark et al., 2001; Ries et al., 2012; Ries et al., 2009). The impact of faculty development and mentoring programs on faculty retention may, however, not be explained entirely by the resulting improvement in traditional promotion metrics such as publications and grants. In one study, both mentors and mentees in a formal mentorship program reported that the mentees most needed guidance on time management, prioritization, and work life balance (Jackevicius et al., 2014). It is therefore possible that mentorship may help address the most common reasons to leave such as personal/family matters for SOM faculty, particularly among physicians who are twice as likely to cite this reason than non-physician faculty.

Retention of URM faculty members is a major concern for medical schools because of the high attrition among this group (Rodriguez et al., 2014). Some common challenges in the retention of minority faculty include poor mentorship, unclear criteria for tenure and promotion, and lack of understanding of institutional culture (Mahoney et al., 2008; Pololi et al., 2010). In addition, minority faculty face diversity pressures, isolation, and racism (Rodriguez et al., 2014). Our data indicate that perceptions towards mentoring and reasons for leaving do not largely differ between URM and non-URM faculty members. Faculty mentoring and development programs, particularly those coupled with diversity training, may therefore help increase retention, productivity, and promotion for URM faculty. Although not statistically significant, our data indicate that URM faculty are likely to cite 'more time to pursue academic pursuits' and 'more opportunities for research' as critical issues for faculty development and retention. This may reflect the high demand on URM faculty to provide service and to mentor URM students, leaving them less time to pursue their own academic and research interests (Brayboy, 2003; Turner, González, & Wood, 2008; Whittaker, Montgomery, & Martinez Acosta, 2015).

Although more women are increasingly choosing careers in academic medicine, women continue to be underrepresented as medical school faculty, particularly at the level of full professor and leadership positions (Bauman, Howell, & Villablanca, 2014). Our data indicate that perceptions towards mentoring and reasons for leaving do not largely differ between women and men faculty. Our data in Table 3 indicate that women faculty are less likely than men to cite non-modifiable factors, such as geographic location, as a reason to leave. Faculty mentoring and development programs may therefore have a positive influence on recruitment and retention, career satisfaction, and institutional climate to provide a more inclusive and supportive culture for women. As an example, the University of California Davis SOM established the 'Women in Medicine and Health Science (WIMHS)' program in 2000 to ensure the full participation and success of women in all roles within academic medicine and found a steady increase in the number and percentage of female faculty and department chairs, and a relatively low departure rate for female faculty (Bauman et al., 2014).

Conclusion

The high attrition rates for faculty members in medical schools across the country, particularly among women and URM faculty, is a major crisis confronting academic medicine. In New Mexico, one of the four majority-minority states in the U.S., attrition among URM faculty is of particular concern. While the benefits of mentoring are clear, it has been reported that only a minority of faculty members indicate receiving any form of mentoring (Ramanan, Phillips, Davis, Silen, & Reede, 2002). It is therefore essential that effective faculty mentoring programs be considered mandatory within medical schools. Adequate resources of time and finances must be devoted to the faculty mentoring process. Institutional accountability includes the monitoring and annual analyses of junior faculty retention to significantly decrease their current 60% attrition rate. By developing structures and policies that support mentoring, academic medical institutions in New Mexico and beyond are more likely to retain their diverse faculty and improve their satisfaction and productivity. Such interventions will help support the development of a skilled, creative, and diverse biomedical work force in New Mexico and beyond that is prepared to lead academic medicine into the future.

References

Alexander, H., & Lang, J. (2008). The long-term retention and attrition of US medical school faculty. Analysis in brief, 8, 1-2.

Bauman, M. D., Howell, L. P., & Villablanca, A. C. (2014). The Women in Medicine and Health Science program: An innovative initiative to support female faculty at the University of California Davis School of Medicine. Acad Med, 89(11), 1462-1466.

Bickel, J., Wara, D., Atkinson, B. F., Cohen, L. S., Dunn, M., Hostler, S., . . . Association of American Medical Colleges Project Implementation, C. (2002). Increasing women's leadership in academic medicine: report of the AAMC Project Implementation Committee. Acad Med, 77(10), 1043-1061.

Brayboy, B. M. J. (2003). The implementation of diversity in predominantly white colleges and universities. J Black Stud, 34, 72–86.

Cohen, J. J. (1998). Time to shatter the glass ceiling for minority faculty. JAMA, 280(9), 821-822.

Fried, L. P., Francomano, C. A., MacDonald, S. M., Wagner, E. M., Stokes, E. J., Carbone, K. M., . . . Stobo, J. D. (1996). Career development for women in academic medicine: Multiple interventions in a department of medicine. JAMA, 276(11), 898-905.

Heath, H., & Cowley, S. (2004). Developing a grounded theory approach: A comparison of Glaser and Strauss. Int J Nurs Stud, 41(2), 141-150.

Jackevicius, C. A., Le, J., Nazer, L., Hess, K., Wang, J., & Law, A. V. (2014). A formal mentorship program for faculty development. Am J Pharm Educ, 78(5), 100.

Kosoko-Lasaki, O., Sonnino, R. E., & Voytko, M. L. (2006). Mentoring for women and underrepresented minority faculty and students: Experience at two institutions of higher education. J Natl Med Assoc, 98(9), 1449-1459.

Krebsbach, P. H., & Ignelzi, M. A., Jr. (1999). Failure to attract and retain clinician/scientist faculty puts our profession at risk. J Dent Res, 78(10), 1576-1578.

Mahoney, M. R., Wilson, E., Odom, K. L., Flowers, L., & Adler, S. R. (2008). Minority faculty voices on diversity in academic medicine: perspectives from one school. Acad Med, 83(8), 781-786.

Mark, S., Link, H., Morahan, P. S., Pololi, L., Reznik, V., & Tropez-Sims, S. (2001). Innovative mentoring programs to promote gender equity in academic medicine. Acad Med, 76(1), 39-42.

Nivet, M. A., Taylor, V. S., Butts, G. C., Strelnick, A. H., Herbert-Carter, J., Fry-Johnson, Y. W., . . . Kondwani, K. (2008). Diversity in academic medicine no. 1 case for minority faculty development today. Mt Sinai J Med, 75(6), 491-498.

Pololi, L., Cooper, L. A., & Carr, P. (2010). Race, disadvantage and faculty experiences in academic medicine. J Gen Intern Med, 25(12), 1363-1369.

Ramanan, R. A., Phillips, R. S., Davis, R. B., Silen, W., & Reede, J. Y. (2002). Mentoring in medicine: Keys to satisfaction. Am J Med, 112(4), 336-341.

Ries, A., Wingard, D., Gamst, A., Larsen, C., Farrell, E., & Reznik, V. (2012). Measuring faculty retention and success in academic medicine. Acad Med, 87(8), 1046-1051.

Ries, A., Wingard, D., Morgan, C., Farrell, E., Letter, S., & Reznik, V. (2009). Retention of junior faculty in academic medicine at the University of California, San Diego. Acad Med, 84(1), 37-41.

Rodriguez, J. E., Campbell, K. M., Fogarty, J. P., & Williams, R. L. (2014). Underrepresented minority faculty in academic medicine: A systematic review of URM faculty development. Fam Med, 46(2), 100-104.

Turner, C. S. V., González, J. C., & Wood, J. L. (2008). Faculty of color in academe: What 20 years of literature tells us. J Divers High Educ., 1, 139–168.

Waldman, J. D., Kelly, F., Arora, S., & Smith, H. L. (2004). The shocking cost of turnover in health care. Health Care Manage Rev, 29(1), 2-7.

Whittaker, J. A., Montgomery, B. L., & Martinez Acosta, V. G. (2015). Retention of underrepresented minority faculty: Strategic initiatives for institutional value proposition based on perspectives from a range of academic institutions. J Undergrad Neurosci Educ, 13(3), A136-145.