Centering Women Faculty of Color in a Metasynthesis of Research on Mentoring

By Cara Margherio, PhD

About the ARC Network

Funded by the National Science Foundation ADVANCE Program, Awards HRD-1740860 and HRD-2121468, the ADVANCE Resource and Coordination (ARC) Network seeks to achieve gender equity for faculty in higher education science, technology, engineering, and mathematics (STEM) disciplines. As the STEM equity brain trust, the ARC Network recognizes the achievements made so far while producing new perspectives, methods and interventions with an intersectional, intentional and inclusive lens. The Women in Engineering ProActive Network (WEPAN) serves as the backbone organization of the ARC Network.

About the Virtual Visiting Scholars

The Virtual Visiting Scholars (VVS) program provides a unique opportunity for select scholars across disciplines to pursue research meta-analysis, synthesis, and big data curation on topics crucial to STEM faculty equity. VVS analyze existing research and data, synthesizing different, sometimes competing, perspectives, frameworks, metrics, and outcomes to offer new insights and applications to the broader community.

About the Author

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Executive Summary

Frames are used in the front-end of a paper to situate the study within a larger body of literature. All of the studies use frames regarding the barriers and challenges facing women of color faculty. The most common challenges discussed in framing were isolation, underrepresentation, and discrimination and bias. While these references to underrepresentation framed it as a challenge, some studies also employed underrepresentation in more nuanced and conflicting ways throughout the front-end of their papers. Others argued that mentoring was needed to overcome underrepresentation; and another also argued that systemic change is needed to improve representation. All the studies presented findings affirming the value of mentoring for women of color faculty. The most common benefits of mentoring were navigational capital and problem-solving or advice. One of the studies also presented

evidence that mentoring can lead to systemic change; in the data supporting this claim, one of the study participants described how she raised awareness of issues to folks in senior positions by mentoring up.

The articles presented a range of findings regarding who is the ideal mentor and the characteristics of successful mentoring relationships: receiving mentoring from White faculty members and from others who shared their race, gender or both.

Methods

This study utilizes meta-synthesis to investigate what we currently know from the research literature about the mentoring experiences of women of color faculty in STEM higher education. Meta-synthesis integrates and interprets patterns across qualitative studies that explore the same or closely related topic, with the goal of theory-building. This methodology is an essential tool in researching higher analytic goals, enhancing the generalizability of qualitative research, and creating a more comprehensive understanding of the topic at hand (Finlayson and Dixon 2008; Sandelowski, Docherty, and Emden 1997; Walsh and Downe 2005; Zimmer 2004). If used as a tool of reduction and aggregation, meta-synthesis risks violating the tenets of the interpretative paradigm (Sandelowski, Docherty, and Emden 1997; Zimmer 2004). Careful attention must be given to the assumptions underlying any differences in methodologies of the individual studies, and contradictory findings across the studies must be explored for theory development (Zimmer 2004).

Selection Process

The first step of a meta-synthesis is the selection of studies and determination of inclusion criteria. At this stage, the comparability of articles must be considered on several factors, such as methodology, sampling, data collection and analysis, and disciplinary background of the researchers (Sandelowski, Docherty, and Emden 1997). The goal is to find all the relevant articles on a specified topic, not merely a sample (Walsh and Downe 2005). While prior meta-synthesis analyses range in size from four to over 100 studies (Finlayson and Dixon 2008), Sandelowski, Docherty, and Emden (1997) suggest to limit meta-synthesis to no more than 10 studies, as larger sample sizes "impede deep analysis and, therefore, threaten the interpretative validity of findings" (p.368). In order to create a dataset of studies that is both small enough for the analysis to preserve the integrity of the individual studies and comprehensive enough to include all of the relevant studies, the scope and inclusion criteria must develop in an iterative manner (Walsh and Downe 2005).

Utilizing Google Scholar, the initial searches included the broadest relevant search criteria: "mentoring 'women of color' faculty" and "mentoring minority women faculty". Then, a series of searches with criteria that included specific racial/ethnic categories (in addition to "mentoring faculty" were run): African American, Alaskan Native, American Indian, Asian, Black, Chicana, Hispanic, indigenous, Latina, Native American, Native Hawaiian, and Pacific Islander. A series of searches with criteria with specific disciplinary categories (as defined by the NSF definition of STEM along with medicine) were then run: STEM, science, technology, engineering, math, astronomy, chemistry, computer science, geoscience, life science, physics, psychology, social science, STEM education, and medicine. Further

variations with specificity on both racial/ethnic categories and discipline (e.g., "mentoring Black women Chemistry faculty") were tested, however this approach did not yield any unique results.

A total of 28 unique searches were run and assessed. With the first two sets of broad searches, the first 200 items of each set of results were reviewed; for the more specific searches (which yielded substantially smaller numbers of studies), the first 100 items of results for each search term combination were reviewed. At this stage, only the title and abstract were reviewed to determine potential inclusion in the study (i.e., if the article was relevant to the meta-synthesis project). In addition to running searches through Google Scholar, a citation snowball method was used to identify additional studies. That is, the references cited within the studies that were found by the search procedure were reviewed, as well as articles that references any of the studies found by the search procedure. To assist in comparability, only articles from peer-reviewed journals were included.

The search procedures described above created a list of 33 studies for potential inclusion in the meta-synthesis. The initial inclusion criteria required that an article be: (1) a qualitative study focusing on (2) the faculty mentoring experiences of (3) women of color faculty within (4) STEMM fields broadly or a specific fields(s) within STEMM. Only three studies met all of these criteria. In the second iteration of the inclusion criteria, the third item of the criteria was expanded to include studies focusing on faculty of color and/or women faculty, if they separated out women of color faculty in their analyses. However, this did not add any new articles to the dataset, as none of the articles disaggregated their results by gender (if the focus was on faculty of color) or race (if the focus was on women faculty). In the third iteration of inclusion criteria, the fourth item of criteria was expanded from STEMM to academia, so that the inclusion criteria required an article be: (1) a qualitative study focusing on (1) the faculty mentoring experiences of (2) women of color faculty within (3) academia broadly. Using these criteria, a total of eight studies were selected for inclusion in the meta-synthesis, as shown in Table 1.

Table 1. Characteristics of the Articles within the Meta-Synthesis Dataset

Author(s)	Year	Population	Disciplinary Scope	Article Title
Buzzanell, Long, Anderson, Kokini, and Batra	2015	Women of Color	Engineering	Mentoring in Academe: A Feminist Post-structural Lens on Stories of Women Engineering Faculty
Crawford and Smith	2005	African American Women	Academic Administration	The We and the Us: Mentoring African American Women
Daniel	2009	Black Women	Psychology	Next Generation: A Mentoring Program for Black Female Psychologists
Elliot, Dorscher, Wirta, and Hill	2010	Native American Women	Medicine	Staying Connected: Native American Women Faculty Members on Experiencing Success
Holmes, Land, and Hinton-Hudson	2007	Black Women	Academia	Race Still Matters: Considerations for Mentoring Black Women in Academe
Smith and Crawford	2007	African American Women	Academic Administration	Climbing the Ivory Tower: Recommendations for Mentoring African American Women in Higher Education
Thomas and Hollenshead	2001	Women of Color	Academia	Resisting from the Margins: The Coping Strategies of Black Women and Other Women of Color Faculty Members at a Research University
Tran	2014	Women of Color	Academic Administration	The Role of Mentoring in the Success of Women Leaders of Color in Higher

Data Analysis

The eight studies in the dataset were analyzed through emergent coding and an abductive analysis approach. Through iterative moves between the data and theory building, abductive analysis seeks to develop new insights, building upon existing theory while not being restrained to predefined theoretical concepts (Timmermans and Tavory 2012). Using NVivo qualitative data software, each transcript was read three times and coded on the second and third reads. The coding scheme was updated and revised with emergent codes throughout the coding process and memo writing was used to analyze the coding categories (Charmaz 2001).

Description of the Dataset

The studies range in scope from one institution (n=2), Hispanic-Serving Institutions (n=1), four-year Predominately White Institutions (n=1), colleges and universities based in New York State (n=2), and nationwide (n=1). The two studies that based in New York State are by the same authors and appear to be using the same dataset. Of the eight studies included in the dataset, seven studies utilize interviews (including secondary analysis of interview data collected for another purpose), and one study presents program evaluation data. One study explicitly states that they are utilizing a phenomenological approach, and two studies note that they used emergent coding as their analysis method.

Looking at the discipline, in three of the articles the first author is in Education, in two articles the first author is in Sociology, and in one article each the first author is in Communication, Medicine, or Psychology. In five of the six articles with co-authors, the co-authors belong to the following disciplines: Communication and Mechanical Engineering; Computer Information Systems and Education; Medicine; and Sociology (two articles). In the remaining article with co-authors, the discipline of the co-author is unknown.

Preliminary Findings

Frames

Frames are used in the front-end of a paper to situate the study within a larger body of literature. All of the studies make use of frames regarding the barriers and challenges facing women of color faculty. The most common challenges discussed in framing were: isolation (n=7), underrepresentation (n=7), and discrimination and bias (n=6). While these references to underrepresentation framed it as a challenge, seven of the studies also employed underrepresentation in more nuanced and conflicting ways throughout the front-end of their papers. Two of the studies argued that mentoring was needed to overcome underrepresentation (Buzzanell, Long, Anderson, Kokini, and Batra 2015; Crawford and Smith 2005); one of these studies also argued that systemic change is needed to improve representation (Crawford and Smith 2005). Two of the studies noted that underrepresentation and the associated marginalization can be sources of power (Daniel 2009) and spaces of resistance (Thomas and Hollenshead 2001), while Train (2014) argued that women of color are causing systemic change by resisting assimilation.

Six of the eight studies also employed frames relating to the importance of mentoring; three of these studies also included qualifications on the value of mentoring. Both articles by Crawford and Smith noted that individuals may succeed without mentors and that mentors do not guarantee success. Buzzanell et al. (2015) went further in qualifying the importance of mentoring, by presenting a critique of the "grand mentoring narrative," writing:

> "The anticipated benefits along with the assumed productive relationships create a grand mentoring narrative suggesting not only that mentoring is required for academic career and life success but also that mentoring processes and practices can be standardized, regardless of individuals' differential experiences, backgrounds, and needs that might necessitate different mentoring forms and content." (p.441)

Value of Mentoring

All of the studies presented findings affirming the value of mentoring for women of color faculty. The most common benefits of mentoring were navigational capital (n=6) and problem-solving or advice (n=6). One of the studies also presented evidence that mentoring can lead to systemic change (Tran 2014); in the data supporting this claim, one of the study participants described how she raised awareness of issues to folks in senior positions by mentoring up.

The articles presented a range of findings regarding who is the ideal mentor and the characteristics of successful mentoring relationships. In two of the studies, participants found successful mentoring relationships through working with White faculty members (Holmes, Land, Hinton-Hudson 2007; Tran 2014). One of these studies also presented data that participants were most successful with mentors who shared their race, gender, or both (Holmes, Land, Hinton-Hudson 2007). While five of the studies found that their participants experienced successful peer mentoring relationships, three of these same studies also presented data on the importance of hierarchal one-on-one mentoring relationships.

Four of the studies presented data on the challenges that their participants experienced within mentoring relationships, including contentious relationships with their mentor and a general sense that mentoring is mysterious and not understood. Six of the studies also included participants who did not receive mentoring. In the two studies by Crawford and Smith, none of their participants had a mentoring relationship—however, the authors restricted the definition of mentor to be "one who is further along in an educational career than you are, perhaps in administration, and who counsels you and looks out for your career" (p.60). This definition excludes peer mentors and mentors that may exist outside of academia; indeed, in the data they present, the women spoke to having peer and non-academic mentors, yet the authors conclude that these women received no mentoring.

References

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Appendix

Codebook: Meta-synthesis of the Mentoring Experiences of Women of Color Faculty

High-level characteristics

- Abstracts
- Keywords
  - Academic administration
  - African American
  - African American women
  - Black women
  - Career
  - Dignity
  - Engineering
  - Gender
  - Higher Education
  - Meaningful work
  - Mentoring
  - Minority career development
  - Narrative
  - No key words given
  - Post-structural
  - Professional development
  - Race
  - Research careers
  - STEM
  - Women leaders of color
- Citations of other papers included in this study
- Discipline of authors

- First author
  - Communication
  - Education
  - Medicine
  - Psychology
  - Sociology
- Other authors
  - Communication
  - Computer Information Systems
  - Education
  - Mechanical Engineering
  - Medicine
  - Sociology
  - unknown
- Key finding
  - Disrupt grand narrative, mentoring is raced, classed, gendered, etc.
  - Lack of mentors for African American women in administration
  - Mentor makes professional success possible
  - Women of color resisting in order to succeed
- Main purpose
- Methods
  - Description of intervention
  - Description of themes
  - Description of subjects
  - Emergent coding
  - Feminist post-structural narratological stance
  - Interviews

- Phenomenology
- Program evaluation
- Secondary analysis of survey and interview data

- Setting
  - 4-year predominantly White institutions
  - Large state university in Great Lakes area
  - National
  - New York State colleges and universities
- Theoretical Frameworks
  - Black feminist thought
  - Post-structural feminism

Defining Mentoring

- Given definition
- Mention of peer mentoring, multiple mentors
- Purpose of mentoring
  - Build mentees network
  - Increase women in STEM
  - Instrumental support
  - Psychosocial, emotional support

Frames

- Barriers
  - Academic values do not align with cultural values
  - Barriers to professional socialization
  - Discrimination and bias
  - Enviro of cultural homogeneity
  - Expected to represent all women of their race
  - Focus on finding right job rather than succeeding at job they have

- High service commitments
- Hostile environment, climate
- Intersectional
- Isolation
- Lack access to resources
- Lack mentors
- Lack networks
- Lack of role models
- Lack of sensitivity
- Lack of trust
- Lack of visibility
- Limited opportunities for advancement
- Low status
- Marginal position
- Pressure
- Stereotype threat
- Unclear P and T requirements
- Underrepresentation
- Undeserved scrutiny
- Women of color choices and career paths
- Women of color viewed as threat

Career development research, career paths

Different cultural definitions of success

Discipline of authors specific framing

- Mentoring as constituted communicatively
- Racial history of Psychology

Importance, value of mentoring, research on mentoring

- Benefits to mentee of mentoring
    - Lit on benefits of mentors to all women
    - Lit on benefits of mentors to people of color, including men
- Challenges to success of mentor relationships
- Characteristics, timing influence mentoring impact
- Cross race mentoring
- Mentoring and women of color
- Mentoring can shift overall paradigm
- Mentoring improves institutional diversity
- Mentoring is reciprocal
- Peer and multiple mentors
- Qualifies or limits the view of mentoring as always positive
- Race matters
- Racial differences w Whites

Systemic change needed

Underrepresentation

- Causes
- Lack of research on women of color
- Margins as source of power, resistance
- Mentoring as one intervention designed to address this
- Need mentoring to improve representation
- Need systemic change to improve representation
- Need to increase rep to change research
- Need to increase rep to recruit, retain Black students
- Women of color on the margins

Women of Color

- Intersectional

- Racialized experiences of Women of color, code switching
- Women of color as caretakers, self-care
- Women of color changing higher education
    - Developing support networks
    - How Women of color cope, succeed, resist given marginality
    - Resisting assimilation

Findings re: Mentoring

- At graduate student level
- Bad mentoring experiences
- Centrality of race
- Challenges
    - Assigned mentors not clicking
    - Did not recognize mentoring opportunities
    - Difficult finding now that she is in Sr position
    - Lack of role models with same identities
    - Mentor mentee competitiveness
    - Mentoring is mysterious, not understood
    - No compliments or encouragement
- Changes over time
    - Early on, institution invests in mentoring
    - Early on, prevent from dropping out
    - Later, shows adaptability to changes
    - Mentors leave your institution over time
    - Still need mentoring in Sr positions
- Characteristics of successful mentoring relationships
    - Advocates
    - Allow for diversity of obligations and values

- Attentive to intersectional identities
- Emotional support
- Instrumental support
- Role modeling

Description of mentoring program or intervention activities

Experience of mentoring impacted by identity

Lack of mentoring

- Because they focused on job access and not mobility
- Blames self for lack of mentoring
- Did not know what did not know
- Did not realize need
- Does not pursue
- Led to uncertainty about career path
- No traditional mentors
- Nontraditional path in way of finding mentor
- Others assumed she didn't need it
- Subbed observation of what not to do
- Trained but not nurtured
- Wishes had mentor

Types of mentoring

- Author is dismissive of peer mentoring
- Hierarchical one on one
- Mentoring up, supervisors
- Peer mentoring
- They serve as the mentor

Value of mentoring at individual level

- Accountability

- Career development and advancement
- Connect with other Women of color in academia
- Emotional support
- Encourage self-care
- Feedback on manuscripts and grant apps
- How to lead, take care of staff
- Increase persistence
- Increased network
- Learn to ask for what need
- Mentoring leads to individual success
- Navigational know-how
- Personal info, Referrals for personal matters
- Problem solving, advice
- Provide meaning and purpose
- Raise awareness
- Research, data analysis
- Role model
- Socialization
- Someone to battle with you in the work
- Understanding politics
- Validate experiences

Value of mentoring at systemic level

- Can create change by mentoring up
- Catalyst for institutional change

Who initiates mentor relationship

- Both institution and mentee responsible
- Institution

- Mentee
- Mentor
- Who is ideal mentor
  - Can be cross cultural, White
  - Need multiple, diverse perspectives
  - Peer with same identity
  - Senior to their current position
  - Shared gender
  - Shared race
  - Someone dedicated to mentoring
  - Someone whom other professors respect
  - White man

Findings not about mentoring

- Challenges
  - Cautious, expecting racial or gender problems
  - Excess demands by students for support
  - Excess service demands
  - Having to choose between academic and cultural values
  - Isolation
  - Lack of respect from colleagues
  - Must work harder as a woman of color
  - Others assume women of color have advantages
  - Unwritten rules
- At the individual level
  - Definitions of success change over time
  - Fluid subject positions
  - Important to establish relationships with those in power

- Importance of networking and professional development
- Need to build support system
- Re race
  - Cultural obligation to give back
  - Cultural values and definitions of success
  - Difficulties engaging with White colleagues
  - Differences across URM women by race, ethnicity
  - Importance of community
  - Location on the margins
  - Overcoming racist culture
  - Separation of work and personal life
  - Similarities across URM women regardless of race, ethnicity
- See self as DEI change agent
- Socialization through observation of others' mistakes

At institutional or cultural level

- Adding a few Women of color to power does NOT equal real change
- Call for culture change
- Climate as a challenge, unwelcoming
- Inadequate support for Women of color
- Leadership must set tone for DEI
- Local climate can be more challenging than national
- Low retention rates at PWIs
- Mentors as part of culture change
- Race as primary and central

Differences with White experiences

Suggestions for further research

- Black feminist thought, critical race theory on Black Women's experience

- Black women and mentoring in STEM
- Compare African American women in administration with and without mentors
- How to address cultural issues and cultural identity in mentoring
- On different employments, authorial voices, subject positions
- Research on the mentoring experiences of Women of color beyond Black women
- What mentoring models work for who and in what context
- Who has access to mentoring

Implications

- Advice for mentors
  - Commitment, not race, is most important characteristic of mentor
  - Mentoring needs to address professional AND personal
  - Mentors need to recognize, honor cultural identity
  - Mentors need to support changing needs over time
  - Suggestions specific for majority mentors
  - White mentors must attend to cultural differences
- Argue for their theoretical approach
- Authors give advice to junior faculty
  - Ask for assistance
  - Develop networks
  - Develop research agenda
  - Find community of color
  - Find mentors to help turn dissertation into publications
  - Have a personal life
  - Institutional fit matters
  - Nurture mentoring relationships over time
- Call for critical approach to mentoring research
- Call for mentoring