The Experiences of Native American Women Physician Faculty in U.S. Medical Schools:

Culture, Diversity, and Retention

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Dedication

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Abstract

Along with their knowledge surrounding the issues of critical health disparities and needs of Native American people, Native American women physicians, with their unique cultural perspectives regarding race, gender, and health care are invaluable assets to medical school faculties. However, while Native American women make up 0.8% of the county's total population, they are only 0.2% of all physicians on medical school faculties. The focus of this study was to explore the experiences of Native American women physician faculty along with associated factors in medical education and school cultures to gain fuller understanding of their lack of representation. In today's increasingly diverse nation, a diverse medical school faculty is a key component of excellent medical education. These faculty guide students in their development of the attitudes, skills, and knowledge needed to deliver quality care for all of their future patients. Diverse faculty can also influence and enrich curricular offerings by ensuring the inclusion of minority health issues and they often conduct research on health disparity issues concerning diverse populations. Despite their ability to contribute, retaining diverse faculty members has been historically problematic largely due to multiple barriers in the cultures of medical schools. This study used existing data from interviews with five successful Native American women physician academicians along with publications regarding academic medicine found primarily over the past five years. Analysis resulted in four major themes related to faculty development and retention of underrepresented minorities, including Native Americans, in medical schools: (a) diversity in medical education, (b) mentorship, (c) importance of Native American culture, and

(d) institutional factors. Perhaps the most salient finding was the embodiment of Native American culture and community connection in all areas of the lives of the women interviewed. Better understanding of the experiences and issues encountered by Native American women physicians in medical schools will help increase their numbers and alleviate underrepresentation.

Table of Contents

CHAPTER 1. INTRODUCTION

Problem and Background

Along with their knowledge surrounding the issues of critical health disparities and needs of Native American people, Native American women physicians, with their unique cultural perspectives regarding race, gender, and health care are invaluable assets to medical schools. The focus of this study was to explore their experiences along with associated factors in medical education and school cultures to gain a fuller understanding of their lack of representation.

While scholarly consideration of possible methods to increase diversity in academia can be very helpful in guiding institutional efforts, the bulk of research to date has had a broader focus on the experiences of all underrepresented faculty. Research addressing the facilitation of success among minority women has been limited, and that which concerns Native American women is essentially nonexistent. In this study, five Native American women physician medical school faculty conveyed their experiences through interviews in 2006-2007. In combination with published literature from primarily the past five years, the reflections these women helped to provide a clearer picture of issues surrounding diversity in medical education and the careers of underrepresented minority (including Native American) faculty members. The results of this study can be helpful in suggesting further inquiry and possible recruitment and retention models to help address the lack of Native American women physician faculty in our medical schools.

The central goal of medical education is to ensure accessibility to quality health care for all and is rooted in patient care, medical education, and research. In striving toward excellent patient care in an increasingly diverse U.S. population, it is essential that there is an adequate number of diverse physicians and that all medical students are equipped to enter the physician workforce as competent providers with the appropriate awareness, knowledge, and skills needed to treat all of their patients (Smedley, Stith, & Nelson, 2003). During their medical education, students learn to look to physician faculty members as "role models that help them formulate their ideas and personae of what it means to be a 'physician'" (Lypson, Gruppen, & Stern, 2002, p. S10). These faculty members act as mentors and help to ensure a curriculum that addresses minority health and cultural awareness. The Association of American Medical Colleges (AAMC, 2009b) stated that diversity in medical education settings creates "a robust learning environment" where students "are exposed to a broader range of ideas, experiences and perspectives and are thereby better prepared to meet the needs" of diverse patients (p. 2). Such environments facilitate a welcoming and inclusive atmosphere where all students, including minority students, may thrive.

Minority populations experience striking health disparities and can expect to die younger than their white peers. Many minority health concerns are not adequately understood, and research in these areas is critically needed. Cohen, Gabriel, and Terrell (2002) write that faculty researchers tend to focus their efforts "on problems that they 'see' and have an interest in" (p. 94). Diverse faculty are more likely to study areas that

they have experienced or can relate to, including minority health, and can thereby add to the body of knowledge needed to address these concerns.

Retention of diverse faculty members has been historically problematic and is due in large part to multiple barriers found in medical schools. Among common barriers is an inability to access the mentorship essential to successful retention and development. Palepu et al. (1998) concluded that junior faculty members who had the benefit of mentorship were more likely to have stronger research skills, be awarded grants, and report higher career satisfaction. Conversely, the lack of mentorship is a primary reason that underrepresented faculty in academic medicine choose to leave their positions (Levine, Lin, Kern, Wright, & Carrese, 2011). In medical school settings, minorities often experience feelings of isolation; Mahoney, Wilson, Odom, Flowers, and Adler (2008) reported that the availability of minority mentors can provide not only professional support, but also "cultural and emotional support and a sense of belonging to a community" (p.784). Sensitivity to cultural factors can strengthen retention, Elliott, Dorscher, Wirta, and Hill (2010) found that the importance of giving back and connectedness to their communities were highly valued among Native American women academic physicians.

Institutional cultures play a significant role in retention; the existence of adverse environments elevates barriers for underrepresented minority faculty members. To better recruit and retain minorities, it is incumbent on the institutional leaders to prioritize diversity and "facilitate an inclusive, humanistic, relational and energizing environment

in academic health centers; to help all individual faculty and trainees to reach their full potential" (C-Change National Initiative, 1997, n.p.).

Study data were obtained from interviews conducted in 2006-2007 with five Native American women physicians in successful medical school faculty careers along with a review of academic medicine literature from primarily the past five years. Analysis of the data yielded four major themes that related to faculty development and retention of underrepresented minorities, including Native Americans, in academic medicine: (a) diversity in medical education, (b) mentorship, (c) importance of culture, and (d) institutional factors.

At the time of the interviews, the study participants made up 29.4% of the 17 total women Native American physicians on U.S. medical school faculties (these 17 were 0.1% of the total U.S. medical school faculty holding an M.D.) (AAMC, 2005b). As of 2011, the AAMC reports that the representation of Native American women physician medical school faculty continues to loom around 0.2% , however, Native American women comprise 0.8% of the today's total U.S. population (U.S. Census Bureau, 2012a). At this rate of increase, combined with the growing Native American population, parity cannot be expected until far into the future.

The results of this study provide an overview of what has been learned about factors related to retention of underrepresented minority faculty in medical schools and adds to knowledge regarding factors related to development and retention specific to Native American women. Findings can help suggest further inquiry and retention

activities to help increase the numbers of Native American academic physicians and
alleviate underrepresentation.

Statement of the Problem

There is a marked underrepresentation of Native American women physicians in
faculty careers at U.S. medical schools. A gap in knowledge exists regarding the
experiences of these women and factors that act as barriers and facilitators of success. A
greater understanding can help guide efforts to promote their recruitment and retention.

Purpose of the Study

This study considers the experiences and retention of underrepresented minorities,
including Native American women physicians, on faculty in U.S. medical schools. Native
American women physicians, with their unique knowledge and cultural perspectives, can
provide valuable contributions to addressing the health care needs of a growingly diverse
population. Their commitment to the betterment of Native American health status makes
them irreplaceable in confronting the striking health disparities of this population.
Despite their value, Native American women continue to be critically underrepresented
on medical school faculties. This study includes an examination of barriers and
facilitators, including institutional culture, that contribute to minority faculty retention.
Interviews with the participants make the findings relevant and applicable to efforts
addressing the underrepresentation of Native American women physicians on medical
school faculties.

Research Questions

This qualitative study included individual interviews with Native American women physicians on medical school faculties. The study set out with the following research questions:

1. How do American Indian women physicians experience faculty careers at medical schools?

2. How has being an American Indian woman affected these women as physicians? As faculty?

3. How/when did the transition occur from clinician to academician? What was the impetus? Does the motivation continue to be the same?

4. Are the experiences of the women variable? How are they similar?

5. What can be learned from the experiences of these women to inform future generations of American Indian women? Inform medical schools?

Significance of the Study

The Native American women in this study are among the few who have achieved their level of educational and professional success in academic medicine. Very little is known regarding this area; the interviews and literature utilized here yielded valuable information regarding factors that influenced the women's career choices, achievement, and selection of professional activities and service to Native American communities. Given the critical health needs of the Native American population, the presence of a committed physician workforce is essential. An invested Native American faculty is

necessary to develop future physicians and to conduct research addressing Native American health.

This project adds to this essentially unexplored area of study. The information provided in this study can help generate further study and the creation of models to increase the presence of Native American women physician faculty.

Definition of Terms

Academic medicine – Organizations that contribute to the education of physicians and biomedical scientists and which contribute new knowledge through their research programs. Patient care is a third element of the mission for many of these organizations (AAMC, 2013).

Native American – American Indian or Alaska Native refers to a person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment (Office of Management and Budget, 1997).

Underrepresented minority – Those racial and ethnic populations that are underrepresented in the medical profession relative to their numbers in the general population (AAMC, 2004).

Limitations

1. This study was conducted with a small number of participants; however they made up a significant representation (nearly one-third) of the total Native American women physician workforce in academic medicine. By the fifth interview, it was apparent that the content of the responses was becoming redundant. While the number of

participants did not limit the richness and relevance of the results but may limit generalizability.

2. The area of study only the institutional culture of academic medicine, because of this, issues discussed such as faculty retention and mentorship, will require additional study to investigate their applicability in other educational settings.

3. The transcripts used for this research were from a larger, broader phenomenological study of Native American women physicians' life experiences as medical school faculty. Though the responses of the women were rich and informative, a more focused set of questions could yield more specific, detailed data to issues relating to the women's training and professional lives.

Summary

Through their knowledge and commitment to the betterment of Native American health, Native American women physicians in medical school careers come to their positions prepared to address many factors associated with the critical health needs of the nation's Native American population. They further contribute unique cultural perspectives that can benefit the entire institution.

The central goal of medical education is to ensure accessible, quality health care for all through patient care, medical education, and research. The increasingly diverse U.S. calls for an adequate number of racially- and culturally-similar physicians and also demands that all medical students are equipped to serve their future patients.

Diversity in medical education settings fosters a positive learning environment by developing acceptance and inclusiveness. As a part of this, diverse faculty members

increase cultural awareness, act as role models, and encourage students to work in underserved communities. They also make contributions through professional activities that benefit communities and conduct health disparities research. Underrepresented faculty encounter a number of barriers to career success; the availability of supports such as effective mentorship can help alleviate some of these. Access to cultural support can be an important component in faculty retention.

Medical school environments are primary contributors to underrepresented minority faculty retention. Adverse institutional cultures and lack of support are often cited as reasons faculty choose to leave their positions. Conversely, in schools that make diversity and inclusiveness a priority, faculty and students flourish.

The data for this study were collected using individual interviews along with relevant recent literature found in the primarily in 2008-2013. Data analysis yielded four themes: (a) diversity in medical education, (b) mentorship, (c) importance of culture, and (d) institutional factors. Results can serve as a starting point for future studies and assist in developing recruitment and retention models to help address the underrepresentation of Native American women on medical school faculties.

This study is organized with Chapter 1 followed by: Chapter 2 includes a review of academic medicine literature from the past five years with focus on diversity in medical education and factors associated with the retention of underrepresented faculty. Chapter 3, Methodology, discusses the gathering of data using the existing literature and transcripts of interviews with five Native American women physicians on medical school faculties. This chapter also includes a description of the data analysis through

examination of the literature and interview transcripts. Chapter 4, Results, describes the

themes that emerged through the analysis of the literature and interviews. The meeting of

literature and interview data resulted in relevant and compelling findings regarding the

experiences of the Native American women participants. Chapter 5 is comprised of the

conclusions drawn, recommendations for future research, and possible applications for

retention of Native American women faculty.

CHAPTER 2. LITERATURE REVIEW

Introduction

The central goal of medical education is to ensure accessibility to quality health care for all, through patient care, medical education, and research. The health care needs of the country's increasingly diverse population require efforts to create a more diverse physician workforce. Medical schools are obligated to equip all medical students with a strong understanding of cultural factors in health care so they will be adequately prepared to serve their patients. Diversity in the medical student body, faculty, and administration heightens awareness and facilitates a positive, inclusive environment. Retention of diverse faculty places the needs of underserved communities in the forefront through teaching, research, community service, and mentorship of students. Institutional efforts to remove barriers and enhance success create healthy medical school cultures that advance excellence in medical education, enrich learning experiences for students, and support fulfilling, productive careers for faculty.

Health Disparities in Minority Populations

The U.S. Census Bureau (2011d) reported that between 2000 and 2010 the nation's population grew by 9.7%, a growth that was due mostly to "increases in those who reported their race(s) as something other than white alone" (p. 3). This growth will continue; in 2012, approximately half of the nation's population under five years of age were minorities (U.S. Census Bureau, 2102b), and it is projected that by 2060, today's *minority* population will have become the *majority* (U.S. Census Bureau, 2012c).

Minorities can expect to have a shorter life span than their white peers. The Centers for Disease Control and Prevention (CDC, 2011) identified major health disparities in minority populations; some examples are a greater likelihood of death from diabetes, heart disease, and stroke; vehicular crashes; homicide; drug-induced death; and infant mortality. Minority populations also experience higher rates of obesity, hypertension, HIV, infant mortality, teen pregnancy, and alcohol and tobacco use (CDC, 2011), and are less likely to receive prenatal care. They often lack adequate health insurance and are more likely to experience preventable hospitalizations, poverty, low educational attainment, and inadequate and unsafe housing (CDC, 2011). The American College of Physicians (2004) reported that "even after adjustment for insurance status and income, racial and ethnic minorities tend to have less access to health care and lower-quality care than nonminorities" (p. 226).

Minority populations are more likely to live in medically underserved communities which often rely on primary care physicians for their medical health care. The AAMC (2008) projects a physician shortage by 2025; this shortage would most affect these underserved areas that already lack an adequate physician presence. Minority physicians are more likely to choose these specialties and to practice in underserved communities (Saha, Guiton, Wimmers, & Wilkerson, 2008), thus the "racial diversity of the physician workforce can produce an increased supply of physicians in…underserved settings" (AAMC, 2009a, p. 4).

Serving the Health Care Needs of Minority Populations

Traylor, Schmittdiel, Uratsu, Mangione, and Subramamian (2010) found that when given the option, many patients prefer to have a provider of the same race/ethnicity and perceive their treatment as "empathetic and/or effective therapeutic relationships" (Garcia, Paterniti, Romano, & Kravitz, 2003, p. 265). In their study, Garcia et al. (2003) reported that minority patients "expressed concern at the lack of race/ethnic or language concordant doctors," and though participants in their study were dissatisfied, the lack of minority physicians was "resignedly discussed this as an unpleasant 'reality' they had come to accept" (p. 265). Increased diversity in the physician workforce can empower patients through greater choice and enhance patient/physician interaction. Such relationships can foster communication, increase patient literacy, and encourage patient compliance with treatment.

The health care needs of today's increasingly diverse U.S. call for greater availability of racially- and culturally-similar physicians and also demand that all medical students are equipped to serve their future patients. Smedley et al. (2003) write that this occurs by way of a *three-legged stool*, that is, by "focusing on attitudes, knowledge, and skills" (p. 203). These competencies cannot be learned through traditional use of books and lectures; instead, students "must be educated in environments that are emblematic of the diverse society they will be called upon to serve" (Cohen et al., 2002, p. 92). The AAMC (2009a) forwarded that diversity within the student body, faculty, and administration facilitates awareness and competencies by bringing "a broader range of ideas, experiences, and perspectives" to institutions (p. 2). While it is essential that all

students be aware and sensitive to patient needs, Saha et al. (2008) found that "white students attending more racially diverse schools rated themselves better prepared than students at less diverse school to care for racial and ethnic minority patients and had stronger attitudes about inadequate access to health care" (p. 1141).

Borges, Navarro, Grover, and Hoban (2010) stated that physicians are often attracted to academic medicine because of the wish to teach, conduct research, and for "intellectual stimulation and challenge" (p. 684). As a part of this, diverse physician faculty members can help ensure a curriculum that increases awareness of the needs in diverse communities and can play pivotal roles in the lives and careers of medical students. Academic physicians help medical students formulate their future identities and "their ideas and personae of what it means to be a 'physician'" (Lypson et al., 2002, p. S10). Thus, because of their own interests in addressing the needs of underserved populations, the presence of diverse faculty members can impact students' choice of specialty and encourage interest in serving medically underserved areas (Wright, Wong, & Newill, 1997).

Benefits of a Diverse Faculty

The research choices of medical school faculty have a far-reaching impact on shaping the future of health care. Minority populations experience decreased health status and encounter health concerns that are not adequately understood. Faculty researchers target "problems that they 'see' and have an interest in" (Cohen et al., 2002, p. 94) Cohen et al. (2002) further state that "what excites [a researcher's] curiosity, depends to a great extent on their personal cultural and ethnic filters" (p. 94). Diverse faculty are more likely

to study areas that they have experienced or can relate to, including minority health, and can thereby add to the body of knowledge needed to address minority health concerns. They can also enrich research through their relationships with participants; Diaz, Mainous, McCall, and Geesey (2008) found that minority individuals were more likely participate in projects if the researcher is racially similar.

The AAMC (2009a) states that "increasing the racial and ethnic diversity among the students pursuing careers in medicine will contribute to an increase in the physician workforce in racial and ethnic minority communities" (p. 4) and diverse faculty members can provide much needed role modeling and encouragement for minority students. Wright and Carrese (2003) found that medical students prefer role models who are like them, and, for the role models, relationships with students who are similar are more comfortable. Native American medical students report that access to Native American role models and mentors was one of the most important factors in their choice to enter medicine; students also reported that a lack of Native American role models and mentors was a barrier to pursuit of medical education (Hollow, Patterson, Olsen, & Baldwin, 2006). While students value and desire racial and ethnic concordance in their mentors, Wright and Carrese (2003) stated that where a racially similar mentor is unavailable, positive experiences are achievable when diversity is viewed as an asset and may be further enriched when a variety of role models work together to provide for a larger spectrum of student needs.

Challenges Facing Underrepresented Faculty

Racial and ethnic minorities now comprise approximately 37% of the nation's population (U.S. Census Bureau, 2012b), but only 7.1% (an additional 1.9% identify as multiracial) of U.S. medical school faculty (AAMC, 2012b). Underrepresented minority faculty members are concentrated in the more junior ranks, with the majority as assistant professors (AAMC, 2012b), and do not advance at the same pace as their white colleagues (Nunez-Smith et al., 2012; Palepu, Carr et al., 1998).

It has become generally accepted that mentorship is essential to retention and advancement in medical schools and an absence of mentorship is a major barrier in success (Bickel et al., 2002; Fried et al., 1998). Palepu, Friedman et al. (1998) found that junior faculty who had the benefit of a mentor "had a higher perception of research skills, an increased likelihood of being awarded research grants, and higher career-satisfaction scores" (p. 322). Conversely, lack of or poor mentorship can lead to insecurity or distrust, cause professional and career dissatisfaction, "disillusionment with academic medicine" (Straus, Johnson, Marquez, & Feldman, 2013, p. 86), and is often a primary contributor in decisions to leave academic medicine (Jackson et al., 2003; Levine et al., 2011).

In their study, Price et al. (2009) reported that underrepresented minority medical school faculty were less satisfied with diversity and inclusiveness in networking, less likely to receive effective mentorship, and also less likely than their white colleagues to anticipate that they would still be at their current institution in the next five years. They are more likely than white faculty to experience adverse working conditions that include isolation, racial bias, and harassment, and also more likely to experience stereotyping "about their attainment of merit" (AAMC, 2009b, p. 2). They may be considered to be

experts regarding minority issues and become overburdened by expectations to undertake committee work and service efforts that fulfill institutional needs for adequate diversity. Because they may be one of only a few minorities in a school, they are often called upon with disproportionate requests for role modeling and mentorship of minority junior faculty or students. Scholarly work that involves community research may be of greater interest to minority faculty members, but may be viewed by others in the institution as *soft research*; minority faculty members may not be regarded as "real scientists" (Pololi, et al., 2010, p. 1366). Many underrepresented minority faculty also are invested in their communities and desire to serve them through professional activities (Mahoney et al., 2008). Although the undertakings common among underrepresented faculty are needed and important, these efforts are often not given equitable consideration in promotion and tenure evaluations.

Not only are minorities less likely to have mentors, but finding diverse or racially similar mentors is even more problematic (Nivet et al., 2008; Price et al., 2005). Along with other barriers, minorities often experience a sense of isolation. Mahoney et al. (2008) state that minority mentors can provide, in addition to professional support, "cultural and emotional support and a sense of belonging to a community" (p. 7). While all supportive and effective mentoring relationships are of great value, a lack of racial concordance can at times make it harder for individuals to identify with one another. Difficulties such as dissimilarities in language, linguistic comprehension, or varied perceptions of humor may exist. Distinctive cultural views, norms, and "social frames of reference" (Polili, Cooper, & Carr, 2010, p. 1364) can cause miscommunication or

discomfort. Cultural nuances can be complex and sometimes hard to identify; examples such as body language, facial expression, or levels of assertiveness can be misinterpreted or go unnoticed. Dialogue involving racial issues may be awkward or left unaddressed out of concern that a person may be "perceived as prejudiced" (Bickel & Rosenthal, 2011, p. 1230).

Women in medical schools often encounter career barriers similar to those of underrepresented minorities. Levine et al. (2011) found that women identify barriers such as "(1) lack of role models for women in academic medicine, (2) frustrations with research, (3) work-life balance, and (4) the institutional environment" as reasons for attrition (p. 754). Women in academic medicine experience greater pressure to act as role models and mentors, perform other services such as committee work, and do not advance at the same rate as men. Other challenges of concern are responsibilities regarding maternity and children accompanied by inflexibility or absence of institutional policies and accommodations. Insensitivity toward women's needs affects job satisfaction and can interfere with or delay productivity, career advancement, or obliterate their careers altogether. Women often communicate and approach tasks in ways that may not be in sync with what is sometimes referred to as the *cutthroat* medical school environment. Women tend to be less motivated by competitiveness and more through encouragement (Mayer, Files, Ko, & Blair, 2008), and value collaborative and group relationships that include input from members (Robinson & Cannon, 2005). Today, women make up approximately 51% of the U.S. population (U.S. Census Bureau, 2011b) but comprise 37% of the U.S. medical school faculty (AAMC, 2012b). Even though women are

entering medical school careers at increasing rates, the challenges they encounter cause them to leave more often than men.

Underrepresented minority women comprise 3.9% of medical school faculty (AAMC, 2012b) and are overwhelmingly situated in the assistant professor rank. As minorities *and* women, they face complex challenges to career advancement. A participant in a study by Price et al. (2005) related that as an underrepresented minority woman, interactions with others "may be a little more difficult and is worse in the beginning…as people get to know you, they become a little less gender conscious and race conscious…but in the beginning, it's very hard, very hard" (p. 568). The study by Price et al. (2009) also revealed that among all study participants (majority men and women, and underrepresented minority women and men), underrepresented minority women in medical schools reported greater biases in recruitment and allocation of institutional support; they were the least likely to perceive a presence of networking opportunities that include minority women, and were the least likely to report satisfaction with institutional diversity. The importance of culturally concordant mentoring relations was found by Elliott et al. (2010); in this study Native American women faculty in medical schools indicated the importance of mentorship that recognizes cultural values. Among underrepresented minority woman, the likelihood of finding a racially similar mentor of the same gender drops substantively. In a study by Pololi et al. (2010), a participant stated that there are just "no women and certainly, no faculty of color, so you're just there by yourself" (p. 1365).

Facilitators of Success

Successful mentorship includes a presence of "chemistry" that facilitates cohesiveness, allowing mentors and mentees to be active and interested participants in achieving goals (Jackson et al., 2003, p. 331). In describing these relationships, Straus et al. (2013) identified characteristics of a *good* mentor. These included the ability to prioritize the best interest of the mentee, honesty and trustworthiness, accessibility, and the ability to be engaged and active listeners. Mentors should be experienced and be able to assist their mentees by way of "career guidance, offering emotional support, and focusing on work/life balance" as well as advocacy, advice, assistance with goal setting, and understanding institutional systems and networking (Straus et al., 2013, p. 85). A mentor identifies strengths, develops skills, and makes sure that the mentee's work is appropriate and beneficial in order to bolster teaching and research competencies and increase proficiency in grant and scholarly writing. Straus et al. (2013) noted that a healthy mentoring relationship is a "two-way street" (p. 86). In return for their effort, mentors find satisfaction and fulfillment through the successes of their mentees, the opportunity to positively influence the lives of others, and the ability to make an impact on the future of health care.

In contrast to beneficial mentorship experiences, trademarks of a failed mentorship relationship include "poor communication, lack of commitment, personal differences, perceived (or real) competition, conflicts of interest, the mentor's lack of experience" (Straus et al., 2013, p. 86).

The responsibilities of a mentee are as important as those of the mentor. Zerzan, Hess, Schur, Phillips, and Rigotti (2009) emphasize that a mentee is not an "empty

vessel"; instead, the mentee needs to take a proactive role and engage in guiding in the relationships (p. 140). Mentees should recognize that mentors have professional duties in addition to mentoring and understand they need to be prepared and on time for meetings. Ongoing, regular contact is important; however, asking for last-minute assistance or unreasonable requests can add stress and may strain relationships. The contributions and efforts of the mentor should be met with respect, but out of deference, mentees may at times raise their view of their mentor to unrealistic levels, and it is important to recognize that mentors are "human" (Rose, Rukstalis, & Schuckit, 2005, p. 347).

Mentorship Models

With the paucity of underrepresented faculty mentors as well as an increasing understanding that the *one size fits all* approach of traditional one-to-one mentorship does not meet all needs, there has been a growth in innovative mentorship models. Ideally, any one model would act as a complement and not replace the traditional dyadic model.

Peer mentoring. Peer mentoring or peer mentoring groups include pairs or groups of junior faculty who provide one another reciprocal emotional support and feedback on professional efforts. Lord et al. (2012) found that benefits to peer mentoring groups include improvement in work satisfaction, social connection, and increased productivity as "members actively generated new ideas, implemented projects, and provided mutual accountability and feedback" (p. 382). Successful peer mentoring is contingent on ongoing commitment and collaborative group efforts, and can be threatened by a lack of focus, interpersonal difficulties, or overemphasis of personal concerns.

Multiple mentors. DeCastro, Sambuco, Ubel, Stewart, and Jagsi (2013) addressed utilization of multiple mentors where a variety of senior mentors can provide guidance and support development according their area of expertise. Preventing overlap, duplication of efforts, or conflicting information requires ongoing communication and coordination of activity. Team approaches can alleviate the burden of minority senior faculty members who may otherwise be expected to have full mentoring responsibility for a disproportionate number of mentees.

e-mentoring. Schichtel (2010) discussed *e-mentoring* through use of technological resources. Communication across distance can allow more frequent meetings, be less time consuming, and provide opportunities for the "benefit of a greater diversity of expertise" through networking and collaborative opportunities that may have never been otherwise possible (Lurie, Fogg, & Dozier, 2009, p. 1031). While e-mentoring enables interaction regardless of geographical location, it comes with technical difficulties, a loss of in-person interaction, and the inability to engage in hands-on demonstrations.

Institutional partnership mentoring. Consortiums of schools have developed models where resources can be pooled to increase the capacity to mentor and train larger numbers of junior faculty members. Partnerships grant exposure to research and teaching in varied academic settings and provide access to a variety of diverse mentors, peer networks, and an increased range of populations and options for research.

Value of Mentoring

Rose et al. (2005) found that mentors "impart knowledge indirectly through their behaviors, attitudes and perspectives" (p. 345). Mentees see their future selves and develop outlooks and perspectives by observing the life and career choices of mentors. Junior faculty will act as future senior faculty mentors and role models. Straus et al. (2009) observed that mentors have the important task of role modeling "good mentorship so mentees could learn to how to be good mentors" (p. 137). As they begin to explore careers, Borges et al. (2010) found that some students are "fortunate to cross the path of someone or multiple 'someones' who suggest, introduce or expose them to, and shape their interest in academic medicine" (p. 7), while Kalen et al. (2010) concluded that physicians often choose academic medicine because of interactions they had with mentors in their training. These experiences then built their understanding of how they can impact the lives of others.

In their study, Borges et al. (2012) conveyed that the women participants did not originally plan to enter academic medicine, but made the decision later. Early intervention with students could have a considerable impact on increasing diversity in academic medicine. Faculty mentors have the ability to increase awareness of the array of opportunities in academic medicine and help students build their capacity to work through perceived barriers. Medical students may not consider academic medicine out of the belief that they do not possess skills or the background needed to teach, conduct research, and publish. Moreover, though relatively new to medical schools, students may perceive institutional values and climates to be barriers to successful careers in academic

medicine. They may see medical schools to be a *good old boys club*; be cognizant to the weight given research and publication, the lesser acknowledgement of teaching, mentoring, and service efforts; and that promotion and tenure processes are not made widely known (Sanchez et al., 2013). Minority medical students may also believe that minorities are less likely to experience success (Sanchez et al., 2013).

Interventions such as pipeline programs are widely offered as a way to introduce students as early as high school and undergraduate levels to medical careers. However, similar opportunities to prepare future physicians for careers in academic medicine are essentially absent but can have a positive effect on faculty diversity. Page, Castillo-Page, and Wright (2011) found that in institutions where there is a more diverse student body and pipeline programs for underrepresented minority students, there is an increased number of underrepresented minority faculty. Further, in the same study, Page et al. (2011) indicated that the presence of underrepresented minority students in medical schools was the greatest predictor of the presence of underrepresented faculty ten years later, in part "perhaps because some of these students went on to join the faculty at the same institution" (p. 1226).

One reason physicians choose academic medicine is a desire to share knowledge with the next generation. Mentors can identify qualities possessed by their mentees that the mentees do not identify in themselves; therefore, mentors can "foster successes in areas their mentee did not think possible" (Garmel, 2004, p. 1352). Among minority students, Wright and Carrese (2003) found that racial similarity can be an important component of mentorship during a trainee's formative years. Among Native American

medical students, Hollow et al. (2006) indicated that one of the important factors in successfully pursuing medical education was "exposure to or mentoring from AI/AN health professionals" and that lack of Native American role models and mentors was a barrier; they continued, "the mere knowledge of another Native's success in medicine mattered" (p. S66).

Minority students may "perceive that their race negatively affected their medical school experiences" (Orum, Semalulu, & Underwood, 2013, p. 5). Odum, Roberts, Johnson, and Cooper (2007) reported some of the barriers to student success were a "lack of support, discrimination, and cultural representation" (p. 149). Further, Dyrbye et al. (2010) found that Native American medical students are more likely than their white peers to consider dropping out of medical school, and one of the most common reasons for this was a "major negative personal live event" (p. 98). Rose et al. (2005) related a good student mentor has the "the ability to engage with a student on a personal and emotional level" and is able "tolerate expressions of emotion" during especially stressful times (p. 345). Minority mentors have the ability to offer emotional and unique cultural supports and can support their mentees by promoting revitalization and resolve.

Underrepresented minorities, whether they are faculty or students, may possess their own self-imposed barriers such as self-doubt, *imposter syndrome*, lagging confidence, and sometimes depression or anxiety. As a means to better deal with professional demands and stress, these internal obstacles can be reduced through internal supports such as personal resiliency. Resiliency permits perseverance in adverse environments through personal strengths such as positive coping skills and self-worth

that strengthen the ability "to respond to stress in a healthy, adaptive way such that

personal goals are achieved at minimal psychological and physical cost" (Epstein &

Krasner, 2013, p. 301). Fostering resiliency requires individuals to encounter external

situations or stimuli that call for risk and challenge (*moving out of one's comfort zone*). In

their study, Sood, Prasad, Schroeder, and Varkley (2011) point out that people naturally

focus on what they consider external threats or discomforts. The same investigators

suggested that resiliency can be bolstered by learning to use internal interventions that

decrease attention to perceived threats. Epstein and Krasner (2013) state that individuals

can learn to identify and "understand their own adaptive and maladaptive responses" to

internal and environmental stressors (p. 301). By doing so, they can become more self-

aware and recognize when they are becoming overly stressed and take measures before it

becomes unmanageable. Cora-Bramble, Zhang, and Castillo-Page (2010) found that some

characteristics that promote faculty resiliency include positive world outlook, the ability

to draw "on external resources for assistance and support," "valuing the ideas of others,

recognizing interdependence, being a good 'team' player," and being organized and

planful in work (p. 1494). These investigators also identified a number of personal and/or

cultural "enablers" (p. 1496) that are used for self-protection and contribute to resiliency,

including "having a sense of humor, having the ability to say no, being assertive, working

hard, having internal clarity of goals, and being spiritual" (p. 1495). In their study, Sood

et al. (2011) added that resiliency can be cultivated by learning to "delay judgment and

pay greater attention to the novelty of the world," adopting flexibility and working to

develop "skills such as gratitude, compassion, acceptance, forgiveness, and higher

meaning" (p. 860). Learning to groom resiliency can contribute to medical school faculty retention through personal health, work satisfaction, and increased productivity.

Institutional Factors

Most medical schools still function using much the same systems as when they were long ago established. And, though medical schools today increasingly recognize the value of faculty diversity and may invest a great deal of effort and other resources, realization of diversity goals continues to be elusive. A major contributing factor to this ongoing problem is the nature of an institution's culture. Ovseiko and Buchan (2012) defined organizational culture as "an organizational-level construct constituted by the assumptions, ideas, beliefs, values, norms, and rules shared by an organization's members" (p. 709). Smedley, Stith Butler, and Bristow (2004) extended the definition to encompass diversity; this includes the "perceptions, attitudes, and expectations that define the institution, particularly as seen from the perspectives of individuals of different racial or ethnic backgrounds" (p. 145). Traditional medical school cultures are considered "individualistic, autonomous, scholarly, expert-centered, competitive, focused, high-achieving, and hierarchical" (AAMC, 2007, p. 5). This culture has cultivated an adverse environment for underrepresented minority faculty that includes barriers to success such as bias, discrimination, lack of mentors and support, isolation, absence of information regarding promotion and tenure, and disproportionate expectations for committee service. Historically, faculty development and retention has operated under the assumption that achievement will occur by addressing an individual's *deficits*. Without question,

individual professional growth and supports are essential; however, focusing attention on the individual minimizes contributing institutional factors.

Retention. Moreno, Smith, Clayton-Pederson, Parker, and Teraguchi (2006) describe a "revolving door" in schools where underrepresented minority faculty are hired but do not stay; they stress then that diversity includes not only recruitment but equal attention to retention (p. 11). Adverse environments can lead underrepresented minority to believe that in order to succeed, they must change or suppress their self-identity, culture, values, and interests. Pololi, Krupat, Civian, Ash, and Brennan (2012) found that primary reasons underrepresented academic physicians desired to leave their current schools were inadequate institutional support along with "feeling vulnerable or unconnected to colleagues, moral distress, perceptions of the culture being unethical, and feelings of being adversely changed by the culture" (p. 865). Consideration of leaving was not associated with external factors such geographic region. Further, Pololi et al. (2012) showed that though underrepresented faculty wished to leave their present institution, they did not indicate an intent to leave academic medicine altogether.

Support from administration. Where minority faculty perceive a "gap between intention and implementation of institutional efforts to increase diversity," commitment to diversity by the schools and administration may not appear to be genuine or a high priority and can decrease morale (Mahoney et al., 2008, p. 783). Not surprisingly, medicals schools with greater faculty diversity also have administrative leaders who place clear emphasis on the creation of an inclusive environment that welcomes diversity;

conversely, those schools with lesser diversity are under leadership that does not make diversity a priority (Peek, Kim, Johnson, & Vela, 2013).

Institutional culture. An institution's culture is such an "extraordinarily powerful force for a group or organization, it is so pervasive and interwoven," that it is rarely questioned or even noticed in daily life (AAMC, 2007, p. 4). Institutional culture can serve as the impetus for "many organizational conflicts and tensions" (AAMC, 2007, p. 4). Conversely, it can also facilitate "an inclusive, humanistic, relational and energizing environment in academic health centers; to help all individual faculty and trainees to reach their full potential" (C-Change National Initiative, 1997, n.p.). In such a setting, work can be "collaborative, transparent, outcomes-focused, mutually-accountable, team-based, service-oriented, and patient-centered" (AAMC, 2007, p. 8).

Krupat, Pololi, Schnell, and Kern (2013) identified areas within medical schools that can create positive culture change. Among these were institutional support, increasing an understanding and the value of diversity along with policies and practice that promote diversity to include moving underrepresented faculty to senior faculty ranks and leadership positions. The AAMC (2009c) emphasizes that changing institutional cultures begins with initiative from the top tiers and "falls squarely on academic health centers and the leadership of their medical schools" (p. 9).

Conclusion

Successful provision of accessible, quality health care begins with rethinking diversity and what comprises excellent medical education (AAMC, 2009c). As the nation becomes more diverse, access to quality care cannot be achieved by viewing the needs of

these diverse populations as providing service for a "subset of the population" (AAMC, 2009c, p. 4). Instead, the encompassing goal of access to quality care is contingent on training a physician workforce that is prepared to provide care for all patients. As such, excellence and diversity throughout medical education cannot be considered as separate but rather as one in the same.

CHAPTER 3. METHODOLOGY

Introduction and Study Design

This qualitative study utilized one-to-one interviews and a review of literature to explore the experiences of Native American women physician faculty in U.S. medical schools to gain fuller understanding of their underrepresentation in these settings. Creswell (1998) defines qualitative research as an approach that "explores a social or human problem. The researcher builds a complex, holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting" (p. 225). Tuhiwai Smith (1999) states that participants in research projects should be allowed to take an active role; if participants are viewed merely as "objects of research," they then "do not have a voice and do not contribute to research or science" (p. 61). Thus, interviews were deemed important in order to provide participants the opportunity to include information that they perceived as valuable and therefore should be shared. By empowering participants to use their own voices, interviews help to better ensure the adherence to Native American historian and researcher Devon Mihesuah's (1993) question of "who is benefitting?" (p. 138). Mihesuah (1993) explains that inquiry should not be to advance a researcher's own career or professional reputation; instead, where research involves Native American people, they should have the power to determine relevance of a study and be the primary recipients of project outcomes.

In addition to interview data, this study also included a review of literature from primarily the past five years that addressed issues surrounding diversity in academic

medicine. The use of both interviews and literature in studies is an approach recommended by Mihesuah; in her book, *Natives and Academics: Researching and Writing About American Indians* (1998), she relates that examining and analyzing written knowledge along with "incorporating the accounts and interpretations of the participants" increases the accuracy of studies (p. 5).

Finally, qualitative research considers the researcher as a part of the research process in contrast to the outside, unbiased researcher role in quantitative research. As the primary means of data collection and analysis, the role that the researcher plays in the process, along with the researcher's experiences, values, and beliefs, and biases, cannot be excluded. Including the researcher as an active part of the research process is a more fully inclusive approach and aligns with the holistic cultural belief systems of many Native American communities.

Statement of the Problem

There is a marked underrepresentation of Native American women physicians in faculty careers at U.S. medical schools. A gap in knowledge exists regarding the experiences of these women and factors that act as barriers and facilitators of success. A greater understanding will help guide efforts to promote their recruitment and retention.

Method

The University of Minnesota Institutional Review Board approved this study and the degree of risk involved in the interview was deemed minimal. Interviews included questions regarding experiences and events during the women's educational and medical training and as medical school faculty and were a part of a larger study conducted by a

team of four researchers. All of the researchers were female and affiliated with the University of Minnesota Medical School. They included a Caucasian faculty member, a Native American physician faculty member, a Native American professional staff person, and a Hispanic/Native American who also worked with the medical school. This study resulted in one publication in 2010.

The interviews for this were conducted with Native American women physicians in medical school faculty careers. By utilizing a snowball methodology (Brown, 2005), a total of six participants were identified and invited for interview; one declined because she was involved in a project of similar nature. The remaining five agreed to be a part of this project. At the time of this study, there were 17 Native American women on medical school faculties who held a M.D.; thus the five participants made up 29.4% of the nation's total Native American women physician faculty workforce in medical schools. In addition to their female gender there were three criteria used to qualify the women for participation: (a) identify as Native American, (b) possess an M.D. degree, and (c) hold a faculty position at a U.S. medical school. The participants' age range was 42 to 60 years; their home residences were in three separate states; and they were members of four Native American tribes that spanned the U.S. The women thus represented an expanse of experiences in a variety of institutional settings and tribal and belief systems. With completion of the final interview, redundancy was emerging in the interview content. It was determined that the standard of qualitative saturation had been achieved and additional interviews were not deemed necessary.

Data Collection

The interviews for this study began in August 2006 and were completed in March

2007. The following set of questions was used:

1. What motivated you to become an academic physician?
   a. At what point in your path did this happen?
   b. Have you had a role model or mentor in your training? (male/female)?
      Native American? Community? Professional?
   c. How have they been important in your professional/personal life?
   d. How did he/she show they believed in you?
2. When you entered academic medicine, what were some of the things you
   hoped to achieve?
   a. How are you doing with these goals?
3. How does being an academic physician fit with your identity of being an
   American Indian woman?
   a. Do you have contact with your community/tribe?
   b. How does being an academic physician impact your experience with your
      community/tribe?
   c. How does being an American Indian woman impact your experience of
      being faculty in a medical school?
4. Where do you find support for yourself personally and professionally?
   a. Now?
   b. In training?
5. Think of a woman who you know as a *good person*.
   a. What makes her a good person? What characteristics make that true?
   b. How is she connected to her tribe?
6. To what extent does connectedness indicate being a *good person*?
   a. How is connectedness important to you as a woman?
   b. What is the role of connectedness in the balance of mind, body, emotions,
      and spirit?
   c. How are you able to keep connectedness in your professional life?
7. Describe one experience that especially stands out in memory as a faculty
   physician.
8. As one who is successful in the field, what guidance would you offer a Native
   American woman wishing to enter academic medicine?
   a. Is there a skill/personality trait or something essential to being successful
      in this field?

For ease of participation, interviewees identified a convenient site to meet based on their availability and location. Three participants were interviewed at a professional conference and two were at other sites of their choosing.

Prior to beginning an interview, each participant completed a demographic information form and signed a consent form that indicated their voluntary participation. They were provided no incentive for their participation. The women were asked to indicate their understanding of the purpose of the project and their participation to assess their comprehension of the risks and benefits. Each participant was asked to indicate that they understood the interview was being audiotaped. They were also informed of their ability to disregard a question or decline responding. Further clarification or additional information about questions was encouraged. Every effort was made to inform participants that the sensitive nature of some questions had the potential to evoke strong emotions; it was explained to the participants that they had the option of declining their response to any question. Each participant indicated their understanding of risks and their willingness to participate.

The interview format was semi-structured with open questions, leaving room for each participant to respond in the depth that each preferred. As such, the length of interviews spanned approximately one-half to one-and-one-half hours. Throughout the interview, the researcher took summary notes and each session was audiotaped.

Each interview was transcribed using the audiotapes of the sessions. Participants were given an identification number available only to four research staff who were part of the overall project, and no other parties were given access to participants' information.

Electronic files have been kept in password protected files on two researchers' computers while paper and taped information are stored in a locked file cabinet.

The literature review was performed to compile written and online data from studies conducted primarily in the past five years. This included library and online searches for articles from a variety of scholarly journals, electronic and hard copy resources from professional and governmental agencies, as well as books in print. Information was sought that targeted issues in academic medicine to include diversity, faculty retention, and institutional factors that affect the professional lives of faculty, including underrepresented faculty. Statistical and demographic data were found through governmental agency documents and websites including the Department of Health and Human Services, Indian Health Service, U.S. Census Bureau, Centers for Disease Control, and the Office of Management and Budget as well as professional organizations, including the Association of American Medical Colleges.

All literature was sorted into broad categories and stored in corresponding electronic folders. Online resources were bookmarked on the researcher's computer and links were copied and kept on file. For ease of reference, an encompassing table listing references along with pertinent information about each source was developed (see Appendix A).

Analysis

To analyze data, transcribed interviews were read carefully and then again reviewed, to gain an overall sense of the interviewee responses. Codes, words, and phrases were identified for sorting and organizing data. The total amount of data was

manageable and so it was sorted and organized by using Microsoft Word tables, broken into individual columns for (a) focused codes, (b) the related original text, (c) words and phrases found in the text that were associated with codes (see Appendices B, C, D, and E). To help ensure accuracy before further review, all information was set aside for approximately three weeks. The data were then reviewed again, comparing transcripts to the codes and tables, thereby confirming that codes matched the context of the interviews. Throughout the entire process of analysis, the researcher kept the de-identified transcripts nearby for easy reference. This diligent and disciplined approach allowed vigilant consideration of the interview data. The interview and literature data were next considered side by side to identify emergent themes.

CHAPTER 4. RESULTS

The focus of this study was to explore the experiences of Native American women academic physicians in an attempt to gain fuller understanding of their underrepresentation in academic medicine. In depth analysis of the combined interview data and literature yielded four major themes that related to development and retention of underrepresented minorities, including Native Americans, in academic medicine: (a) diversity in medical education, (b) mentorship, (c) importance of culture, and (d) institutional factors.

Diversity in Medical Education

In 2011, the U.S. Census Bureau (2011a) reported that between 2000 and 2010 that the nation's population grew by 9.7% primarily because of the growth among minority populations. Minorities are less likely to have access to health care and are more likely to live in medically underserved communities and experience poorer health than their white peers. The AAMC (2008) projects a physician shortage by 2025 that would most affect communities that are already medically underserved communities. Minority physicians are more likely to enter primary care practice and work in underserved communities, ensuring quality of health care for underserved patients relies on a diverse physician workforce.

Central to medical education is the need for high quality health care that is accessible for everyone and is contingent on patient care, education of future providers,

and research. There were significant findings in the literature and in the interviews

conducted that described this importance and how to fulfill goal.

Quality care for diverse patients requires that health professionals are equipped to

address cultural factors which are best facilitated through educational "environments that

are emblematic of the diverse society they will be called upon to serve" (Cohen et al.,

2002, p. 92). Diversity within the student body and among faculty facilitates this by

bringing "a broader range of ideas, experiences, and perspectives" (AAMC, 2009a, p. 2),

increases awareness of diverse community needs, and also encourages students to serve

these communities (Wright et al., 1996). Similarly, an academic physician who was

interviewed remarked on her ability to "teach [students] the linkage to our culture" and to

"manifest my interest in Native health" (Participant 4). The same participant emphasized

that physicians have "no clue [about patient care for Native Americans] until you really

are in our shoes and you really walk" the ways of Native Americans, she continued,

"frankly, I want you [students] to be really good at this because my people deserve this".

Sanser-Fisher, Williams, and Outram (2008) indicated the necessity of required

and elective courses that address health disparities in developing cultural competence

among medical students. A similar perspective was voiced by Participant 4; for her, this

learning was limited not only to students, but also encompassed residents and

professionals,

> I have them in a required course; they can't avoid me. You know, so it's like I
> have been able to work with my interest in multicultural health and
> communication. You know, some of what you learn there are nuances with some
> of our other peoples and I can teach you that. And so, I've got them, so I've got
> medical students and it's not just Native medical students either. I can influence
> others in my pod. I've got Native medical students who I can manifest my interest

in Native health and you know I work in a tribal community and an urban community so I can get them to see both of those things. And then I teach residents so I get the next level and then I teach docs. (Participant 4)

Studies showed that physicians decide to move to academic medicine for a number of reasons and are often attracted to academic medicine because of the wish to teach, conduct research, and for "intellectual stimulation and challenge" (Borges et al., 2010, p. 684). Borges et al. (2012) found that many women physicians did not originally plan to enter academic medicine, but made the decision later as a medical student, fellow, resident, or when already in practice. Interviews included the reflections of one woman, whose roots of her move to academic medicine began as a resident,

> I remember the seed he had planted when I was a resident actually and, it was by a non-Native faculty who was in my family medicine residency with a faculty position. "You should go into this," and I said, "No way ___ are you kidding, I am going out to the rez" [slight laughter]. And so you know, it [academic medicine] just didn't even occur to me actually. But, I have to admit that thought sort of stayed in my head. (Participant 4)

The experience of an interviewee was also in agreement with Borges et al. (2012) who related that the choice of a subspecialty can be the deciding factor in a career in academic medicine; the woman interviewed spoke of her career path,

> When I became a cancer specialist…that is so research oriented, so evidence-based medicine, that it's a natural aspect to want to do clinical research and to affiliate with cancer centers that do state of the art, cutting edge treatment for patients. (Participant 1)

Mirroring the Borges et al. (2010) findings of "fondness for teaching" (p. 6), working with students was a source of enjoyment and a primary motivator in choosing academic medicine for the interviewees and was revealed through such comments such as, "I like working with students," (Participant 3) and "I got excited when I was

teaching," (Participant 2) and as one woman noted, teaching gave her the ability to "stimulate students in their idealism…each generation can make a difference, can do better than the last generation…offering more to patients as they go along" (Participant 1).

Physicians on medical school faculties act as role models as students develop "their ideas and personae of what it means to be a 'physician'" (Lypson et al., 2002, p. S10) and can influence students' choice of specialty (Wright et al., 1996). A woman interviewed came to realize,

> Although I don't think I really saw it at the time; it was really that there just is not enough of us in the field [Native Americans in academic medicine]. If this motivates anyone [students] to serve [Native American] people [inaudible], then I really have a responsibility to do this. (Participant 4)

Women in the Borges et al. (2010) study were attracted to academic medicine for the opportunities of "intellectual stimulation" and "remaining current" (p. 684). Likewise, interviews for this study revealed that academic medicine provided the chance to "do research related to the kind of clinical work I was doing" (Particpant 3) and for "challenge and opportunities of research…that ongoing educational piece, rather than struggle through reading a journal when you're exhausted, but being right in the middle of writing the journals and being a part of the studies is exciting" (Participant 2).

Diverse faculty members often choose areas of research interest in academic medicine that address "problems that they 'see'" or have experienced in their own lives and communities (Cohen et al., 2002, p. 94). Pololi et al. (2013) found that underrepresented minority faculty are twice as likely as other faculty to engage in "disparities research" (p. 4). A study participant said that researching health care needs of

Native American people provided a venue to make contributions that were "more far

reaching" (Participant 3). She continued,

> There is also a lot of opportunity to have a positive influence and the community
> does like to see Native researchers so I mean that is why I'm doing what I'm
> doing because of I as a Native researcher have a lot of potential to bring good to
> the community and have a positive impact.

Giving back to their communities was often important to Native American

women faculty in academic medicine (Elliott et al., 2010; Mahoney et al., 2008). One of

the interviewees disclosed that academic medicine allowed her to "help make changes in

the medical field for American Indians and Alaska Natives that would give me some

authority that I could then look for resources that would address disparities" (Participant

1). For Participant 2, her position allowed her to provide medical care otherwise

unavailable for her patients,

> Women have to travel several hours and so fortunately, where I am, I have been
> able to use our facilities, our portable machinery and take over to the reservation.
> And I go to the senior citizens' home and get as many people that are appropriate
> for scanning and give them information to take back to their doctor and I'm
> working on some things with diabetes.

Service can also take the form of preparing students to practice in underserved

communities. Acosta and Olsen (2006) described pipeline programs for Native American

students in high school through medical school to increase the numbers of Native

American students who will enter medicine and serve Native American communities.

Likewise, an interviewee reflected,

> I can teach about medicine that's not Western medicine; I can teach them the
> linkage to our culture. I've got young kids; I've got them as college students who
> are thinking about medicine. In terms of just community programs that I interact
> with them at a community level. I get them in medical school. (Participant 4)

Service activities such as student programming can have unpredicted outcomes. Page et al. (2011) found that in institutions where there is a more diverse student body and pipeline programs for underrepresented minority students, there is an increased number of underrepresented minority faculty.

Mentorship

The literature shows that without doubt, mentors are pivotal in faculty success and retention in medical school settings while the absence of a mentor is a major barrier (Bickel et al., 2002; Fried et al., 1998). It has also been well established that minority faculty in academic medicine are less likely to have mentors, finding diverse or racially concordant mentors is even more difficult (Nivet et al., 2008; Price et al., 2005), and women are less likely to have mentors and have difficulty in finding female mentors (Levine et al., 2011). For minority women, barriers to success are amplified because of their dual identity of being a minority and a woman. An underrepresented minority woman in academic medicine who was a participant in a study by Pololi et al. (2010) stated, "There just no women and certainly, no faculty of color, so you're just there by yourself" (p. 1365). A Native American woman physician in academic medicine interviewee in this study revealed,

> It's very difficult to get good mentors. And first of all, if you're saying as a woman and you want to mentor, someone who could help you, knowing where the land mines are, know what's appropriate and what's not appropriate in certain settings. It's very difficult to find another woman mentor. And I am not saying that men cannot be good mentors; some of my best mentors have been men…it's really hard to find women as role models because you look at the statistics, and there are not many very successful women in academics…who are minorities. (Participant 2)

Among the women interviewed, some stated that Native American mentors were desired; however, they also acknowledged the value of sensitive, supportive relationships with non-Native American mentors. Similarly, in relationships where racial concordance does not exist, Wright and Carrese (2003) found that when diversity is viewed as an asset, positive experiences are very achievable; such was the experience of one woman,

> My role models were typically white females who were excellent at what they did and often had sensitivities and skills…encouraged me. They made me feel that this was an area that I could succeed at and that I could develop some leadership and that in doing so I could make a difference for our people. (Participant 1)

> In their study regarding mentorship in academic medicine, Straus et al. (2009) found one "role of a mentor was to role model good mentorship so mentees could learn to how to be good mentors" (p. 137). Reflecting on formative years, a study participant recalled the impact of her mentor had in her work with students, "What I didn't totally get, although I felt that way was this tremendous commitment to students and you know I felt like I had had a lot of support going through the process, particularly with other Native physicians" (Participant 4).

A mentor has many functions, and Palepu et al. (1998) established that junior faculty in medical schools who had the benefit of a mentor "had a higher perception of research skills, an increased likelihood of being awarded research grants, and higher career-satisfaction scores" (p. 322). Additional studies helped to increase understanding of what it is that makes mentors effective and able to facilitate such positive outcomes. A mentor was defined as someone who (a) facilitates professional contacts and "positions [a mentee] to get certain appointments" (DeCastro et al., 2013, p. 491); (b) boosts retention through "career guidance, offering emotional support, and focusing on work/life

balance," advice, assistance in goal setting and understanding institutional systems

(Straus et al., 2013, p. 85); and (c) promotes advocacy by standing "up for what seems to

be a good cause" (Mahoney et al., 2008, p. 7). The importance of mentors in their careers

was voiced by the women who were interviewed. Mentors were important to the

advancement of one woman, "I have a couple of very good mentors and so I feel like I

am moving along" (Participant 3). Another emphasized, "It's quite clear to me that you

do need some advocacy with [advancement in academia] and you do need these

connections to be able to make that happen" (Participant 4). In the estimation of the same

woman, "As long as there are mentors I think that you will be able to sort of deal with

some of the challenges [of medicine]".

As in other professions, the role of mentors in academic medicine careers includes

providing emotional support and was found consistently across many studies (Jackson et

al., 2003; Steinert, 2010; Straus et al., 2013). Similarly, interviews yielded recollections

of personal and emotional support. The mentor of one woman (Participant 4) related,

"You can do anything, you don't just have to be a doctor first, you could be anything";

she added that her mentor offered her "The unspoken message was that you know you are

worth it". The emotional support of mentors was especially crucial during critical times;

an interviewee described her mentor, "Extremely supportive at stressful times when I

thought that I may not want to continue. That I may want to drop out of the program. He

immediately helped to turn me around to get me refocused" (Participant 3). For another

interviewee, her mentor offered "profound advocacy, actually, as well as emotional

support that you are not crazy" (Participant 4).

A successful mentoring relationship is contingent not only on the efforts of the mentor, but also the mentee (Zerzan et al., 2009). As opposed to being an "empty vessel" (Zerzan et al., 2009, p. 140), mentees need to take a proactive role in the relationship. Thus, to help their mentees to grow, mentors must not only support their mentees but also challenge them. Similarly, one woman spoke of how her mentor communicated high expectations, "He made it clear that [learning] was a life-long process of education. It was my obligation to read and be current" (Participant 5).

Out of deference, it is often natural for a mentee to place the mentor on a pedestal; however, Rose et al. (2005) indicated that is important for mentees to understand that mentors are "indeed human" (p. 347). Similarly, the findings of Straus et al. (2013) emphasized that a healthy mentoring relationship is a "two-way street" (p. 86); Participant 4 discovered,

> It was like as a student you don't think you can necessarily support them *[mentors]* but it was you know, at that time ___ was president of the AAIP and we were having a meeting out there and he was like [refer to self by name] I need your help. So, you know but again, this understanding, well I guess, there is reciprocity.

In working with mentees, mentors "impart knowledge indirectly through their behaviors, attitudes and perspectives" (Rose et al., 2005, p. 345). A woman interviewed spoke of a meaningful experience with one of her valued mentors,

> I think he really influenced me and then ultimately watching his career because he bailed on pediatrics and ended up going to get an MBA. His interest turned out to pretty much be in the policy arena. And, that influenced me too to say that here's somebody who you could shift. You know, whatever is happening, life changes, and he changed. And I was still amazed that he could give up clinical medicine, but at the same time, it just made me realize that life is not stagnant as a doc. He had other skills and he was wise… He thought he could do a bigger role and he did. So, that was profoundly influential for me. (Participant 4)

The literature revealed that physicians often choose academic medicine because of interactions with mentors they had in their training (Borges et al., 2012; Kalen et al., 2010). Borges et al. (2010) observed that some students are "fortunate to cross the path of someone or multiple 'someones' who suggest, introduce or expose them to, and shape their interest in academic medicine" (p. 7).

Racial similarity can be an important component of mentorship during a trainee's formative years (Wright & Carrese, 2003). Minority mentors can offer their minority mentee needed "cultural and emotional support and a sense of belonging to a community" (Mahoney et al., 2008, p. 7). Hollow et al. (2006) concluded that among Native American medical students one of the important factors in successfully pursuing medical education was "exposure to or mentoring from AI/AN health professionals" (p. S66); they continue, "the mere knowledge of another Native's success in medicine mattered" (p S66). In reflecting on her interactions with students, one woman interviewed said, "You don't think you influence… I think it's the collective faculty work but it's like wow, and now they want to do that because somehow they've been influenced" (Participant 4).

Hollow et al. (2006) also showed that a lack of Native American role models and mentors was a barrier to the pursuit of a medical education. Among the women interviewed, one described some of the challenges in her life, "Everyone was telling me, 'No, you can't.' There was nobody saying, 'Yes, you can'" (Participant 2). Another woman recalled difficulties she faced as a Native American student, "Yeah, I mean I pretty much feel like I was out there alone" (Participant 3).

Minority students may "perceive that their race negatively affected their medical school experiences" (Orum et al., 2013, p. 5). Medical students in a study conducted by Odum et al. (2007) cited "lack of support, discrimination, and cultural representation" (p. 149) as barriers to their success. And Native American medical students were reported as more likely than their white peers to consider dropping out of medical school; among Native American students the most one of the common reasons for this was a "major negative personal live event" (Dyrbye et al., 2010, p. 98). Conversely, Odum et al. (2007) related that support of family and friends, connection with others in the school, and mentorship promoted success. One of the women interviewed found that she could help fulfill this role for students,

> Supporting them and becoming their family is what gets them through school. And they say time and time again when they graduate, they recognize that I have been supported not only by my peers but also by the Native community and the fact that you allowed us to go into other tribal communities. (Participant 4)

And as a mentor, the same woman felt that her past experiences as a Native American medical student allowed her to be an especially effective mentor,

> [Mentorship is a] very powerful thing…we are the students and look at the issues that they are going through because we have gone through them once already. And so we can really help to keep them in school and they recognize that constantly... So, I think it has been really influential to be able to be there.

Individuals in mentorship relationships in a study by Stenfors-Hayes et al. (2010) reported that they found satisfaction in acting as mentors. Coates (2012) suggested that physicians are individuals who have dedicated their career to helping others and "serving in the mentorship role is congruent with this motivation and could produce intense satisfaction and a renewed sense of purpose" (p. 94). Likewise, comments by the women interviewed included, "I never even dreamed of that there would be an outcome but it's

so cool," (Paricipant 4); "If I can help someone else have an easier path on their journey

then that is real gratifying," (Participant 2); and that there are opportunities to "share with

[students] why I love what I do…they too should set high goals, work for what excites

them, what stimulates them, what makes them feel successful and productive"

(Participant 1). Fulfillment was also conveyed as,

> It's been good… I fully enjoy being a role model and I feel that students really need role models and mentors. I have actually been able to work with undergraduate students, also, and some high school students so it has allowed me the opportunity to do that work which I feel is very important and I enjoy doing. (Participant 3)

Pleasure in mentoring and the successes of her students was expressed by two

interviewees,

> I have one [student] who is a Native American medical student…who wants to go into gynecology and may want to go into gynecologic oncology, and it's just exciting for me to try to mentor her. And another student that I've helped in my program for years now announced to me that she wants to be pediatric oncologist. So now I have two on the horizon, so I'd say that's exciting. (Participant 1)

The second revealed,

> The best part is that I have been doing it long enough that I see they are doing the work. It just makes me want to cry… They are serving Indian communities or they are serving urban underserved people. It's a 70% rate. (Participant 4)

> Rose et al. (2005) state, the "good mentors have the ability to engage with a

student on a personal and emotional level" and "tolerate expressions of emotion in their

mentees who may ask advice or reassurance when they are feeling frustration,

discouragement, or anxiety" (p. 345). One of the women (Participant 4) interviewed

spoke of her experience with a student,

> I had a Native student… As soon as I saw her I just knew something was horribly, horribly wrong. She didn't have to say anything; I just knew something was up. I

don't know what I said but you know, I started asking her about it and then she just busted out bawling and…just kind of falling apart and then started with 'I don't think I should be in medicine'…and started to escalate to 'I shouldn't be here you know, I can't do this and you know I think people are judging me' and just all these things. It was just this total meltdown… I said, 'Wow, we connect on so many levels, I'd been there too, more than what you know and more than what we have time to talk about.' I'm just so tired of our people feeling that way and just that it has to go…my heart just went out to her… I said, 'I will back you up.' It was like ceremony right there… And that young woman made it through the day… I think I learned a lot that day you know just like support on that emotional or sort of cultural level; it's support or just recognition of those needs and I was so grateful to be there for her… So I'm thinking I am so glad I'm in this place at this school right now and with whatever pitiful thing I could do you know, just to be there for her. And then of course now, years later, ultimately knowing she made it, and she has done well and so that really stands out.

To succeed in academic medicine, DeCastro et al. (2013) emphasized the importance of identifying and actively seeking out mentors that fit one's needs. Additionally, Rose et al. (2005) note that mentors can facilitate development and retention because they "have successfully navigated the professional landscape and can advise trainees based on personal experience" (p. 345). Due to the demands and stressors of a career in academic medicine, success also requires resiliency or the ability to "respond to stress in a healthy, adaptive way such that personal goals are achieved at minimal psychological and physical cost" (Epstein & Krasner, 2013, p. 301). When given the opportunity to share advice for up-and-coming women in medicine, the women's interviews provided feedback very close to the findings of these studies:

> Everybody has setbacks, everybody writes a grant and doesn't get it funded you know, or doesn't quite get the promotion they want when they want it or an article that is turned down or whatever it is, you know um, so keeping your eye on the ball and being persistent and really looking inside yourself and saying this is what I really want and if that's so then working towards that goal and find others to support you to do that. (Participant 1)

The next response was,

> I would say seek a mentor early and seek a Native mentor early or someone who has had experience with mentoring minority faculty and maybe both because it can be a very harsh world out there in the academia…it may not be what you think it's going to be, so I would say talk to somebody who has done it and decide if you want to do it and then seek a mentor early. (Participant 3)

And finally,

> Find a good mentor and if it's possible to find a Native mentor, that's great but you can find a good mentor in someone who is going to feel that you very much value and aspire to use a good role model for that and then also going to that [?] cultural perspective for that field so that you can enrich that as well. But I think that it's extremely important to find a good mentor if you are going to go into academics. (Participant 1)

> Other statements included, "Stay connected to both men and women you know who are doing the work," (Participant 4); "Try really hard to find someone that you can speak with on an ongoing basis, not just meet once, that can help you when you are feeling down and tired and you need to rekindle that enthusiasm," (Participant 2); "Link up with the people who have more experience in that area," (Participant 4); and "Find people who could help you be successful" (Participant 2).

As a final point regarding mentorship, the literature reviewed described important advances in mentorship for faculty academic medicine. There was a distinct move away from the traditional *one size fits all* approach to an emergence of creative mentorship models that better address the individual needs of faculty in academic medicine. Such models include peer mentoring (Lord et al., 2012) that is based on a peer or group of peers who provide professional and emotional support and assist one another through critique and feedback. The utilization of multiple mentors was recommended by DeCastro et al. (2012) so that the knowledge and expertise possessed by a variety of

mentors can be accessed by junior faculty members. Schichtel (2010) described electronic or *e-mentoring* which integrates technological resources such as email, interactive television, computer cameras, or other distance communication tools. E-mentoring allows for interaction between the mentor and mentee at any time regardless of geographic location. No matter the choice or choices of mentorship models, face-to-face interaction is vitally important and cannot be lost. Ideally, strong mentorship would be a combination of didactic, structured models, and spontaneous interaction.

Importance of Culture

The importance of Native American cultural connections was clear in the interviews and reinforced literature. The interviews yielded responses and clear references to culture interwoven throughout interviewees' reflections.

The women interviewed indicated culturally connected motivations in academic medicine as a career and in their choice of professional activities. A study by Elliott et al. (2010) discussed the importance of giving back among Native American women in academic medicine. Among the women interviewed, their career path provided abundant opportunities to do so. In teaching, one interviewee found importance in her ability to serve Native American communities through her ability to "teach [students] the linkage to our culture" and to "manifest my interest in Native health" (Participant 4). Another woman felt that in her role "as a Native researcher [I have] a lot of potential to bring good to the community and have a positive impact" (Participant 5). To one woman, giving back meant that she could "help make changes in the medical field for American Indians

and Alaska Natives that would give me some authority that I could then look for resources that would address disparities" (Participant 1).

Hollow et al. (2006) found that access to Native American role models and mentors was one of the most important factors in their choice to enter medicine. As people who walked in the *same world*, one interviewee recalled her formative years and the special relationship with a Native American mentor, "We would just shoot the breeze you know, make jokes about mutton stew" (Participant 4).

A woman's first-time encounter with a group of Native American physicians mirrored the findings by Hollow et al. (2006); these authors wrote of the impact of Native American role models: "The mere knowledge of another Native's success in medicine mattered" (p S66). The woman interviewed exclaimed, "There were a number of AAIP [Association of American Indian Physicians] physicians…I remember being blown away by the fact that they were, I mean I never seen so many Indian people. You know, I was really overwhelmed" (Participant 4).

Dyrbye et al. (2010) reported that Native American medical students are more likely than their white peers to consider dropping out of medical school, while the study by Elliott et al. (2010) related that over time, the women interviewed grew from mentee to mentor for Native American students. The women in the study spoke of the valuable emotional support they had experienced in their lives; as she became a mentor, one woman spoke of a Native American student's crisis and how the woman (Participant 4) was able support and connect with the student on a cultural level,

> It was just this total meltdown…I said, 'Wow, we connect on so many levels, I'd been there too, more than what you know and more than what we have time to

talk about', I'm just so tired of our people feeling that way and just that it has to go…my heart just went out to her…I said, 'I will back you up.' It was like ceremony right there. (Participant 4)

The women were also able to provide a sense of familial and cultural connections while the medical students were away from home. One alluded to her ability to provide students with interaction with the Native American community and "becoming their family" (Participant 4).

The cultural theme struck one of its strongest notes in the meaningfulness of tribal identity. Participant 2 described herself as "first a Native woman who happens to be a doctor…who I am goes to my soul. And that's the Native American". A second woman identified herself "as a Native female physician capable, independent and again that is specifically as a Native female physician (Participant 3). Tribal identity also emerged as a part of mentorship. One interviewee (Participant 4) described herself as being "from a tribe that's a matriarchal tribe who are supposed to be strong women who are supposed to be outspoken, who are supposed to take of those are more vulnerable; and [mentorship] fits in with that image".

In Native American culture, because of their life experience, elders and their guidance are afforded high respect. This cultural relationship was present in the description of a woman and one of her mentors, "She [a Native American mentor] was not in medicine, per se…she was more of an elder, a grandmother-type figure. Sort of just checking in and making sure everything was OK" (Participant 5). The woman continued that the relationship with this mentor,

> was just a silent understanding of expectations. There were expectations of me and that was it. I was allowed to be myself and follow my interests but she

was…a silent figure that was there…it would have been very easy for me to not continue… If I hadn't continued…I would have had to have a conversation with her.

For one woman, the deciding factor in pursuing what came to be her academic career path was due to the guidance of an elder: "You should come out here, this is a good program and you should at least check it out… [so I thought] this is an elder who knows and I probably should check it out" (Participant 4).

As with other mentorship experiences in their lives, in time, the women became the elders who guided those who follow; as one woman observed, being a mentor "fits with the ideas that an elder used to carry the culture, mentor the next generation" (Participant 1).

Institutional Factors

Schools have historically been hierarchical and competitive systems. The institutional cultures cultivated adverse environments (one woman interviewed reflected, "I was blown away when I took this other position because…hierarchy really stunned me" [Participant 4]) and can include barriers to success for underrepresented minority faculty members to include bias, discrimination, lack of mentors and support, isolation, absence of information regarding promotion and tenure, and disproportionate expectations for committee service. Responses of the women interviewed in this study were in direct support of this. Some comments were:

> I get put on a lot of committees. One of the things I uh, often counsel junior investigators…be careful about being a minority person that's always put to be a representative on the committee because it may be disastrous for an early career to not have enough time for your research or to establish a program when you are running off fulfilling the University's requirement to have people um, of this representation or that representation. (Participant 1)

Another interviewee stated that "as a minority you are assumed to be the expert on minority issues so that was really the only reason why I was put on this committee is because I am a minority" (Participant 3). Study participants cited lack of support ("It's tough as a minority being in medical schools because of a lack of support" [Participant 3]) and questions regarding merit present in their schools:

> There are people who resent if you have worked hard and have had opportunities that they themselves were not willing to work for and so they are going to justify and say 'well, that's because you're a minority.' Rather than saying you put forth the work and effort. (Participant 2)

Interviewees spoke of instances of racism: "I actually had an associate dean tell me I could pass for white and my life would be much easier, why did I not?" (Participant 2); she continued, "I've had partners behind my back call me the Pocahontas doctor and so forth". The comment of another interviewee revealed, "It's really amazing how many inappropriate comments you know are here in reference to minorities or Native people when people are talking about Native people or talking about minorities in general" (Participant 3).

The AAMC (2007) relayed that an institution's culture is such an "extraordinarily powerful force for a group or organization, it is so pervasive and interwoven," that it is rarely questioned or even noticed and can serve as the impetus for "many organizational conflicts and tensions" (p. 4). Women interviewed pointed to negative practices in their institutions, one commented, "I'm thinking, I'm so overwhelmed with just your bashing each other or just what you are doing" (Participant 4).

Mentorship continues to be an integral factor in faculty retention, but despite years of ongoing efforts, success has been limited. Conventional mentorship approaches have operated under the assumption that achievement will occur by addressing an individual's *deficits*. However, this point of view rules out the institutional factors related to attrition and retention. In an unhealthy work environment, individuals may feel that they must need change or relinquish their self-identity, values, or interests to achieve. Pololi et al. (2012) found that contributing factors in the desire by underrepresented academic physicians to leave their current institution included "perceptions of the culture being unethical, and feelings of being adversely changed by the culture" (p. 865). Notably, while the faculty in the Pololi et al. (2012) study did have thoughts of leaving their current institution, they did not indicate an intent to leave academic medicine altogether. Similarly, one of the participants in this study lamented, "I can only work with people that I respect and I am, right now, struggling" (Participant 5).

The literature and interviews began to depart as published studies placed increasing emphasis on how to address institutional factors that act as barriers to faculty recruitment and retention. The AAMC (2009c) stated that improving institutional environments "falls squarely on the academic health centers and the leadership within their medical schools" (p. 9). Culture change or *C-Change* shifts underrepresented faculty recruitment and retention issues from the individual and onto responsibilities of the institution. C-Change is a means to "facilitate an inclusive, humanistic, relational and energizing environment in academic health centers; to help all individual faculty and trainees to reach their full potential; and enhance diversity among those in leadership

positions in academic medicine" (C-Change National Initiative, 1997). Such change must start at the uppermost levels of the institutional leadership and requires undertaking efforts to remove institutional barriers to success at all levels.

Minority populations suffer disproportionate rates of poor health, are less likely to have adequate health insurance and access to health care, and are more likely to experience preventable hospitalizations, poverty, low educational attainment, and inadequate and unsafe housing (CDC, 2011). Successful provision of accessible, quality health care begins with re-thinking what comprises excellent medical education (AAMC, 2009c). As the nation becomes more diverse, access to quality care cannot be achieved by viewing the needs of these diverse populations as providing service for a "subset of the population" (AAMC, 2009c, p. 4). Instead, the encompassing goal of access to quality care is contingent on training a physician workforce that is prepared to provide care all patients. As such, excellence and diversity throughout medical education cannot be considered as separate but as one.

CHAPTER 5. CONCLUSIONS

This study provided the opportunity to explore of the experiences of Native American women physicians on U.S. medical school faculties. This is one of only a handful of studies that considers Native Americans in the medical school settings and one of even fewer that touches on Native American faculty retention and the significance of Native American culture. This study yielded beneficial results, but included limitations.

One of the limitations is that this was a qualitative study conducted with a small number of participants. The women in this study made up a significant representation of the total Native American women physician workforce in academic medicine (nearly one-third of them), and it was apparent that with the final interview that the content of responses was becoming redundant. However, the small number of participants may limit generalizability.

A second limitation is that only the institutional culture of academic medicine was considered in this study. Because of this, the issues that have been discussed in this project, such as faculty retention and mentorship, will need further study to investigate significance in other educational settings.

Finally, the transcripts used for this project were used in this study originally used as a part of a larger study regarding the life experiences of Native American women physician medical school faculty. While the interviewees' responses provided rich and informative data, a more focused set of questions could provide more specific, detailed responses describing their experiences regarding development, training, and work.

Despite limitations, this study has meaningful implications. The healthcare needs of today's population require that future physicians are trained in settings that represent the nation's diversity. The experiences shared by the women in this study help to understand why this is true and provide ways to facilitate diversity in medical schools. In her interview, one woman emphasized "frankly, I want you [students] to be really good at this because my people deserve this". In just a few words, not only does this woman illustrate her dedication to her Native American community, but she also stresses the importance of and her ability to equip others with cultural awareness needed to provide quality health care.

The women in this study started their journeys with the intent to enter clinical practice, along the way they encountered people or circumstances that led them to academic careers. The motivation of these choices went beyond the reasons noted by Borges et al., (2010) such as love of teaching, intellectual stimulation, or choice of subspecialty. The womens' motivation even went beyond the concept of service to community. Truly, the motivation was cultural and existed in the women's realization that academic medicine provided a means to give back to their communities. Though they chose to pursue careers in institutional cultures that often do not promote the success of underrepresented faculty, these women found ways to not only succeed but also to satisfy their need to give back. Through their teaching, research, and service, the women placed themselves in positions where they were visible to others who very likely would never have been cognizant of the women's existence and the needs of Native American people. They were able to open the eyes of both non-Native American and Native American

students. Thus, women were able to express themselves through their passion for Native

American health care and were able to gift their communities with advancement toward a

stronger, healthier future. Because of their desire and ability to contribute to education

and Native American health care, it is the responsibility of medical schools to promote

environments that facilitate the success of Native American women faculty.

In their interviews, the women credited the support of strong mentors in their

lives. Though this study did not focus specifically on mentorship, this message came

through loud and clear. The women who were among only a very few who had reached

their level of success in academic medicine. Notably, with the open-ended questions of

this study, the women were able to fully guide the direction of their responses; however,

none of them took the opportunity to credit themselves for their achievements. Instead,

they chose to speak of the support and encouragement they had received. Some of the

women had the benefit of Native American mentors. Where this was the case, they spoke

of the irreplaceable cultural support these mentors that can be provided only by another

person who has walked in the same world. Clearly, the responses speak to the powerful

impact and indispensable need for mentors as well as the essentiality of cultural support.

They also illustrate the Native American cultural trait of humility and seeing the world as

collective rather than competitive. What this tells us is that development and retention

requires not only mentorship, but that this mentorship must be sensitive to the cultural

sensibilities and needs of Native American women.

The women also expressed the significance of mentorship as they discovered this

to be another avenue of giving back. In coming to a place in her life where she could be

the mentor, one woman spoke of her pleasure in her ability to offer others an "easier path on their journey". The women took their role as mentors seriously. As mentors, they had taken on a special cultural expectations and responsibilities. One woman spoke of how as a mentor, she fulfilled her role as a strong woman in a matriarchal tribe, where she has the responsibility of taking care of those in need of protection. Another woman expressed how as a mentor she became an elder. To her, she now had the honor and obligation of carrying on the culture; in the academic environment, this meant ensuring that others understood the importance of caring for Native American people and giving back to communities through health care. Thus, a component of retention relates to allowing for the womens' cultural expression through access to and ability to support Native American, as well as, all students.

Recommendations for future research. Future research could take many forms; however, because of the need to ensure that research is to be for the benefit of Native American people, the nature and choice of methods must be given seriously consideration. Any projects cannot be conducted solely for the benefit of the researcher or institution, but must be mindful of and applicable to the interests and needs of Native American communities.

A natural direction for future study would be to revisit some of the areas covered in this project. While some rich and thought-provoking data were yielded here, it was part of a larger project that covered a broader area. Targeting more specific areas of interest could occur; for example, a focus on cultural components in the professional lives of Native American academic physicians could result in unique, essentially unchartered

inquiry. Due to the relatively small population involved, a qualitative study with interviews or focus groups that include Native American physicians would add depth and allow participants to share what they identify as relevant insights. Including women and men in the study could elucidate any gender commonalities or dissimilarities. Such a study could increase our understanding of the role of culture in Native Americans and other pertinent information that can be used to develop effective programs and best practices for recruitment and retention.

This additional information regarding Native American medical student experiences and perspectives would also provide beneficial, informative feedback needed for strengthening student programming and support. Due to course schedules and students' their wide distribution across a number of schools, a mixed methods design with an uncomplicated online survey along with focus groups or interviews, with smaller numbers of students targeted to represent various schools and geographic locations, could generate ample, rich data. Areas to explore may be reflections of the students regarding barriers to and facilitators of their success, presence or absence of cultural factors in choosing to pursue medicine, as well as suggestions for what types of supports and resources would facilitate their educational goals.

The impact of tribal identity and elders on the interviewees' lives was very meaningful, so uncovering appropriate ways to include community members as a part of student and faculty supports could have an enormously positive effect on student interest and achievement in medicine, as well as on retention of students and faculty. Focus

groups comprised of Native American physicians and/or students might reveal how best to incorporate elders and other community members as supportive figures.

In the current study, it was apparent that elders *chose* to guide and encourage interviewees to pursue their goals; the implication then is that the women's achievement was of interest to the elders and very likely for the benefit of Native American communities. This finding suggests that a community-based research project that involves elders would allow further insight into how to create student and faculty supports. This implies that the communities can be active participants in increasing the numbers of Native American physicians who would serve the communities and foster opportunities where communities could grow their own providers.

Recommendations for faculty retention. This study revealed the themes of diversity in medical education, mentorship, culture, and institutional factors, each affecting the recruitment and retention of underrepresented minority faculty. By integrating these themes into medical school activities, the insights of Native American women in this study can become effective methods for retaining medical school faculty.

The most immediate possibility is based in these womens' observation that they need opportunities for cultural expression in their teaching and research, as well as options and ability to access Native American mentors, whether they are other professionals or community members. Ensuring opportunities for cultural expression in professional activities could boost retention.

The second recommendation would be to ensure that Native American women have opportunities for outreach and mentorship of students. The participants in this study

clearly found fulfillment in mentoring students. By serving as mentors, the women recognized their ability to give back and have a far-reaching impact on Native American health. They also expressed satisfaction from helping another person reach for and grab hold of their own dreams, just as mentors had done for the women when they pursued their goals.

The women in this study communicated that giving back was a cultural priority for them. Ensuring and supporting professional activities that include their involvement in and ability to contribute to the betterment of Native American communities would be an enriching component of retention efforts that re-energizes and allows for continued cultural connection and professional satisfaction.

Conclusions

The central goal of medical education is said to be creating access to quality care for all. This cannot be achieved without the presence of a diverse learning setting. However, medical schools continue to struggle with successfully creating such an environment. Even so, it is incumbent on schools to ensure attention to diversity is a highest priority. The recruitment and retention of a diverse faculty is essential. A better understanding of how to stop the *revolving door* requires consideration of factors that cause attrition and those that facilitate retention. Retention of Native American faculty in medical schools is essential to creating health equity in the Native American population and, along with the health of all minorities, is in the overall best interest of the nation.

The health care needs of diverse populations are dire; and Native American communities suffer some of the health inequities. With the *browning of America*, the

needs of the people we now consider the minority cannot be treated as such, rather, these needs are the needs of all of our nation's population. The women in this study are the elders and are offering experience, expertise, and unique understandings and perspectives. It is up to academic medicine to accept their gifts to make a diverse learning environment. It is also up to medical schools to follow the lead of these women and view medical education as a gift to all of our people in creating a stronger, healthier nation.

This study can act as a starting point for discussion and consideration of the importance of a presence of Native American physician faculty in medical schools. It can further provide suggestions for components that may be incorporated into retention models. Finally, it can help institutions in assessing their cultures to increase sensitivity and awareness of the needs of Native American faculty.

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Appendix A

Literature Review

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
1991	Mentors and role models for women in academic medicine	Levinson, Kaufman, Clark, Tolle	*Western Jour of Med, 154*(4), 423-426	Survey 558 women fac	Impact of mentors on women's acad med career; lack of availability of mentors	Discover experiences with mentors	Women with mentors had more publications, spent more time on research and higher career satis
1993	Suggested guidelines for institutions with scholars who conduct research on AI	Mihesuah	*Indian Culture and Research Journal 17*(3), 131-139	N/A	Guidance re: research with NA communities	N/A	N/A
1997	C-Change national initiative on gender, culture and leadership in medicine	Brandeis Univ	http://www. brandeis.edu/ cchange/index.html				
1997	Revisions to the standards for the classification of fed data on race	Office of Budget Management	http://www. whitehouse.gov/ omb/fedreg_1997 standards/	N/A	Redefine racial classification for gov purposes	N/A	N/A
1997	The impact of role models on medical students	Wright, Wong, Newill	*Jour of Gen Int Med, 12*(1), 53-56	Questionnaire with 146 med students	Role models and choice of training	Study relationship between exposure to role models during med school and choice of training, determine strength of	Mentors preferred chosen because of personality, clinical skills, competence, teaching ability; exposure to role models strongly associated with med student

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
						association	choice of training
1998	Qualitative inquiry and research design	Creswell	Thousand Oaks, CA: Sage	N/A	Guide re: qual research	N/A	
1998	Career dev for women in acad med: Multiple interventions in a dept of med	Fried, Francomano, MacDonald, Wagner, Stokes, Carbone… Stobo	*JAMA, 276*(11), 898-905	Pre-Post Questionnaires, Women fac	Career obstacles and interventions for women fac	Determine gender-based obstacles in acad med and implement intervention: fac dev, mentoring, reduce isolation	More jr fac retained/promoted
1998	Natives and academics: Researching and writing about AI	Mihesuah (Ed.)	Lincoln, NE: Univ of NE Press	N/A	Contributions by Native authors regarding research issues	N/A	
1998	Minority fac in acad rank in med	Palepu, Carr, Friedman, Amos, Ash, Moskowitz	*JAMA, 280*(9), 767-771	Survey 1807 faculty	URM faculty advancement	Determine if URM were as likely to attain sr rank	URM fac less likely than nonURM to hold sr rank; could not be explained by years of service or productivity
1998	Junior faculty members' mentoring relationships and their professional dev in US med schools	Palepu, Friedman, Barnett, Carr, Ash, Szalacha, Moskowitz	*Acad Med, 73*(3), 318-323	Survey, 1,808 faculty at 24 med schools	Mentoring of jr faculty	Prevalence of mentoring; quality of relationships; variation by gender or race; relationship betw mentoring and institutional support, skill development, career satisfaction	Faculty with mentors reported increased skills

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
1999	Decolonizing methodologies: Research and indigenous peoples	Tuhiwai Smith	London, England: Zed Books Ltd	N/A	Research historically based on western models and consideration of research from and indigenous point of view	N/A	N/A
2000	Racial and ethnic disparities in fac promotion in acad med	Fang, Moy, Colburn, Hurley	*JAMA, 284*(9), 1085-1092	Existing data analysis from AAMC rosters	Promotion of URM faculty	Compare promotion rates of URM and white med school faculty	URM promoted at lower rates compared to white faculty
2002	Increasing women's leadership in acad med: Report of the AAMC project implementation comm	Bickel, Wara, Atkinson, Cohen, Dunn, Holster	*Acad Med, 77*(10), 1043-1061	Committee paper	Need to develop women as leaders	Progress in inadequate, need to recruit, retain, and utilize women's talents for long term institutional success	Recommend emphasis on fac diversity in departmental evals, dept chairs; target women's prof dev; assess institutional practices that put women at a disadvantage to men; make search committees more effective at attracting women; financially support women's programs
2002	The case for diversity in the health care workforce	Cohen, Gabriel, Terrell	*Health Affairs, 21*(5), 90-102	Article	Increased diversity in medical workforce	Changing demographics, culturally competent workforce, access to care,	Achieving adequate diversity depends on fundamental reforms in premedical, k-12

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
						increase research agenda, diverse leadership	educational system to create a pipeline; admissions committee learn to identity students with ability to successfully complete medical school
2002	Warning signs of declining faculty diversity	Lypson, Gruppen, Stern	*Acad Med, 77*(Suppl 10), S10-S12	Existing data obtained from AAMC rosters	US more diverse, not producing a diverse phys workforce	URM students look to URM role models; URMs research on URM health; curriculum	URM not entering med school or acad med despite efforts; URM lack role models; institutions need to consider why there are so few students and fac; despite efforts to develop, recruit, retain URM there is still lack of parity
2003	Patient-centered communications, ratings of care, and concordance of patient and phys race	Cooper, Roter, Johnson, Ford, Steinwachs, Powe	*Annals of Internal Med, 139*(11), 907-915	Pre-Post patient survey, 252 patients	Physician-patient race-concordance	Compare patient-physician communication in race- and non-race concordant clinical visits, differences in satisfaction and participatory decision making	Race-concordant visits more positive effect. Higher ratings independent of patient-centered communication; may be patient or physician attitudes; increasing the

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
							number of diverse physicians most direct strategy to improve healthcare experiences for URMs
2003	Patient preferences for physician characteristics in univ-based primary care clin	Garcia, Paterniti, Romano, Kravitz	*Ethnicity and Disease, 13*, 259-267	Focus groups, 49 URMs	Patient preference for concordance, race, age, gender	Examine patient concordant preferences in primary care physicians	English-speaking women prefer gender concordance; All Spanish speaking patients preferred Spanish speaking physician; Black and Spanish-speaking Latino men preferred race/ethnic concordance; some concerned about availability of concordant physicians
2003	Having the right chemistry: A qual study of mentoring in acad med	Jackson, Palepu, Szalacha, Caswell, Carr, Inui	*Acad Med, 78*(3), 328-334	Telephone interviews, 16 faculty	Mentoring relationships important to success in acad med	Understand what makes mentoring relationships though experiences of faculty	Barriers=lack of mentoring. Finding mentor takes persistence; a certain "chemistry" is needed for mentoring to work; prized mentors have clout, knowledge, interest in mentee,

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
							provide prof and personal support.
2003	Unequal Treatment	Smedley, Smith, Nelson (Eds.)	Institute of Medicine, National Academies Press, Wash DC	Print book	Health disparities	Racial disparities in health care.	Access to care; even after controlling for socioeconomic, race/ethnicity still predictor of quality of care
2003	Serving as a physician role model for a diverse population of medical leaders	Wright & Carrese	*Acad Med, 78*(6), 624-628	Interviews with 29 role models	Role models demonstrate prof behavior	Consider issues surrounding phys role models for diverse learners	Learners prefer like role models; role modeling easier when learner like role model; URM phys better role models for URM learners.
2004	Racial and ethnic disparities in health care: A position paper of the American College of Physicians	American College of Physicians	*Annals of Int Med, 141*, 226-232	Paper/article	Health disparities	Minorities do not receive same quality of care	Poorer health; less access; underrepresented in health professions
2004	NA	AAMC	www.aamc.org	NA	Definition of URM	NA	NA
2004	In the Nation's Compelling Interest	Smedley, Stith Butler, Bristow (Eds.)	Institute of Medicine, National Academies Press, Wash DC	Print Book	URM in health prof; institutional climate	Need for increase in URM health prof; Institutional responses to address	Policy, practice, institutional climate, financial, institutional reform
2004	Mentoring medical students in academic emergency medicine	Garmel	*Academic Emergency Medicine, 11*(12), 1351-1357	Article	Student mentorship	Roles of mentor	Ways to increase likelihood of success in mentoring; responsibilities of mentor

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
2005	Measuring the effectiveness of mentoring relationships	Berk, Berg, Mortimer, Walton-Moss, Yeo	*Acad Med, 80*(1), 66-71	Article	Effectiveness of mentorship; define mentorship	Mentorship is poorly defined, specify mentor characteristics, responsibilities to develop tools to evaluate effectiveness of relationship	Developed two tools to measure; one describes characteristics and outcomes of relationship; other behavioral characteristics of mentor
2005a	Minorities in med educ	AAMC	www.aamc.org/ publications	Statistics	N/A	N/A	N/A
2005b	Table 31: Distribution of US med school fac by race, gender, and acad degree	AAMC, Table 31 Minorities in Med Educ	www.aamc.org/ publications	Statistics	N/A	N/A	N/A
2005	The role of cultural diversity climate in recruitment, promotion, and retention of faculty in academic medicine	Price, Gozu, Kern, Powe, Wand, Golden, Cooper	*J of Gen Int Med, 20*, 565-571	Focus groups and semi-structured interviews	Institutional climate	Faculty input to improve climate	Improve climate; access to care; institutions to increase faculty diversity; role models, mentors; strategies to overcome barriers
2005	Mentoring in the acad med setting: The gender gap	Robinson & Cannon	*Jour of Clin Psych in Med Settings, 12*(3), 265-270	Article	Power in institutions resides with men.	Consider how social dev, communication affect mentorship Effective cross gender mentoring essential	Increased knowledge re: dev psych can help to design successful cross gender mentorship
2005	Informal mentoring	Rose, Rukstalis,	*Acad Med, 80*(4), 344-348	Article	Student mentorship	Do's and don'ts for mentors	Instrumental in conveying acad

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
	between faculty and medical students	Schuckit					knowledge; optimal relationships; flexibility; career satisfaction; personal gratification
2006	Meeting the needs of regional minority groups: The University of Washington's programs to increase the AI/AN physician workforce	Acosta & Olsen	*Acad Med, 81*(10), 863-870	Article	Pipeline	Minority student support program to increase AI/AN physician	Federal funding declining, institutional support needed; have increased number of drs; prepare for culturally responsive care; research
2006	AI/AN: How do they find their path to med school?	Hollow, Patterson, Olsen, Baldwin	*Acad Med, 81*(Suppl 10), S65-S69	Interviews, 10 AI/AN students	Experiences of AI/AN students as they pursue med educ	Understand supports and barriers	Financial barriers can interfere with med school application process; spirituality important
2006	Mentoring women and under-represented minority fac and students: Exp at two instit of higher educ	Kosoko-Lasaki, Sonnino, Voytko	*Jour of National Med Assoc, 88*(9), 1449 -1459	Consider mentoring at 2 institutions	URM, women underrepresented; mentoring significant in this		Mentoring needed at all levels-student, fac
2006	The revolving door for under-represented minority faculty in higher educ	Morento, Smith, Clayton-Pederson, Parker,	James Irvine Foundation Campus Diversity Initiative Eval Project	Report	URM faculty retention, attrition	Report on findings from schools	Faculty retention as large an issue as recruitment in diversity

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
		Teraguchi					
2006	Mentoring in acad med: A systemic review	Sambunjak, Straus, Marusic	*JAMA, 296*(9), 1103-1115	Data, literature review	Value of mentoring	Review evidence about prevalence of mentorship and relationship to career development	Women more difficulty in finding mentors; mentorship important to personal development, career guidance, career choice, research productivity, publication, grant success
2007	Culture and the courage to change: AAMC president's address 2007 annual meeting	AAMC	www.aamc.org	Report	Culture change	Traditional hierarchy of med schools and cultures no longer work	Change culture; courage to change
2007	Exploring obstacles to and opportunities for professional success among ethnic minority students	Odum, Roberts, Johnson, Cooper	*Acad Med, 82*(2), 146-153	Focus groups	Barriers, facilitators for minority med students	Explore the barrier and facilitators for URM meds, develop supports	Develop program/policy to recruit URMs. Improve cultural awareness, reduce bias among students, faculty, staff and admin
2008	The complexities of physician supply and demand: Projections through 2025	AAMC	http://www. innovationlabs.com /pa_future/1/ background_docs/ AAMC%20Compl exities%20of%20 physician%20 demand,%202008 .pdf	AAMC Report	Physician demand and supply	Demand for physicians will increase due to population growth, aging; will not be able to meet demand; make healthcare more efficient	Underserved areas will be hardest hit; primary care physicians already insufficient, will increase; increased med school enrollment not enough; URM

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
					with Pas and nurse practitioners		physicians more likely to care for underserved communities, increasing diversity in physician workforce should be a priority
2008	Factors affecting research participation in African American college students	Diaz, Mainous, McCall, Geesy	*Family Med, 40*(1), 46-51	Survey	Historical factors and race concordance	Researcher/participant concordance increases willingness	Concordance improves participation by African American participants
2008	Minority faculty voices on diversity in acad med	Mahoney, Wilson, Odom, Flowers, Adler	*Acad Med, 82*(8), 781-786	36 URM at one school interviewed	Experiences and perceptions of URM fac	Consider URM fac experiences and prec regarding racial ethnic diversity acad med	URM participation in div-related activities by choice or pressure; gap betw intention and implementation of efforts to increase div; seeing and reacting to discrimination; need for multiple mentors
2008	Acad advancement of women in med: Do socialized gender diff have a role in mentoring?	Mayer, Files, Ko, Blair	*Mayo Clin Proceedings, 83*(2), 204-207	Commentary	Women not advancing as fast as men in acad med	Big factor is mentoring hard to access but is key in success	May need to develop mentoring models suited to women
2008	Case for minority development today	Nivet, Taylor, Butts, Strelnick,	*Acad Med, 81*(10), S65-S69	Report	URMM	Absence of URMM has negative effect	Diversity increasing, lack of URMM adversely

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
		Herbert-Carter, Fry-Johnson, Smith, Rust, Kondwani				on public health, health disparities	affects health/health disparities; faculty face barriers to development
2008	Student body racial and ethnic composition and diversity-related outcomes in US med schools	Saha, Guiton, Wimmers, Wilkerson	*JAMA, 300*(10), 1135-1145	Web-based survey of 20,0112 graduating med students, 118 school	Race, ethnicity diversity in schools	Determine if race/ethnicity associated with diversity-related outcomes	Racial and ethnic diversity in student body is associated with preparing students to meet needs of diverse population
2008	Health inequities: The need for action by schools of medicine	Sanser-Fisher, Williams, Outram	*Medical Teacher, 30*, 389-394	Article	Health inequities	Med school approaches to address health	How med schools can develop ways to address inequities
2008	Diversity in acad med no. 2: History of battles lost and won	Strelnick, Lee-Ray, Nivet, Soto-Greene	*Mt. Sinai Jour of Med, 75*, 449-503	Article	Changing demographics and health disparities	Need to eradicate racism	Legal and political issues related to access to health education and healthcare
2009a	Addressing racial disparities in health care: A targeted action plan for acad med ctrs	AAMC	www.aamc.org/publications	AAMC Report	Health disparities	How AHCs should commit to goal of eliminating health disparities as a part of their mission	Increase diversity of physician workforce; increase medical trainees exposure to underserved settings; increase knowledge regarding segregation of care and disparities; increase physician awareness of

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
							importance of patient race in effective care; improve quality of clinical interactions through increased diversity; increase evaluation to improve clinical interactions and healthcare delivery for diverse patients; lead by example through recruitment and enrollment of diverse students, residents, faculty
2009b	The diversity research forum. The importance and benefits in acad med: implications for recruitment, retention, and promotion	AAMC	www.aamc.org/ publications	AAMC Report	URM recruitment, retention, promotion	Identify barriers and positive enablers encountered by URM in recruitment, retention, and promotion; develop strategies to sustain effective development	Dearth of URM faculty in acad med; numerous barriers and challenges encountered, lower promotion, satisfaction, mentors; despite barriers research shows that URM faculty thrive and succeed with resilience; study why senior faculty have been

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
							successful; diversity enhances campus climate & patient/provider relationships; mentoring invaluable; multifaceted mentoring; develop next generation
2009c	Striving toward excellence: Faculty diversity in med educ	AAMC	www.aamc.org/ publications	AAMC Report	Medical education and patient needs	Changing demographic demands change in medical education to prepare physicians to provide competent care	Shift from thinking of diversity as a recruitment and retention issue; diversity doesn't serve a certain subset of people but is a core ingredient that propels excellence in research, teaching, and clinical practice. Don't focus on lack of diversity but eradicate inhibitors to success. Diversity is the driver of success to provide access to quality health care for all
2009	Improving the diversity of	Price, Powe, Kern, Hill	*Acad Med, 84*(1), 95-105	Surveys with 352	Perceptions of URM and nonURM	Identify perceptions and	URM fac less likely to believe

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
	climate in acad med: Fac perceptions as a catalyst for inst change	Golden, Wand, Cooper		respondents	faculty re: diversity	possible improvement methods	recruitment is unbiased; less satisfaction with racial diversity; less likely to believe networking inclusive; Most believed that would stay in acad med but not in current instit
2009	Issues in the mentor-mentee relationship in acad med: A qual study	Straus, Chatur, Taylor	*Acad Med, 84*(1), 135-139	Interviews, 21 clinician investigators and 7 mentors	Mentor-mentee relationship	Explore relationship to facilitate future mentorship programs	Themes: being assigned a mentor vs. self-identified; roles of a mentor; characteristics of a good mentor; barriers; mentorship strategies; mentorship important but hard to find mentors and develop productive relationships
2009	Making the most of mentors: A guide for mentees	Zerzan, Hess, Schur, Phillips, Rigotti	*Acad Med, 84*(1), 140-144	Article	Effective mentorship	Approach mentorship from the mentee side, how to proactively guide relationship	"Managing up", mentee takes responsibility for own part in, be a leader of relationship, let mentor know what is needed, guide/facilitate

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
							mentor's efforts
2010	How, when, and why do physicians choose careers in med educ	Borges, Navarro, Grover, Hoban	*Acad Med, 85*(4), 680-686	Lit review	Physicians choosing acad med	What influences choice of acad med	Values, gender, mentors and role models, obstacle is loss of interest as residents due to increased learning about acad med; debt
2010	Minority faculty members' resiliency and academic productivity: Are they related?	Cora-Bramble, Zhang, Castillo-Page	*Acad Med, 85*(9), 1492-1498	Questionnaire 74 faculty; 15 focus group participants	Resilience and productivity	Is there a relationship betw resilience and productivity (pubs, grants, promotion)	Themes: barriers to advancement; internal protective factors or cultural buffers; external institutional or environmental facilitators; necessary attributes for ensuring productivity and advancement; faculty may benefit from resiliency development
2010	Burnout and serious thoughts of dropping out of medical school: A multi-institutional study	Dyrbye, Thomas, Power, Durning, Moutier, Massie, ... Shanafelt	*Academic Medicine, 85*(1), 94-102	Web-based surveys	Student attrition and retention	Factors in student burnout and thoughts of dropping out	Strong relationship with personal such as depression and professional distress (burnout); AI/AN, children, major negative life event

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
2010	Staying connected: Native American women faculty members on experiencing success	Elliott, Dorscher, Wirta, Hill	*Acad Med, 85*(4), 675-679	Interviews with five NA women faculty	How NA women describe personal/prof success	Describe personal success to develop more informed mentoring and increased diversity	Maintain NA value of connectedness/culture, giving back; success changed over time; mentoring made success possible
2010	Mentoring medical students during clinical courses: A way to enhance prof dev	Kalen, Stenfors-Hayes, Hylin, Larm, Hindbeck, Ponzer	*Medical Teacher, 32*, e315-e321 http://informa healthcare.com/doi/abs/10.3109/01421 591003695295	118 meds had mentor for 2 yrs, then follow-up questionnaire	1:1 mentoring and prof/personal dev	Consider med student experiences and perceptions of mentoring, if it promoted pers/prof dev	Mentor was more a support than source of knowledge; barriers in relationship were timing and personal chemistry; overall does seem to help development
2010	Race, disadvantage and faculty experiences in academic medicine	Pololi, Cooper, Carr	*Journal of General Internal Medicine, 25(12), 1363-1369*	Interviews with five US medical schools	URM Faculty	Document URM fac perceptions and experiences	Multiple barriers were found; achieving inclusive culture would help of URMs
2010	Core-competence skills in e-mentoring for medical educators: A conceptual exploration	Schichtel	*Medical Teacher, 32*, e248-e262	Literature	e-mentoring	e-mentoring effective and complementary	Greater access to mentors; convenience; technical problems; loss of face to face
2010	Searching for excellence and diversity: Increasing the hiring of women	Sheridan, Fine, Pribbenow, Handelsman, Carnes	*Acad Med, 85*(6), 999-1007	Compare departmental attendees vs. non attendees	Increasing diversity can begin with the hiring process	Test effectiveness of workshop in increased hiring of women fac	Workshop correlated with increased hires

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
	faculty at one acad med ctr						
2010	Being a mentor for undergraduate medical students enhances personal and professional dev	Stenfors-Hayes, Kalen, Hult, Dahlgren, Hindbeck, Ponzer	*Medical Teacher, 32*, 148-153.	Question-naires and semi-structured interviews	Student mentorship	Mentorship rewarding and leads to personal and prof development	Mentoring is rewarding; improved teaching and improved relations with students
2010	Faculty development: from workshops to communities of practice	Steinert	*Medical Teacher, 32*, 425-428.	Article	Faculty Development	Formal and informal development is beneficial	Benefit of a variety of approaches; web-based; workshops, peer coaching; workshops; seminars; role modeling, etc.
2010	The predictors of patient-physician race and ethnic concordance: A med facility fixed-effects approach	Traylor, Schmittdiel, Uratsu, Mangione, Subramanian	*Hlth Research and Educ Trust, 45*(3), 729-805	Survey	Phys/patient race concordance	Consider predictors of race/ethnicity concordance	URM patients less likely to have a concordant match however, URM physician disproportionately served URM patients; increase availability of URM physicians
2011	Chronic disease factors among AI/AN women of reproductive age	Amparo, Farr, Dietz	*Preventing Chronic Disease* http://www.cdc. gov/pcd/issues/ 2011/nov/10_0268 .htm	Statistics on AI/AN women's health	N/A	N/A	N/A
2011	Fac div prog in U.S. med schools and characteristics assoc with higher	Page, Castillo-Page, Wright	*Acad Med, 86*(1), 1221-1228	Survey school leaders 82 med schools	Diversity programs for racial and ethnic minority faculty	Identify characteristics associated with higher faculty	Proportion of med students ten years earlier was significantly

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
	fac diversity					diversity	associated with URM faculty representation; support idea of increasing number of URM med student pipeline to increase faculty diversity
2011	Public health then and now: celebrating 50 years of MMWR at CDC	Ctrs for Disease Control and Prevention	*Morbidity and Mortality Wkly Rpt, 60*(Suppl), 1-124	Government Report	Health disparities	Information on URM health disparities	N/A
2011	Stories from early-career women who have left acad med: a qual study at a single institution	Levin, Lin, Kern, Wright, Carrese	*Acad Med*	1:1 interviews with 20 women phys who left acad med careers	Women entering acad med increasing; women leave acad med at higher rates than men	Why do women leave their acad med careers	Lack of role modeling, poor mentorship, family respond, frustration with research, work-life balance, instit environ
2011	Difficult issues in mentoring: Recommendations on making the "undiscussable" discussable	Bickel & Rosenthal	*Acad Med, 86*(10), 1229-1234	Article	How language, ethnicity, gender, generation make a difference in mentoring relationship	There can be difficulty in mentor relationships due to race/ethnic/language barriers; URMs; other cultural/ethnic differences; linguistic; gender; generational	Uncomfortable situations/issues can be dealt with, but cannot try to escape them; create safety; pay attention to own labels, assumptions, emotions; figure out how to raise difficult issues; institution can train personnel

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
							with skills
2011	Fac Div Progs in Med School and Characteristic assoc higher fac div	Page, Castillo-Page, Wright	*Acad Med*	Survey of 82 institutional leaders from 106 institutions	Diversity in student body best indicator of faculty diversity 10 years later	N/A	suggest student pipeline models to increase diversity
2011	Stress management and resilience training among dept of med fac: A pilot randomized clin trial	Sood, Prasad, Schroeder, Varkley	*Jour of Gen Int Med, 26*(8), 858-861	Intervention using 1:1 90 minute sessions for 8 wks with 32 physicians	Physician stress and resiliency	Stress common among physicians; introduced and assessed a stress management program to increase resiliency, decrease stress and anxiety	Completers had improvement regarding resilience, stress, anxiety and overall quality of life
2011a	Age and sex composition: 2010 (2010 Census Briefs)	U.S. Census Bureau	http://www.census.gov/prod/cen2010/briefs/c2010br-03.pdf	Government Report	National statistics and analysis from 2010 census re: age and sex population	N/A	N/A
2011b	The black population: 2010 (U.S. Census Briefs)	U.S. Census Bureau	http://www.census.gov/prod/cen2010/briefs/c2010br-06.pdf	Government Report	National statistics and analysis from 2010 census re: black population	N/A	N/A
2011c	The Hispanic population: 2010 (2010 Census Briefs)	U.S. Census Bureau	http://www.census.gov/prod/cen2010/briefs/c2010br-04.pdf	Government Report	National statistics and analysis from 2010 census re: Hispanic population	N/A	N/A
2011d	Overview of race and origin: 2010 (2010 Census Briefs)	U.S. Census Bureau	http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf		National statistics and analysis from 2010 census re: overview of race in U.S. population	N/A	N/A
2012a	Table 40: US med school fac by	AAMC Diversity in	www.aamc.org	AAMC Report	Statistics on diversity in medical	N/A	N/A

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
	gender & race	Med Educ: Facts & Figures 2012			student body, faculty, etc. in U.S. medical schools		
2012 b	Table 42: US med school fac by gender, race & ethnicity, and degree, 2011	AAMC Diversity in Med Educ: Facts & Figures 2012	www.aamc.org	AAMC Report	Statistics on diversity in medical student body, faculty, etc. in U.S. medical schools	N/A	N/A
2012	Women physicians: Choosing a career in acad med	Borges, Navarro, Grover	*Acad Med, 87*(1), 105-114	Phone interview, 53 women	Women and careers academic medicine	Understand why, how, and when women choose a career in acad med	Change in specialty; dissatisfaction w/former career; emotionality; parental influence; decision-making styles; decision made when practicing physician, fellow, resident, or medical student; influenced by role models, mentors, faculty, or family; for many decision was unplanned
2012	Being a mentor: What's in it for me?	Coates	*Acad Emergency Med, 19*(1), 92-97	Literature	Benefits of mentorship	Review literature from business, psych, K-12	Personal satisfaction; collaboration; acad and institutional advancement
2012a	American Indian and Alaska Native Population: 2010 (2010 Census	U.S. Census Bureau	http://www.census.gov/prod/cen2010/briefs/c2010br-10.pdf	Government Report	National statistics and analysis from 2010 census re: AI/AN population	N/A	N/A

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
	Briefs)						
2012b	Most children younger than age 1 are minorities (Census Bureau Reports)	U.S. Census Bureau	http://www.census. gov/newsroom/ releases/archives/ population/cb12-90.html		Current status, projection for future	N/A	N/A
2012c	U.S. Census Bureau projections show a slow-growing, older, more diverse nation a half-century from now	U.S. Census Bureau	http://www.census. gov/newsroom/ releases/archives/ population/cb12-243.html	News release	Minority population projection	N/A	N/A
2012	A peer mentoring group for jr clin educ: four yrs exp	Lord, Mourtzanos, McLaren, Murray, Kimmel, Cowley	*Acad Med, 87*(3), 378-383	Response to three open-ended questions; six jr fac & one sr fac	Peer mentoring groups	Ascertain effect of peer mentoring groups	Increased satisfaction, soc connection, prof productivity, person dev thru accountability, collaboration, mutual learning, diversity of thought, involvement in prof activity, motivation; undesirable= exclusivity, lack of hierarchy, scheduling, absence of curriculum, competing interests, overemphasis on personal

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
2012	Commentary: Diversity and inclusion in the 21st cent: Bridging the moral gap and excellence imperatives	Nivet	*Acad Med, 87*(11), 1458 -1460	Commentary	Commitment to diversity but little evidence of effectiveness of efforts	N/A	Need to increase study to understand effective interventions; efforts not effective w/o support from leaders
2012	Institutional variation in the promotion of racial/ethnic minority fac at U.S. med schools	Nunez-Smith, Ciarlegio, Sandoval-Schaefer, Elumn, Castillo-Page, Peduzzi	*Am Jour of Pub Hlth 102*(5), 852-858	AAMC data	URM fac promotion rates	To compare promotion rates by race/ethnicity	Hisp/Black lower promotion rate than white; equitable rates may be due to institutional climate, support of URM, healthcare for all a priority
2012	Org culture in acad hlth ctr: An exploratory study using a competing values framework	Ovseiko & Buchman	*Acad Med, 87*(6), 709-718	Survey acad phys and scientists	Org culture change	Ascertain current and preferred future culture at institution	Preferred team and allowance for innovation; deemphasize hierarchical culture
2012	Why are a quarter of faculty considering leaving acad med? A study of their perceptions of inst culture and intentions to leave at 26 rep med schools	Pololi, Krupat, Civian, Ash, Brennan	*Acad Med, 87*(7), 859-869	Survey over two years, 1,994 complete analysis	Faculty dissatisfaction and attrition	Identify personal and cultural factors associated with intent to leave the institution or acad med	Negative institutional culture, perception of unrelatedness, moral distress, lack of engage-ment, values incongruence, low institutional support, low self-

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
							efficacy
2013	Mentor networks in acad med: Moving beyond dyadic conception of mentoring for junior faculty researcher	DeCastro, Sambuco, Ubel, Stewart, Jagsi	*Acad Med, 88*(4), 488-496	Telephone interview, 100 faculty and 28 mentors	Formal mentorship	Understand mentoring from the perspective of clinician researchers who were members of a formal mentoring relationship	Develop networks rather than traditional dyads; mentor team reflects mentee's needs with special attention toward diversity
2013	Changing the culture of academic medicine: The C-Change Learning Action Network and its impact at participating schools	Krupat, Pololi, Schnell, Kern	*Acad Med, 88*(9), 1-7	Discussion of participants	C-Change	Leaders and faculty address change	Recommend fac dev, mentoring; new policies and procedures, etc.
2013	The social and learning environments experienced by underrepresented minority medical students	Orum, Semalulu, Underwood	*Acad Med, 88*(11), 1-13	Literature	Adverse climate and career interest	Improve social learning environments needed	Improvement needed to make medicine a more inclusive profession; adverse climate decreasing interest in med, lower acad perf, and increase attrition
2013	Physician resilience: what it means, why it matters and how to promote it	Epstein & Krasner	*Acad Med, 88*(3), 301-303	Article	Resiliency	Resiliency key to quality care, sustainability of workforce.	Resiliency promoting programs to cultivate promotion of resiliency

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
2013	Disparities	IHS	http://www.ihs.gov /newsroom/ factsheets/ disparities	Government Report	Disparities in AI/AN health	N/A	N/A
2013	URM candidates are encouraged to apply: A national study to identify effective strategies to enhance racial and ethnic fac div in acad dept of med	Peek, Kim, Johnson, Vela	*Acad Med, 88*(3), 405-412	Survey and interviews of chairs at schools from schools with high and low fac diversity	What are factors associated with greater fac div in med school	Better understand challenges, strategies, and factors for enhancing faculty diversity	Recruitment goes beyond just posting positions; Fac retention includes priority of instit leadership re: diversity; instit resources
2013	Exp of Min Fac Underrep in med at us med school	Pololi, Evans, Gibbs, Krupat, Brennan, Civian	*Acad Med, 88*(9), 1-7	Survey 4578 faculty from 26 med school	Diverse med faculty prepare for quality care for diverse patients	Compare experiences of URM with nonURM	URM had desired higher leadership than nonURM; but lower perceptions of inclusion; lower satisfaction re: diversity efforts; were more frequently engaged in disparities research.
2013	Racial and ethn min med student perceptions and interest in careers in acad med	Sanchez, Peters, Lee-Rey, Strelnick, Garrison, Zhang, ... Castillo-Page	*Acad Med, 88*(9), 1-9	Survey 601 from 103 med schools; 73 focus group participants	URMs interest in acad med	Describe diverse med student perception/interest in aca med careers	Educate student re: acad med career path
2013	Letter to the Editor: min fac face similar challenges as min	Campbell, Rodriguez	*Acad Med*	Letter	Minority faculty face same challenges	Poor preparation; fin struggles; lack of advisement; low	N/A

Year	Title	Author	Publication	Method	General Topic	Goal of Study	Result
	med students					expectations and institutions not structured for min fac advancement	
2013	Building diversity in a complex AHC	South-Paul, Roth, Davis, Chen, Roman, Murrell, ... Schuman	*Acad Med*		Create model for diversity and inclusion, 1) comm and outreach, 2) cult comp 3) recruitment 4) mentoring and retention		
2013	Characteristics of successful and failed mentoring relationships: A qual study across two acad hlth ctrs	Straus, Johnson, Marquez, Feldman	*Acad Med, 88*(10); 82-89	Interviews with 54 faculty	Mentor-mentee relationships	Determine characteristics of effective mentors and mentees; understand factors of successful/failed relationships	Reciprocity, respect, clear expectation, connection, shared values; failed = poor communication, lack of commit-ment, personality, competition, conflict of interest, mentor lack of experience

Appendix B

Diversity, Teaching, Research, Service

Focused Code	Text	Phrases, Words, etc.
Teaching	*(a)* I hoped to stimulate medical students in their idealism…each generation can make a difference, can do better than the last generation…offering more to patients as they go along; *(b)* I enjoy learning. I like working with students; *(c)* the excitement of being right in the middle of all the grand rounds and keeping up to date; *(d)* get myself into position where I could work with medical students and do teaching; *(e)* But what I didn't totally get, although I felt that way was this tremendous commitment to students; *(f)* I've got Native medical students who I can manifest my interest in native health and you know I work in a tribal community and an urban community so I can get them to see both of those things; *(g)* I got excited when I was teaching; *(h)* I can teach them the linkage to our culture; *(i)* I get them in medical school; I have them in a required course; they can't avoid me. You know, so it's like I have been able to work with my interest in multicultural health and communication. You know, some of what you learn there are nuances with some of our other peoples and I can teach you *[the students]* that. And so, I've got them, so I've got medical students and it's not just native medical students either. And then I teach residents so I get the next level and then I teach docs. So it's just the full spectrum; *(j)* my goal…to be able to get myself into position where I could work with medical students and do teaching; *(k)* and frankly I want you *[students]* to be really good at this because my people deserve this right now you are not going to learn it from anybody, anyone; you might be able to learn from people who have more experience but you will not be able to learn it from someone who has a commitment to native people right now; *(l)* no clue until you really are in our shoes and you really walk this way.	Working with students; do teaching; commitment to students; teach linkage to culture; work with med student and do teaching; each generation can make a difference; stimulate med students in their idealism; I got excited when I was teaching; manifest my interest in Native health; nuances with some of our people…I can teach you; I like working with students; you think you don't influence; have them in required course, can't avoid me; work with interest in multicultural communication; I want you to be good at this, my people deserve this; no clue until you walk in our shoes
Research	*(a)* the challenge and opportunities of research…that ongoing educational piece, rather than struggle with reading a journal when you're exhausted but being right in the middle of writing the journals and being part of the studies was very exciting; *(b)* wanted to be an independent investigator; *(c)* became a cancer specialist…so research oriented, so evidence based medicine that it's a natural aspect to want to do clinical research and to affiliate with cancer setting that do state of the art cutting edge treatment for cancer; *(d)* I am hoping to submit an application for a career award so that I can have more protected time to focus in on my research area and again then through that [?] award, um get myself into or become an independent investigator with the career award activities; *(e)* chance to contribute in a [?]	Challenges and opportunities for research; being a part of the studies is very exciting; independent investigator; focus on research; career awards; far reaching… research and health care interest… underserved; research related to clinical work; as a Native researcher … community/impact; chance to

Focused Code	Text	Phrases, Words, etc.
	than what I saw as potentially a more far reaching [?] to my area of research and health care interest which is you know, serving underserved populations; *(f)* do research related to the kind of clinical work I was doing; *(g)* there is also a lot of opportunity to have a positive influence and the community does like to see Native researchers so I mean that is why I'm doing what I'm doing because of I as a Native researcher have a lot of potential to bring good to the community and have a positive impact	contribute in far reaching; my area of research…serving underserved populations
Service (all other codes tied to service to community)	*(a)* Women have to travel several hours and so fortunately, where I am, I have been able to use our facilities, our portable machinery and take over to the reservation. And I go to the senior citizens' home and get as many people that are appropriate for scanning and give them information to take back to their doctor and I'm working on some things with diabetes; *(b)* saw it as a potential to do more good to help make changes in the medical field for American Indians and Alaskan natives that would give me some authority that I could then look for resources that would address disparities.; *(c)* I've got young kids; I've got them as college students who are thinking about medicine. In terms of just community programs that I interact with them at a community level.	Able to use facilities…take over to reservation; make changes…for AI/AN; give authority
Academic Career	*(a)* when I became a cancer specialist… it's a natural aspect to want to do clinical research and to affiliate with cancer setting that do state of the art cutting edge treatment for cancer; *(b)* Although I don't think I really saw it at the time; it was really more like I can see where there just is not enough of us *[health providers with competencies to care for Native patients]* in the field and if this motivates anyone to go into you know, whether they are native or non-native, to go into and serve people *[inaudible]* then I really have a responsibility to do this. So that's how I started. I just signed on the dotted line on the piece of paper; *(c)* you will be able to take better care of our people. That was the motivation; *(d)* and he said, "[refers to self by name] you should go into this" and I was very young and sassy at the time and I said, "no way ___ are you kidding, I am going out to the rez" [slight laughter]. And so you know, it just didn't even occur to me actually. But, I have to admit that thought sort of stayed in my head a little bit; *(e)* I did clinical work full time and then just decided that I wanted to expand my horizons; sort to speak and learned about the opportunity to get my MPH through a fellowship program; *(f)* I am not sure that I originally intended to go into medicine; *(h)* challenge and opportunities of research…that ongoing educational piece, rather than struggle through reading a journal when you're exhausted, but being right in the middle of writing the journals and being a part of the studies is exciting; *(i)* I got excited when I was teaching, writing curriculum, working on policy	Cancer specialist; just is not enough of us; don't think I saw it at the time; if motivates anyone to serve people; responsibility to do; signed the dotted line; teaching, writing curriculum, working on policy; you should go into this… the thought sort of stayed in my head; expand my horizons; not sure I intended; challenges and opportunities; educational piece; being part of studies; you will be take better care of our people;

Focused Code	Text	Codes and Phrases
Mentorship	*(a)* as far as another Native American woman physician in academic medicine, no I didn't. My role models were typically white females who were excellent at what they did and often had sensitivities and skills…they encouraged me. They made me feel that this was an area that I could succeed at and that I could develop some leadership and that in doing so I could make a difference for our people; *(b)* I have a couple of very good mentors and so I feel like I am moving along. It's just the process that takes time; *(c)* it's quite clear to me that you do need some advocacy with that [advancement in an academic setting] and you do need these connections to be able to make that happen; *(d)* And so I think they all influenced me on some level with different skill sets; you know, some of them for their ability to diagnose, some of it was for their ability to educate patients, some of it was for their advocacy for us and for the health system that we were in; *(e)* as long as there are mentors I think that you will be able to sort of deal with some of the challenges [of medicine]	*Professional Mentors:* typically white females; feel I could succeed; good mentors… moving along; need for connections; encouraged me; feel I could succeed; need advocacy; mentors…deal with challenges
	(a) It's very difficult to get good mentors. And first of all, if you're saying as a woman and you want to mentor, someone who could help you, knowing where the land mines are, know what's appropriate and what's not appropriate in certain settings, it's very difficult to find another woman mentor. And I am not saying that men cannot be good mentors; some of my best mentors have been men…it's really hard to find women as role models because you look at the statistics, and there are not many very successful women in academics nor those who are minorities; *(b)* I did not have the mentorship because I came in a different path and everybody was telling me 'no you can't'. There was nobody saying 'yes you can'; *(c)* Yeah, I mean I pretty much feel like I was out there alone	*Absence of mentor [includes formative years]:* No one to say yes you can; hard to find good mentor; difficult to find another woman mentor; not many successful women; nor those who are minorities; feel like I was alone
	(a) there were a number of AAIP physicians that I had interacted with when I was in ANAMS you know, I started with the student organization in 1980 and I remember being blown away by the fact that they were, I mean I never seen so many Indian people you know, I was really overwhelmed... There were some that were academic physicians but again I don't think I got it at that time; it was just like oh this is really cool; *(b)* You know, and then ____ would take me out to dinner and you know, we would just shoot the breeze you know, make jokes about mutton stew	*Cultural support:* so many Indian people; make jokes about mutton stew
	(a) you should come out here, this is a good program and you should at least check it out and I am thinking, this is an elder who knows and I probably should check it out; what do I know	*Elder/Tribal ID:* This is an elder; more of an elder, a grandmother-type

Focused Code	Text	Codes and Phrases
	you know; *(b)* she was not in medicine, per se, but she was there within the Medical School and she was more of an elder, a grand-mother-type figure. Sort of just checking in and making sure everything was OK. Not saying too much, but it was just almost a family member looking out, somebody who was just there. I would say she was kind of an important figure in the background; *(c)* She was a respected person. And, personally, she was just there, almost looking over my shoulder where I was in a way alone in the whole process. There was always someone, I am sure, having a conversation about whether or not I was on track or behaving properly; *(d)* I think it was just a silent understanding of expectations. There were expectations of me and that was it. I was allowed to be myself and follow my interests, but she was…I don't know exactly how to say it…she was a silent figure …But, before that point, it would have been very easy for me to not continue and she was there within the system and if I hadn't continued, I think I would have had to have had a conversation with her and I think that is the way; *(f)* Well it fits with the ideas that an elder used to carry the culture, mentor the next generation *(g)* from a tribe that's a matriarchal tribe who are supposed to be strong women who are supposed to be outspoken, who are supposed to take of those are more vulnerable; and [mentorship] fits in with that image	figure; respected person; looking over shoulder; conversation with her, that is the way; an elder… mentor the next generation; matriarchal tribe…take care of more vulnerable
	(a) The other thing I was thinking about is again it isn't just the message of academia, it's the basic fundamentals of you could do anything, you don't just have to be a doctor first, you could be anything; *(b)* He made it clear that it was a life-long process of education. It was my obligation to read and be current; *(c)* this is what you are going to do. I was like ok, ok; *(d)* It was really just like the unspoken message was that you know you are worth it; *(e)* my fellowship chair …was extremely supportive and stressful times when I thought that I may not want to continue that I may want to drop out of the program, he immediately helped to turn me around to get me refocused.; *(f)* So it was these issues of profound advocacy actually as well as emotional support that you are not crazy; it probably is crazy out there and you know, you are probably more sane than you think.	*Belief/Emotional/Times of Stress/Advocacy:* be anything; obligation to read and be current; what you're going to do; worth it; supportive… refocused: profound advocacy
	ironically it was like as a student you don't think you can necessarily support them [mentors] but it was you know, at that time ___ was president of the AAIP and we were having a meeting out there and he was like [refer to self by name] I need your help. So, you know but again, this understanding, well I guess, there is reciprocity;	*Reciprocity:* he was like…I need your help
	I think he really influenced me and then ultimately watching his career because he bailed on pediatrics and ended up going to get an MBA. His interest turned out to pretty much be in the policy arena. And, that influenced me too to say that here's somebody who you could shift. You know, whatever is happening, life changes, and he changed. And I was still amazed that he could give up clinical medicine, but at the same time, it just made me realize that life is	*Teach by example:* shift; life changes; life is not stagnant

Focused Code	Text	Codes and Phrases
	not stagnant as a doc. He had other skills and he was wise…He thought he could do a bigger role and he did. So, that was profoundly influential for me.	
Student Mentorship	*(a)* I have one who is a Native American medical student named ___ whose here at ___ who wants to go into gynecology and may want to go into gynecologic oncology and it's just exciting for me to try to mentor her. And another student that I've helped in my program for years now announced to me that she wants to be pediatric oncologist. So now I have two on the horizon, so I'd say that's exciting; *(b)* the best part is that I have been doing it long enough that I see they are doing the work. It just makes me want to cry…They are serving Indian communities or they are serving urban underserved people. It's a 70% rate;	*Successes of students:* two on the horizon…that's exciting; see the work they are doing…makes me want to cry; they've been influenced
	(a) to share with them you know why I love what I do to try to [?] younger generations that you know, they too should set high goals, you know work for what excites them, what stimulates them, what makes them feel successful and productive; *(b)* try to give support to other people to say 'yes you can, don't let someone else tell you what you should do or should be but find people who could help you be successful; *(c)* you know I felt like I had had a lot of support going through the process, particularly with other native physicians and didn't really realize that it would manifest in that way *[via academic med]*; *(d)* You don't think you influence… I think it's the collective faculty work but it's like wow, and now they want to do that because somehow they've been influenced	*Teaching; work with students:* set high goals; what excites them; yes you can; had a lot of support; share with them;
	(a) it takes a while you know, to see it come to fruition. So there have been Natives who have come through and other underrepresented minorities but it just takes longer because we have to start further back; *(b)* you know the pipeline is so small and to try to identify students who could make that long haul and especially [inaudible] is even more difficult so it's you know, it's still a long ways to go but I do think that you know opening eyes and potentials for students that come along;,	*Pipeline:* takes longer…start further back; pipeline so small;
	(a) try really hard to find someone that you can speak with on an ongoing basis, not just meet once, that can help you when you are feeling down and tired and you need to rekindle that enthusiasm; *(b)* I would say seek a mentor early and seek a Native mentor early or someone who has had experience with mentoring minority faculty and maybe both because it can be a very harsh world out there in the academia…it may not be what you think it's going to be, so I would say talk to somebody who has done it and decide if you want to do it and then seek a mentor early; *(c)* find others to support you to do that; *(d)* link up with the people who have more experience in that area; *(e)* start to make connections to talk to other people who have done it; *(f)* it is very challenging especially if you don't have a good mentor; *(g)* find people who could help you be successful; *(h)* stay connected to both men and women you know who are doing the work; *(i)* find a good mentor and if it's possible to find a Native mentor, that's	*Guidance:* find someone you can speak to; seek a mentor early; Native mentor; others to support you; link up with people; make connections; have a good mentor; stay connected; people who help you be successful

Focused Code	Text	Codes and Phrases
	great but you can find a good mentor in someone who is going to feel that you very much value and aspire to use a good role model for that and then also going to that [?] cultural perspective for that field so that you can enrich that as well. But I think that it's extremely important to find a good mentor if you are going to go into academics.	
	(a) everybody has set backs, everybody writes a grant and doesn't get it funded you know, or doesn't quite get the promotion they want when they want it or an article that is turned down or whatever it is, you know um, so keeping your eye on the ball and being persistent and really looking inside yourself and saying this is what I really want and if that's so then working towards that goal and find others to support you to do that; *(b)* Perseverance; *(c)* it can be a very harsh world out there in the academia…it may not be what you think it's going to be.	*Resiliency:* not giving in to frustration; keep eye on the ball; be persistent; perseverance; harsh world in academia
	(a) And so we can really help to keep them in school and they recognize that constantly. I'm not saying that just as an individual but this collective ability of supporting them and becoming their family is what gets them through school. And they say time and time again when they graduate, they recognize that, I have been supported not only by my peers but also by the Native community and the fact that you allowed us to go into other tribal communities. You opened doors for us that we didn't, you helped us do research in Indian communities. So, I think it has been really influential to be able to be there	*Cultural Support/connective relationship:* becoming their family; supported…by the Native community; to into other tribal communities; helped do research in Indian communities
	(a) what I didn't totally get, although I felt that way was this tremendous commitment to students and you know I felt like I had had a lot of support going through the process, particularly with other Native physicians; *(b)* [mentorship is a] very powerful thing…we are the students and look at the issues that they are going through because we have gone through them once already. And so we can really help to keep them in school and they recognize that constantly... So, I think it has been really influential to be able to be there.	*Mentor influenced mentoring; put self in student's shoes:* commitment to students…had a lot of support; look at issues…we have gone through already;
	(a) I had a Native student…As soon as I saw her I just knew something was horribly, horribly wrong. She didn't have to say anything; I just knew something was up. I don't know what I said but you know, I started asking her about it and then she just busted out bawling and … just kind of falling apart and then started with 'I don't think I should be in medicine'…and started to escalate to 'I shouldn't be here you know, I can't do this and you know I think people are judging me' and just all these things. It was just this total melt down…I said, 'wow, we connect on so many levels, I'd been there too, more than what you know and more than what we have time to talk about', I'm just so tired of our people feeling that way and just that it has to go…my heart just went out to her…I said, 'I will back you up.' It was like ceremony right there…And that young woman made it through the day… I think I learned a lot that day you know just like support on that emotional or sort of cultural level; it's support	*Emotional:* I will back you up; emotional or sort cultural level; be there for her; recognition of those needs

Focused Code	Text	Codes and Phrases
	or just recognition of those needs and I was so grateful to be there for her….So I'm thinking I am so glad I'm in this place at this school right now and with whatever pitiful thing I could do you know, just to be there for her. And then of course now, years later, ultimately knowing she made it, and she has done well and so that really stands out	
	(a) It's been good… I fully enjoy being a role model and I feel that students really need role models and mentors. I have actually been able to work with undergraduate students, also, and some high school students so it has allowed me the opportunity to do that work which I feel is very important and I enjoy doing; *(b)* if I can help someone else have an easier path on their journey then that is real gratifying; *(c)* I never even dreamed of that there would be an outcome but it's so cool; *(d)* share with them why I love what I do…they too should set high goals, work for what excites them, what stimulates them, what makes them feel successful and productive."	*Satisfaction:* been good; enjoy being role model; I feel is very important; enjoy doing it; real gratifying; never even dreamed; it's so cool

Appendix D

Culture

Focused Code	Text	Phrases, Words, etc.
Overlap with other codes (some examples)	*(a)* I'd like to see more Native people in general in this field *[academic medicine]; (b)* teach [students] the linkage to our culture; *(c)* as a Native researcher [I have] a lot of potential to bring good to the community and have a positive impact; *(d)* help make changes in the medical field for American Indians and Alaska Natives that would give me some authority that I could then look for resources that would address disparities; *(e)* and frankly I want you [students] to be really good at this because my people deserve this right now you are not going to learn it from anybody, anyone; you might be able to learn from people who have more experience but you will not be able to learn it from someone who has a commitment to native people right now.*(f)* no clue until you really are in our shoes and you really walk this way; *(g)* It was just this total melt down…I said, 'wow, we connect on so many levels, I'd been there too, more than what you know and more than what we have time to talk about', I'm just so tired of our people feeling that way and just that it has to go…my heart just went out to her…I said, 'I will back you up.' It was like ceremony right there; *(h)* becoming their family; *(i)* I've got native medical students who I can manifest my interest in Native health and you know I work in a tribal community and an urban community so I can get them to see both of those things; *(j)* community does like to see Native researchers; *(k)* I'm working on some things with diabetes help make changes in the medical field for American Indians and Alaska Natives; *(l)* I have one who is a Native American medical student named ___ whose here at ___ who wants to go into gynecology and may want to go into gynecologic oncology and it's just exciting for me to try to mentor her. And another student that I've helped in my program for years now announced to me that she wants to be pediatric oncologist. So now I have two on the horizon, so I'd say that's exciting; *(m)* the best part is that I have been doing it long enough that I see they are doing the work. It just makes me want to cry…They are serving Indian communities or they are serving urban underserved people. It's a 70% rate; *(n)* I have been supported not only by my peers but also by the Native community and the fact that you allowed us to go into other tribal communities. You opened doors for us that we didn't, you helped us do research in Indian communities. So, I think it has been really influential to be able to be there	Native people; Native health; linkage to culture; Native researcher; changes in medical field for AI/AN; potential to bring good to the community; my people deserve this; our shoes; walk this way; tired of our people feeling that way; it was like a ceremony; becoming family; Native American student; they are serving Indian communities; research in Indian communities
Same world	We would just shoot the breeze you know, make jokes about mutton stew	[Jokes; cultural sense of humor]

Focused Code	Text	Phrases, Words, etc.
Elder/tribal ID	*(a)* you should come out here, this is a good program and you should at least check it out and I am thinking, this is an elder who knows and I probably should check it out; what do I know you know; *(b)* she was not in medicine, per se, but she was there within the Medical School and she was more of an elder, a grand-mother-type figure. Sort of just checking in and making sure everything was OK. Not saying too much, but it was just almost a family member looking out, somebody who was just there. I would say she was kind of an important figure in the background; *(c)* She was a respected person. And, personally, she was just there, almost looking over my shoulder where I was in a way alone in the whole process. There was always someone, I am sure, having a conversation about whether or not I was on track or behaving properly; *(d)* I think it was just a silent understanding of expectations. There were expectations of me and that was it. I was allowed to be myself and follow my interests, but she was…I don't know exactly how to say it…she was a silent figure …But, before that point, it would have been very easy for me to not continue and she was there within the system and if I hadn't continued, I think I would have had to have had a conversation with her and I think that is the way; *(e)* She was a respected person. And, personally, she was just there, almost looking over my shoulder where I was in a way alone in the whole process; *(f)* Well it fits with the ideas that an elder used to carry the culture, mentor the next generation, try to stay true to values while at the same time being professional.	Elder; guidance; encouragement of pursuing goals
AI role models	there were a number of AAIP [Association of American Indian Physicians] physicians…I remember being blown away by the fact that they were, I mean I never seen so many Indian people. You know, I was really overwhelmed	AI mentors, role models
	(a) Maybe 3 or 4 years ago, I had a native student…she came to class a little bit early and she just looked terrible, I mean, as soon as I saw her I just knew something was horribly, horribly wrong and I said wow, the connection on so many levels you know, I'd been there too more than what you know and more than what we have time to talk about and just trying to think of what does she need, you know just what kind of support you know.. Just at that moment I think I'm just so tired of our people feeling that way and just that it has to go. It just made me much more, my heart just went out to her…It was like ceremony right there,	Emotional
	(a) if I can help someone else have an easier path on their journey then that is real gratifying.	Satisfaction
Guidance	*(a)* find a good mentor and if it's possible to find a native mentor… use a good role model for that and then also going to that [?] cultural perspective for that field so that you can enrich that as well; *(b)* I would say seek a mentor early and seek a Native mentor early or someone who has had experience with mentoring minority faculty and maybe both because it can be a very harsh world out there in the academia	Find a good mentor

Appendix E

Barriers/Institutional Factors

Code	Text	Phrases, Words, etc.
Barriers	*(a)* I get put on a lot of committees. One of the things I uh, often counsel junior investigators of all kinds whether they are Native or not is you know be careful about being a minority person that's always put to be a representative on the committee because it may be disastrous for an early career to not have enough time for your research or to establish a program when you are running off fulfilling the University's requirement to have people um, of this representation or that representation; *(b)* And the other thing is that as a minority you are assumed to be the expert on minority issues so that was really the only reason why I was put on this committee is because I am a minority,	Representative on committee; disastrous for career; time for research; fulfilling Univ requirements; expert
	(a) In medical school I actually had an associate dean tell me I could pass for white and my life would be much easier, why did I not. And so, you do still see and hear these challenges. I've had partners behind my back call me the Pocahontas doctor and so forth; *(b)* it's hard as a minority primarily it's tough as a minority being in medical schools because of a lack of support and the continued I guess naivety of society and academia; It's really amazing how many inappropriate comments you know are here in reference to minorities or Native people when people are talking about Native people or talking about minorities in general.	Tell me I could pass for white; life would be easier; Pocahontas doctor; lack of support; inappropriate comments;
	There are people who resent if you have worked hard and have had opportunities that they themselves were not willing to work for and so they are going to justify and say 'well, that's because you're a minority'. Rather than saying you put forth the work and effort	Resent; opportunities they were not willing to work for; well… you're a minority;
Institutional Factors	I thought that you know [?] diversity training was kind of a standard policy and practice because of what I've seen in medical organizations that have had that kind of training but it doesn't seem to be in the University setting.	Diversity training…doesn't seem to be in setting
	(a) I was blown away when I took this other position because of the issue of communication and hierarchy really stunned me. *(b)* I'm thinking, I'm so overwhelmed with just your bashing each other or just what you are doing; *(c)* I can only work with people that I respect and I am, right now, struggling and I think being like that to the academic world where people do things for different reasons.	Issue of communication; hierarchy; bashing each; can only work with people I respect…struggling