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Crawford, DeLois, "Tailor-Made: Meeting the Unique Needs of Women of Color STEM-SBS Faculty Through Mentoring" (2015). Accessed from <https://repository.rit.edu/other/845>

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Tailor-Made: Meeting the Unique Needs of Women of Color STEM-SBS Faculty Through Mentoring

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Abstract—Women of Color faculty have some of the worst outcomes of all other faculty in terms of attainment of tenure and promotion. They are much more likely than others to leave a university, file suits for discrimination and face hostile work environments and classrooms, and leave academe. It is to a university’s and society’s benefit to retain talented women of color and remedy these negative outcomes. This paper seeks to address the unique concerns and issues of Women of Color through mentoring.

Keywords - Mentoring; STEM; African American; Latina American; Native American; Women of Color

I. INTRODUCTION

The underrepresentation of women of color (WoC), or AALANA (African American, Latina American, and Native American) female faculty in STEM (Science, Technology, Engineer and Math) and SBS (Social and Behavioral Science) disciplines at predominantly majority-group institutions in the U.S. is of great concern. Of faculty positions at the end of the first decade of this century, American-Indian women held 0.6 percent, Latinas held 4.0 percent, Asian American held 7.0 percent, while European-American women held 78.2 percent [3]

Delgado and Stefancic [10], Thomas and Hollenshead [20], and Cooper and Stephens [7] point out WoC faculty’s unique challenges in higher education. Compared to their majority-group female colleagues, WoC face additional barriers based on the intersections of race/ethnicity and gender. They live with multiple marginality [6,9,20,21]

The lack of effective mentoring contributes to the STEM-SBS WoC faculty’s low retention and advancement rate. Therefore, there is a need for RIT to establish mentoring programs that takes STEM-SBS WoC faculty’s unique circumstances into consideration.

II. LITERATURE REVIEW

Some form of mentoring is usually in place for new hires in many professions. Mentoring entails pairing up an experienced employee (the mentor) with a junior colleague (the mentee).

Working with a mentor can be invaluable preparation for a young professional. A mentor can help a junior employee learn about and adapt to an organization’s culture. He or she also can help a mentee get ahead by offering career advice [16]. Therefore, it would seem reasonable to expect mentoring to be beneficial in the professoriate where faculty are on probation longer than in almost any other profession and many WoC (women of color) faculty say they feel like they are on indefinite probation. However, it is well known that WoC are disproportionately denied access to mentoring due to the fact that academia has traditionally been dominated by majority-group males.

WoC in academe live with multiple marginalities [21]. Marginalization of women faculty, in general, persists as a result of exclusionary practices that foster a de facto segregation. This situation restricts opportunities for developing both formal and informal mentoring relationships by female faculty. In addition to gender marginalization, due to racial and ethnic marginalization, WoC face inequities and other obstacles in the pursuit of their career aspirations. As a result, they often develop feelings of isolation.

Many WoC recognize that mentoring and networking are important to their success [20]. However, in light of their extremely small numbers in STEM (Science, Technology, Engineering, and Mathematics) fields, they need much encouragement and support in order to survive; hence the need for the college and university administrators to provide WoC faculty with quality mentorship programs. Moody [17] believes “[M]entoring is *essential* for under-represented women in male-dominated fields..” Furthermore, she points out that “Mentoring has two dimensions: a senior person in the organization assists and advises a junior colleague regarding his/her career advancement and, secondly, provides to her less advanced colleague social/psychological support to enhance the mentee’s sense of well-being.”

A mentor should be “someone who will help you grow, move forward, challenge you, push you to be your best and...is going to advocate for you and your organization,” says Lacey Leone McLaughlin, director of executive education at the Center for Effective Organization at the University of Southern California’s Marshall School of Business [16]. The word “mentor” has its origin in Greek mythology. Mentor was a friend of Odysseus. The latter chose Mentor to educate and support his son, Telemachus, when he left for the Trojan War.

The term “mentor,” adopted in English, means someone who imparts wisdom and shares knowledge with a less experienced colleague. There are informal and formal mentors. The former provides informal mentoring that occurs naturally and is capable of providing significant benefits to both the mentor and the mentee due to the insights it provides to each. Alternatively, a formal mentor takes mentoring to the next level (a structured approach), expanding its usefulness, going beyond that of a single mentor-mentee pairing to enhance its value and effectiveness. There is evidence that mentoring benefits the mentee, the mentor and the organization. Therefore, in academia, effective mentoring has the potential to contribute to the career success of all faculty members. However, the mentoring model adopted by an institution is very important. It should have sufficient flexibility to adapt to the needs of the faculty without compromising the integrity, structure and quality of the program.

The MIT Report on the Initiative for Faculty Race and Diversity [14] recommends the need for establishing formal mentoring programs in all schools and departments, with training given to both mentors and mentees. Yolanda Flores Niemann [18] further emphasizes, “effective mentorship is critical to the success of women of color.” According to Christopher K.R.T. Jones, the Bill Guthridge Distinguished Professor of Mathematics at the University of North Carolina and a former recipient of the national Compact for Faculty Diversity, “African Americans and their under-represented faculty still receive little or no serendipitous mentoring. That’s an unconscionable gap that I see across the country. Formal mentoring programs, I agree, are the answer [17].”

It is very critical for an institution to provide a mentoring program that fits its institutional culture. The main mentoring models are: the traditional one-on-one, group-(or network) and peer-mentoring. At the University of Washington [25], for example, a network-based (or group) mentoring model is found to be appropriate for that institution. They did not find the one-on-one, single-mentor model to be an effective means for mentoring their junior faculty. They found a network of multiple mentors more beneficial than one-on-one mentoring to achieve the desired outcomes.

A. Institutional Context and Background

Founded in 1829, Rochester Institute of Technology (RIT) was an early pioneer in practice-based and cooperative education. Today, RIT is home to approximately 18,000 students (predominantly STEM majors) and is the third largest technical institution of higher education in the United States. Over one thousand full-time faculty (n=1068) support the academic and research enterprise in this tuition-driven, student-focused university. In 2014, women full-time faculty constituted only 32% of tenure-track faculty; 24% and 33% within STEM and SBS (Social and Behavioral Sciences) disciplines, respectively, and 40% overall.

RIT obtained an NSF ADVANCE IT project award (NSF ADVANCE 1209115) in 2012 entitled, *Creating Opportunity Networks for Engagement and Collective Transformation: Increasing the Representation and Advancement of Women Faculty at RIT* (or, simply, ADVANCE RIT).

ADVANCE RIT is an effort across RIT’s nine colleges, which includes STEM and SBS disciplines. The goal of the project is to increase the representation and advancement of women STEM and SBS faculty represented across ethnic, social, and cultural backgrounds. Over the past five years, RIT’s incoming classes have improved in quality and diversity and increased in size (20%). The faculty has become significantly larger, and less diverse.

III. METRODOLOGY

The present study entails analyzing data from two focus groups, consisting largely of tenure-track STEM-SBS WoC faculty, conducted at RIT during the spring of 2013. Participants were self-selected from a wide e-mail call, using the well-known snowball non-probability sampling technique. This approach was selected given RIT restrictions on providing race demographic data. Therefore, there was no way to identify prospective participants who identified with WoC groups. A scripted invitation that outlines the purpose of the project was sent out. It pointed out that the focus group discussion would be audio-and-video-recorded and that participants’ confidentiality would be preserved so that they could not be identified outside of the research group. Seven STEM-SBS WoC faculty, from science, math, and technology, participated in the focus-groups; four in one and three in the other. The focus group participants consisted of assistant professors and associate professors but were primarily junior faculty members. The participants have been at RIT for an average of four years.

A qualitative analysis of data obtained from the two focus group transcripts was performed using the constant-comparative method [4]. This enabled identification of patterns in the data sets to reveal similarities and differences.

The analysis entailed a three-phase approach. The first phase (open coding) permitted identification of ideas, themes, and issues. The second phase (focused coding) produced a reduced set of related ideas, topics and themes, and the third phase allowed for the identification of concepts that ties into the emic themes [19] that cut across the two focus groups.

IV. FINDINGS

As the research and analysis progressed, themes emerged from the meaning they represented for the subjects. In other words, the more prominent the themes were for an individual subject, the more likely it would be that they would attribute meaning to them in one or more area of their lives. Furthermore, prominence may be determined by the affect a subject uses when discussing it, or by the relative numbers of occurrence through the interview. Themes may also emanate through the wording of the interview when cross-referenced with ethnographer’s field notes and journals. In these cases, the notes may provide connections between theory and theme, creating an entirely different notion. The themes, as described by the subjects, were analogous with very personal events or social forces such as family influence, mentoring, networking in lieu of mentoring, creative mentioning, unique demands of

AALANA female faculty, or the power of education. More importantly, however, these themes granted a greater understanding about the role and function or lack of effective mentoring at RIT.

"It would be nice but right now I don't have an official constant go to person. It would be nice to have."

In general, this faculty member does not have a relationship where a senior member has taken an active role in her career development. She is not experiencing a process by which an individual of superior rank, special achievements and prestige is instructing her, counseling, guiding and facilitating her intellectual and career development. Furthermore, she is not being socialized to the rules of the academy by a senior member. She does not have someone who is accompanying her along her career to promotion and tenure. Her career development is not been viewed with a broad eye, seeing where she has come and where she is headed. For this respondent, mentoring has not empowered her to advance her career and receive tenure and promotion.

"...and I can't really pinpoint a specific thing. Just, you walk into a room sometimes and you are like, well this is odd or awkward and it takes a while to warm up. But that shouldn't be the feeling right. You should be able to walk into a room on this campus and feel like you are accepted. So no one does anything specific...but it's just a feeling you get when you walk into a room sometimes that, "hey, maybe I shouldn't be here."

The above respondent has gained entry into RIT and the profession but she finds that the environment is chilly and unwelcoming. This chilly environment may hinder her from attaining greater mobility and rewards. Her objective was focused on gaining entry into the academy and now she is being less successful in cultivating a mentor or mentors. This respondent might benefit from more than one mentor. Having several mentors would empower her more and give her more options. This might include a mentor who has interpersonal abilities or technical specifics in her profession for broad-based experiences. One mentor may make the initial contact in establishing a relationship with another mentor.

Kanter [15] noted that the centrality of power within formal organizations, along with obscure political structures, provide the means by which power mobilizes and distributes resources. Most white men want to maintain formal and informal positions within the power structure. They do this by establishing alliances with peers and sponsors. Peers and sponsors are therefore exceedingly important for women and AALANA women in particular because their sponsors, alliances, and peers are often more limited than those of males. In short, AALANA female faculty need access to the power structure that is available to majority demographics.

From stereotyping to tokenism, women of color face unique realities in the academic community. The above respondent feels excluded from communications and interpersonal activities that play an important part in promotion and tenure. This exclusion is also caused by their low numbers and their lack of entry into the formal and informal networks that provide support and opportunities to their white colleagues.

"So you have to sit there and think, is it just me? Honestly, there aren't enough of us on campus to be able to ask someone else besides you, "do you get the same vibe?" Who are you gonna ask?"

In view of the very small number of RIT's STEM WoC faculty, it is not surprising that the participants talked about a feeling of isolation and not belonging at this university. Much has been written about the negative sociological consequences of being the so-called "token" minority [20]. And there is the heavy load to be borne by being the tokenized numerical minority for performing service while having teaching and research responsibilities.

Racism and sexism are problems that concern and influence the behavior of AALANA female faculty. AALANA female faculty face a number of obstacles that make it difficult to achieve tenure and promotion. The two most prevalent obstacles they face are gendered and racial discrimination. The combination of which has been referred to as "double jeopardy" or the "double bind." Scott and Alexander [2] describe this double jeopardy when referring to African American women in particular, as: "preventing black women from formal networks such as higher educational training, and informal networks in which social relationships could possibly generate career benefits."

"Sometimes I think it's about being a women on this campus. Sometimes I do think it's about race. But no one ever says anything right?"

Although none of the respondents in this study had the benefit of a mentor in the traditional sense, all felt that mentoring was important and have or would like to assist others by being a mentor themselves. Many are involved in what can be defined as a history of relationships which have fostered individual growth. Some of these relationships are long-term, structured, formal and planned while others are spontaneous, short-lived or informal. One respondent stated:

"I have to agree with your definition of an advocate now that I'm thinking about it. So my department chair I would say is an advocate. Sometimes a mentor but not on the level of the other two, the formal and informal. If I need something he would definitely go to bat for me. Not personally, but yes definitely professionally."

Whereas the RIT STEM-SBS WoC faculty focus groups' participants recognize the value of a mentor, there appears to be some confusion concerning a formal versus an informal mentor and how either one may be able to help them to achieve career success. Not all of the participants said they have a formal mentor; however, they all said they have at least one informal mentor. One participant stated that she has a good relationship with her *mentor* whom she referred to also as her *advocate* due to the good relationship they have developed. She states that this person is her department chair. However, in order for faculty mentoring to be successful, the University must have an internal structure that supports an effective formal mentoring program. In addition, it is important to recognize the difference between a department chair-faculty relationship and that of a mentor-faculty relationship.

The department chair's focus is on achieving the goals and objectives of the department and the university while the latter is on developing the mentee professionally and personally. This distinct difference in their roles should preclude pairing new faculty with their department chairs in a mentoring program.

The lack of effective mentoring led to the creation of the P&T Smarts (informal) and P&T SMARTS (formal) program. These efforts grew out of the need to use a bottom-up management approach. A bottom-up management approach begins at a detailed view, with various segments combined to create a larger structure with a higher-level view. This approach gathered input from junior faculty at the lower levels as planning and decision-making are conducted. The nature of the P&T Smarts (informal) and P&T SMARTS (formal) missions most likely will achieve sustainable change that will build trust and communication. The loss of a substantial number of AALANA faculty at RIT points to the need to go beyond current programs and practices that the Institute currently provides and develop new programs that specifically target AALANA women to address the unique issues and needs they have as WoC faculty at a predominantly white institution.

A. *P&T Smarts (informal)*

This P&T Smarts will be facilitated by Dean Hector Flores (Graduate Studies Office) with the partnership of experienced faculty that will engage in informal mentoring and guidance. The process leading to tenure and promotion at an academic institution is sometimes fraught with tension and uncertainty. The purpose of P&T Smarts (informal) is to build a community of support and strategic thinking around issues of tenure and promotion. Experienced faculty and administrators will facilitate regular discussions on the various issues confronting faculty, engage in deep discussion about *smart* strategies and help develop a sense of common purpose and support that can eventually lead to a sustainable pipeline for success and a stronger community of teachers and scholars. Hands on exercises will be conducted as appropriate on issues ranging from networking, building relationships, to best practices to write and present scholarly work, building a strong and balanced promotion and tenure portfolio, etc. The only requirement for joining P&T Smarts is to commit 1-2 hours a month for reading or other assignments as appropriate.

B. *P&T SMARTS (formal)*

Under the leadership of Dr. dt ogilvie, Distinguished Professor of Urban Entrepreneurship, Former Dean of Saunders College of Business, and founder of the Center for Entrepreneurship (CUE), a CONNECT Provost Grant, Promotion & Tenure Strategies for Minority-women Academics at RIT for Transformative Success (P&T SMARTS) was funded with the primary goal to actively help non-tenure and tenure AALANA women faculty develop successful careers at RIT. It helps to retain them through a multi-faceted strategic approach that offers advice, feedback, guidance, and best practices that reflect a deep understanding of the unique issues and challenges that AALANA female faculty face.

Activities fall into several categories: mentoring and sponsorship, research and writing productivity, teaching

effectiveness classrooms that exhibit racial and/or gender oppression, time management, work/life balance, and professional SMARTS. Workshops will be designed to convey valuable information to the participants and provide training in how to develop and inculcate the skills into the faculty member's repertoire. This will be accomplished by improving communication, increasing transparency, providing consistency, and adding measures of accountability into the process.

Another important aspect of P&T SMARTS is the mentoring of the AALANA-Women faculty. Our model advocates that the participants develop a strategic mentoring plan, which entails that in addition to any mentoring provided by their units and mentoring by the team members, they develop a broad base of mentors for various aspects of their careers and look for cross-mentoring. That means they may look for writing mentors, teaching mentors, work/life balance mentors, mentors from their racial/ethnic group and mentors from other racial/ethnic groups, etc.

V. CONCLUSION

The unique experiences of WoC female faculty are often rendered invisible within the academy, obscured by scholarship devoted to either women as a whole or all people of color. The present mentoring initiatives at RIT have failed to capture the intersection of gender and race/ethnicity where the unique needs and experiences of women of color reside, silenced and masked within these contexts.

The lack of effective mentoring contributes to the WoC female faculty low retention rate and advancement rate. Therefore, there is a need for RIT to establish mentoring programs that takes STEM-SBS female faculty's unique circumstances into consideration.

The WOC social science research component seeks to remedy this oversight by giving voice to this subpopulation. Through implementation of the P&T Smarts (informal) and the P&T SMARTS (formal) seeks to tackle the lack of effective mentoring specific to women of color faculty by looking to the bottom-up approach to improve outcomes for female faculty as a whole.

By having examined the characteristics, lived experiences, perceptions, policies and institutional outcomes of women of color STEM-SBS faculty at RIT, unique barriers and catalysts to promotion and tenure and advancement are identified. The P&T Smarts (informal) and P&T SMARTS (formal) strategies or interventions will address these barriers.

ACKNOWLEDGMENT

The author gratefully acknowledges the support provided by the National Science Foundation (NSF) under Award No. 1209119 NSF ADVANCE Program. Any opinions, feelings, and conclusions or recommendations expressed in this material are solely those of the author and do not necessarily reflect the views of the National Science Foundation.

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