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Examining Dimensions of the Organizational Culture at Colleges of Veterinary Medicine in the United States

Abstract

The purpose of this study was to explore the organizational culture present in veterinary medicine academia from the perspective of the female faculty. According to the Association of American Veterinary Medical Colleges (AAVMC), during the 2016-2017 academic year 80.5% of students enrolled at a college of veterinary medicine (CVM) in the United States were women while 35.4% of tenure or tenure-track veterinary professors were female (AAVMC, 2017). There is no empirical, published literature that has examined the organizational culture at the colleges of veterinary medicine in the United States. In this quantitative study, a survey entitled, Culture Conducive to Women's Academic Success (CCWAS) was distributed to approximately 1,100 female veterinarians who were employed at a CVM accredited by the American Veterinary Medical Association (AVMA) in the United States. The survey examined three aspects of organizational culture, namely freedom from gender bias, support for work-life balance, and equal access to opportunities. The results found that all three dimensions of culture affected female veterinary faculty with both gender bias and work-life balance being experienced more significantly. There were no statistically significant findings between the demographic categories of marital status, dependent child status, or job title and any of the dimensions of organizational culture.

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Examining Dimensions of the Organizational Culture at Colleges of Veterinary Medicine
in the United States

By

Rachel A. Hendricks

Submitted in partial fulfillment
of the requirements for the degree
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Supervised by

Kim VanDerLinden, Ph.D.

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Ralph C. Wilson, Jr. School of Education

St. John Fisher College

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Dedication

I would like to dedicate this work to my amazing husband, Brian, and my wonderful daughter, Evawynn who had to suffer through my stressful deadlines and lack of quality wife and mama time. Without your support, understanding, and inspiration this process would have been much more difficult. Evawynn, my kind, smart, brave, and beautiful girl, know that you can do anything you set your mind to. You both are my rocks and I love you more than you can imagine.

There have been many people that have helped me along the way through my doctoral path. I would like to offer a special thank you to Dr. Kim VanDerLinden, my committee chair. I greatly value your mentorship and words of advice, not only on my dissertation process but also in my classwork and career aspirations. As a mentor, not only did you push me to do better, your knowledge, humor, and patience made the growth enjoyable, even in the tough moments. Thank you for taking up the task of my dissertation chair half-way through the process. And thank you to Dr. Cathleen Dotterer for being my dissertation committee member through my entire dissertation process. Your voice and guidance helped me through difficult transition periods. I value your thoughts, critiques, and support.

To Dr. Sally Roesch Wagner, who started out as a field study advisor and ended up as a friend. Thank you for seeing something valuable in me and calling it out, repeatedly. Your sage wisdom, experience, and example provided me with clarity of

thought. Your unstoppable persistence and fearlessness are my model. I aspire to be as dangerous a woman as you are.

Many wonderful new friendships and support came out of this educational experience. I would like to thank Dr. David Brown for his undying support and friendship throughout the entire scholastic process. From reading every single paper to providing late night answers, you have been essential to my scholastic endeavor. Your humor, support, and knowledge of Broadway musicals (that almost rival mine), was invaluable. I cannot wait to see what the future holds for us both.

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Lastly, I would also like to thank the Simply Thrive Team. Thank you for your effort, attitude, and collaboration that made our team so successful. We did not just survive, we thrived!

Biographical Sketch

Rachel Anne Hendricks is the Practice Administrator at Cayuga Veterinary Services in Auburn, New York and has almost 20 years of experience in veterinary medicine. Previously, she was a Practice Consultant for the American Animal Hospital Association consulting with and speaking at over 400 veterinary hospitals and veterinary colleges in Northeast Canada and the United States. She also speaks on human resources and organizational culture topics at national veterinary conferences.

Ms. Hendricks earned her Bachelor of Science degree in Biology from Houghton College and a Master's in Management degree from the University of Phoenix. She also received an associate in applied science degree in veterinary technology from Bel-Rea Institute of Veterinary Technology. She is a Licensed Veterinary Technician (LVT) as well as a Certified Veterinary Practice Manager (CVPM). In 2010 she received her Senior Professional in Human Resources (SPHR) certification and in 2015 her Society for Human Resources Management Senior Certified Professional (SHRM-SCP) certification. She currently serves on three non-profit boards for her community.

Ms. Hendricks began the Ed.D. program in Executive Leadership at St. John Fisher College in the spring of 2017 and conducted her research under the supervision of Dr. Kim VanDerLinden and committee member Dr. Cathleen Dotterer. Her research interests are focused on veterinary leadership and gender disparity in leadership. Ms. Hendricks received the Ed.D. degree in 2019.

Abstract

The purpose of this study was to explore the organizational culture present in veterinary medicine academia from the perspective of the female faculty. According to the Association of American Veterinary Medical Colleges (AAVMC), during the 2016-2017 academic year 80.5% of students enrolled at a college of veterinary medicine (CVM) in the United States were women while 35.4% of tenure or tenure-track veterinary professors were female (AAVMC, 2017). There is no empirical, published literature that has examined the organizational culture at the colleges of veterinary medicine in the United States.

In this quantitative study, a survey entitled, Culture Conducive to Women's Academic Success (CCWAS) was distributed to approximately 1,100 female veterinarians who were employed at a CVM accredited by the American Veterinary Medical Association (AVMA) in the United States. The survey examined three aspects of organizational culture, namely freedom from gender bias, support for work-life balance, and equal access to opportunities. The results found that all three dimensions of culture affected female veterinary faculty with both gender bias and work-life balance being experienced more significantly. There were no statistically significant findings between the demographic categories of marital status, dependent child status, or job title and any of the dimensions of organizational culture.

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Chapter 1: Introduction

Historically, the gender imbalance in higher education leadership was thought to be a function of the lack of qualified women available rather than systemic discriminatory acts (Monroe & Chiu, 2010). Over time, the pool of qualified women has increased but has not led to a commensurate number of women achieving leadership roles within academia. These roles include tenured, full professor, department head, dean, and president, and other non-academic roles such as human resources director or the director of finance.

There is a leadership gender imbalance in colleges of veterinary medicine (CVM) in the United States. According to the Association of American Veterinary Medical Colleges (AAVMC), during the 2016-2017 academic year 80.5% of students enrolled at a CVM in the United States were women while 35.4% of tenured or tenure-track veterinary professors were female (AAVMC, 2017). This paper will examine the possibly explanations for this phenomenon and the place that organizational culture may play a role in the gender imbalance.

History of Veterinary Medicine

Veterinary education became a formal educational process in 1761, when the first veterinary college opened in Lyon, France (Degueurce, 2012). Shortly after, other veterinary colleges were founded throughout Europe, and American men who wanted to study veterinary medicine trained in European colleges (O'Brien, 2015). Private veterinary colleges began opening in the United States in 1852, with the establishment of

the Veterinary College of Philadelphia. Iowa State University became the first public college of veterinary medicine in the United States in 1879.

When veterinary schools opened in the United States, they fell into two groups. The first group offered practical instruction and were usually short study programs designed to prepare men to meet the health needs of horses and livestock through anecdotal and unempirical means (Smith & Hagstrom, 2015). Equine and livestock care and disease prevention were the focus, as they were a high importance to the economy, food supply, and military operations (Smith, 2013).

The second group of schools were established in conjunction with medical schools and were more rigorous academically because of their scientific and empirical nature (Smith, 2013). This latter group of schools were developed in association with the Land Grant Act of 1862 which donated public lands to provide colleges for the benefit of agricultural studies. Their principal focus in veterinary education was clinical medicine and research related to the health of livestock and horses as well as to zoonotic diseases, such as rabies, tuberculosis, and anthrax.

By 1980, 25 of the 27 veterinary colleges were part of Land Grant colleges, with Tufts University and the University of Pennsylvania being the exceptions (Smith, 2013). As of 2018, there were 30 colleges of veterinary medicine (CVM) in the United States accredited, or with accreditation pending, by the Association of American Veterinary Medical Colleges (AAVMC, 2018). This accreditation process assures that graduates of an accredited CVM receive an education that equips them for the profession at an entry level and makes them eligible to take a professional board licensing examination.

Admission to a CVM requires appropriate prerequisite undergraduate courses and successfully passing the Graduate Record Examination (GRE). Veterinary school is considered a graduate professional degree, earning the title of Doctor of Veterinary Medicine (DVM), or Veterinariae Medicinae Doctoris (VMD) for graduates of the University of Pennsylvania School of Veterinary Medicine (AVMA, 2018b). Veterinary school seniors or graduates must pass the North American Veterinary Licensing Examination (NAVLE) to be considered a licensed veterinarian. Once licensed, a veterinarian can treat any non-human animal, from fish to elephant. Due to this wide range of species, most veterinarians concentrate on a few species such as companion animal (dogs and cats), farm animal (most farm animals including bovine but excluding horses), equine, zoo animal, or exotics (birds, fish, reptiles, and small mammals).

After graduation, passing the NAVLE, and being accepted to licensure in the state that the candidate requested, one can then perform in the role of licensed veterinarian and are typically referred to as a general practitioner (GP) (AVMA, 2018b). Some graduates or general practitioners pursue additional studies by applying for internships or residencies at CVMs or private medical facilities in order to become board certified specialists. The AVMA currently recognizes 41 distinct specialty areas of veterinary medicine that are grouped into 22 specialty organizations. These organizations are based upon subject area which are separated by anatomic system (e.g., cardiology, neurology, ophthalmology); disease, diagnosis, or treatment process (e.g., oncology, surgery, radiology); or species (e.g., equine, zoo animal, avian) (AVMA, 2018a). Each specialty organization establishes sets of requirements that must be completed in order to become board-certified in that area of specialization. Typically, these requirements include a

yearlong internship in the subject area followed by a 2- to 3-year residency training program. During residency, the veterinarian must sit for an examination in their subject area. Some board certifications also have a research publication requirement. After passing all the specialty organization's requirements, the veterinarian is then known as a "diplomate" in the specific specialty. For example, Diplomate in the American College of Veterinary Surgeons (DACVS) is the title for a veterinarian who has met the requirements for the board certification of surgery. Frequently, diplomates pursue a career within their specialty designation, while some return to the scholastic venue and teach their specialty. Many of the job requirements for tenure-track educator positions within the CVMs include a specialty designation or other doctoral degree within that specialty. There are a few practitioners who pursue a career outside of a CVM, as well as teach at a CVM, but this is uncommon due to the intensity of both job requirements.

Historically, prior to the 1900s, men dominated veterinary medicine (Katić, 2012). Many parents did not want their daughters studying veterinary medicine because it was not socially acceptable. One societal objection was the belief that women were likely to leave the profession after they started a family, thus "wasting a space" on a woman when a man could have learned a career and supported his family (Rubin, 2010). Another objection was that women were not physically capable to perform the work necessary to handle animals (Larsen, 1997).

If their families did support the female student, CVMs would not officially register them as students although many were registered by mistake when the female names were indistinguishable from male names (Katić, 2012). The facilities at the colleges were an issue as they did not have toilets or dressing rooms for female students.

According to McPheron (2007) and Katić, (2012), women were met with ridicule from their male classmates, professors, and administrators of the colleges. Katić (2012) reports that one professor suggested that veterinary studies were not for women since they would not get a job when they graduate unless they work in a laboratory. At one veterinary college female students had to leave the lecture hall every time a mare was mounted by a stallion. In Mexico, male students tried to scare off female peers with a tamed puma that was placed before the administration building so the female students would not enter. Despite challenges or traditions in veterinary medicine, Dr. Mignon Nicholson became the first female in the United States to graduate as a qualified veterinarian in 1903 (Larsen, 1997; O'Brien, 2015).

The 1930s and early 1940s were more favorable to women than the World War II and postwar eras (Smith, 2013). For example, seven women graduated from Cornell's veterinary college in 1940, however, by the 1950s a quota was set at two women per class. Title IX of the Education Amendments of 1972, (United States Department of Justice, 2012), banned organizations receiving federal financial assistance from discriminating based on gender in educational programs and activities. Since the passage of this legislation, the number of women receiving degrees has increased, including those enrolled in veterinary medicine. According to the U.S. Department of Justice (2012), in 1970 only 8% of women (versus 14% of men) had a college degree compared to 2009 where 28% of women (versus 30% of men) had a college degree.

In veterinary medicine in the early 1980s, there was parity in the student gender ratio (Smith, 2013) and as of the 2016-2017 scholastic year, women made up 80.5% of the veterinary student body (AAVMC, 2017). As more women entered and were

successful in veterinary medicine (school and practice), societal attitudes changed accordingly (Rubin, 2010). According to the American Veterinary Medical Association (AVMA), in 1971, women constituted 8% of practicing veterinarians (1999). Practicing women veterinarians increased 288% throughout the 1980s, and by 2012, women represented 52.1% of practicing veterinarians (AVMA, 2012). In 2016, the AVMA reported that 59% of veterinarians are women.

Although the number of women veterinarians has risen to equitable levels, there is not an equivalent rate of women represented in leadership positions within the industry. Specifically, women are underrepresented in privately owned practices and as administrators in the academy. In 2017, the AVMA House of Delegates was 31% female, however only two of the 15 (13%) voting members of the AVMA Executive Board were women (AVMA, 2017a). One of the largest veterinary practice corporations has five executive officers, all of which are men (VCAAntech, 2018). Within veterinary pharmaceutical and nutrition industries, the gender disparity results are similar. At one pharmaceutical company one of 11 executive officers are women. Similarly, at a large nutrition company, board member representation is limited with only two of 12 board members being female. These examples demonstrate that although women represent over half of the veterinarians in the United States, leadership positions are not representative of the number of women in the field.

Problem Statement

It is not uncommon that some professions have a high percentage of women in the general work population but low representation in positions of leadership (Heinz, Nelson, Sandefur, & Laumann, 2005; Hull & Nelson, 2000; Marschke, Raursen, Nielsen, &

Rankin, 2017; Morahan, Rosen, Richman, & Gleason, 2011; National Association of Women Lawyers, 2017; Sanchez & Thornton, 2010). Morahan et al. (2011) affirm that scientists, physicians who treat humans, and dentists in academic health centers do not have a proportional rate of females entering the professional workforce to women in leadership roles within that profession. Similarly, women educators also do not hold an equivalent share of leadership roles, either principalships or superintendencies in K-12 education (Sanchez & Thornton, 2010).

A further example is in the legal industry. The National Association of Women Lawyers (NAWL) reported that females represented 60% of attorneys in the United States but are only 19% of the equity partners (2017). The likelihood that women will become equity partners has remained unchanged over the past 10 years (NAWL, 2017) and the probability of promotion to partner is higher for men than it is for women (Heinz, Nelson, Sandefur, & Laumann, 2005; Hull & Nelson, 2000). NAWL also reported that although women and men are hired at the associate level at near equal numbers, women maintain the minority in both non-equity and equity partnerships (2017).

Leadership positions in academe includes academic administrators as well as non-academic positions such as deans of student affairs, enrollment directors, and human resources directors. Academic positions such as tenured or tenure-track professors are also considered leadership positions as these individuals work to directly advance the institution's mission of teaching and learning (Kezar, Lester, Carducci, Gallant, & McGavin, 2007). Their leadership skills aid in advances to knowledge, innovation in teaching, and alteration to campus policies and procedures.

Many studies have identified the lack of female representation within higher education leadership roles (Marschke et al., 2017; Perna, 2005; Tessens, White, & Web, 2011). Academic human medicine (Carapinha, McCracken, Warner, Hill, & Reede, 2017), social sciences (Morrison, Rudd, & Nerad, 2011), and science and engineering (Blackburn, 2017; Long, 2001) are just a few specific academic departments that have demonstrated the gender disparity phenomenon within the academy.

Veterinary medicine is another industry that demonstrates gender disparity between enrollment and leadership in the CVMs. During the 2016-2017 academic year, the Association of American Veterinary Medical Colleges (AAVMC) reported that 80.5% of students enrolled in veterinary schools in the United States were women. While that percentage is extremely high, the proportionate growth of female leaders within veterinary medicine was low in comparison to enrollment rates. Females make up 36.4% of tenured or tenure-track female veterinary professors (AAVMC, 2017) while six of the 30 veterinary schools in the United States have women deans (see Appendix A). This data shows that across veterinary medicine, women are underrepresented in leadership roles despite being the majority of enrolled students.

The theory of organizational culture can provide clarity to the existence of the gender disparity phenomena in higher education. Organizational culture describes a system of shared understanding of organizational members that determine their actions as an entity (Mitrović, Grubić-Nešić, Milisavljević, Melović, & Babinková, 2014). Every organization has values, rituals, and practices that develop over time (Smircich, 1983), helping to define employee perceptions and actions (Shadur, Kienzle, & Rodwell, 1999).

There is much evidence to suggest that leadership behavior and personality can be a significant source of influence on organizational culture due to their responsibility and authority (Peterson, Smith, Matorana, & Owens, 2003; Tsui, Zhang, Wang, Xin, & Wu, 2006). O'Reilly, Caldwell, Chatman, and Doerr's (2014) research suggested that the personality of a top leader can shape organizational culture.

One type of organizational culture is the concept of a gendered organization and it was first introduced by Acker (1990). The researcher highlighted the advantages that the masculine norm brings to power and hierarchical organizational structure. She stated that the gendered way of doing things are imbedded in the structural and ideological organizational aspects making a job masculine or feminine. O'Neil, Hopkins, and Bilimoria (2008) and Ayman and Korbik (2010) have also remarked that assumptions about leaders and the contributions to leadership are typically male-normed. The concept of a masculine or feminine job does not necessarily match the gender of the worker (Acker, 1990).

Patriarchal systems have influenced access and equity in the workplace around the world (Hofstede, Hofstede, & Minkov, 2010). Organizations often recognize achievement, build incentives, and decide promotions using definitions of worth that reflect a male-gendered leadership culture (Helgesen & Johnson, 2010). Within the organization, this structure influences the behaviors, experiences, and beliefs of the individuals, influencing their expectation and evaluation of leadership (Longman, Daniels, Bray, & Liddell, 2018).

If a workplace devalues women's contributions, they can threaten the identity of their female workers (Derks, Van Laar, Ellemers, & de Groot, 2011). Women can

respond to this by either joining together collectively to achieve goals or by going alone to improve their standing individually. One can pursue personal and collective goals at the same time, but a group response may endanger an individual outcome (Ellemers & Van Laar, 2010). The reverse may also occur where an individual response may minimize chances for group advancement. Although this is an effective individual tactic, this strategy in turn solidifies the masculinity of the professions and reproduces aspects of the culture that undervalues femininity and women (Derks et al., 2011; Miller, 2004; Rhoton, 2011). The continued masculine organizational culture positions itself as a barrier to women in leadership.

The organizational culture of higher education has been examined from many different aspects including its impact on trust (Tierney & Sabharwal, 2017), knowledge sharing (Arekkuzhiyil, 2016), and diversity (Wolfe & Dilworth, 2015). Within science, technology, engineering, and math (STEM) higher education, organizational culture has been studied in a variety of ways. These include women entering male-dominated majors as well as the organizational culture's impact on historically underrepresented students (Cech & Waidzunas, 2011; Reid & Radhakrishnan, 2003). Kezar (2014) notes that higher education operates on the assumption of a patriarchal workplace culture requiring the women to conform to the male-norm of leadership in a hierarchical, top-down structure.

The gender imbalance in leadership roles within CVM administration impacts the veterinary industry as a whole due to the lack of representation of women in leadership and the lack of diversity. Diversity refers to the differences in the conformation of a group of people (Harrison & Klein, 2007) and can refer to many attributes including

gender, race, nationality, and educational level, and leadership style. Research has shown that the presence of diverse perspectives promotes new ideas for innovation, improvements to systems, and cooperation (Aronson, 2002; Chisholm-Burns, 2008). The benefit of diversity can potentially create opportunities for the appreciation of a variety of cultures, lifestyles, professional experiences, and intellectual abilities (Aronson, 2002; Chisholm-Burns, 2008).

Gender is just one aspect of diversity. The effect of and societal cost of the lack of gender diversity has been studied in various industries. On corporate boards, Simpson, Carter, and D'Souza (2010) conclude the potential to find quality board members increases when women are included. They also suggest that women provide a unique point of view that results in better decisions and increased financial performance. McInerney-Lacombe, Bilimoria, and Salipante (2008) state that group dynamics of communication, interpersonal interactions, and decision-making is altered when women are included on boards leading to more creative, innovative, and nontraditional decisions creating better board performance. Lau and Murnighan (1998) suggested that more diverse opinions are generated with women on boards. Simpson et al. (2010) posited that qualified women deserve the right to serve on boards and the sexism against women serving on boards is a social justice issue.

Sexism occurs when one gender is oppressed by another gender (Schwartz & Lindley, 2009). There are many immediate and long-term negative consequences that originate from sexism including inequality, objectification, victimization, and discrimination. Sexism also leads to gender harassment which, according to Swin, Hyers, Cohen, and Ferguson (2001), is composed of three types of situations namely, sexually

objectifying a person, traditional gender-role prejudice and stereotyping, and demeaning or derogatory comments. Cho (2016) saw gender equality as a societal need and noted that the positive effect of gender equality stimulates trust by reducing social distances between people. Closing social gaps in society leads to the fair application of rules, so risk for unfairness is diminished. When people feel that society is fair, they are more likely to trust and cooperate, advancing the society.

A woman's diminished potential for facilitating change is another cost to society when discussing gender inequality (Rosener, 1990; Tannen, 1995). Although gender and leadership were not highly examined prior to the 1970s, increases of women in leadership positions and in academia have increased the scholarly interest in these topics and their relationship (Hoyt & Simon, 2016). Extensive research has been conducted evaluating the gender differences in leadership styles (Eagly, Johannesen-Schmit, & van Engen, 2003; Eagly, Johnson, & Appelbaum, 1990; Tannen, 1995; van Engen & Willemsen, 2004). Initial questions focused on whether women could lead at all. Over time these research questions have evolved into examining how and if men and women lead differently and if one gender is more effective at leading than the other. Historically, individuals' perceptions of men and characteristics of leadership were similar, and perceptions of women and characteristics of leadership were markedly different (Schein, 1973; Schein & Mueller, 1992, Schein, Mueller, Lituchy, & Liu, 1996). Women are judged against male traits and norms (Chliwniak, 1997; Monroehurst, 1997), although, when women become prototypical leaders as defined by male traits they are still seen as less legitimate than their male counterparts (Vial, Napier, & Brescoll, 2016).

Rosener (1990) was one of the first to link gender with a difference in leadership style. Rosener described women as using a transformational leadership style to motivate followers to move from self-interest to group interest through broader goals. This was contrasted with men leading from a transactional leadership style that focused on position-based power using rewards and penalties. Tannen's (1995) research was consistent with Rosener but extended the concept by adding that the leadership behaviors were a product of developmental socialization. Working women centered on relationships and collaboration while men centered on power and their ability and knowledge. Further research suggests that women who combine inspirational motivation and individualized attention may have increased leadership success (Vinkenburg, van Engen, Eagly, & Johannesen-Schmidt, 2011).

Research has shown that leaders from groups that have not historically had access to leadership positions have a leadership advantage. Dunn, Gerlach, and Hyle (2014) saw that the underrepresentation of women in senior leadership roles in academia as a waste of administrative talent. They advanced the notion that women have a great talent for being transformative leaders due to their outsider nature. Since they were not immersed in the male way of leadership thinking, Dunn et al. (2014) took the position that women create new ways of leading. According to Hong and Page (2004) and Page (2011), due to multiple perspectives and ideas on ways to solve problems, groups that bring individuals together from a variety of identities may outperform more homogeneous groups and therefore leaders from an outsider group could bring in new ways of thinking.

Organizational culture and organizational climate address the psychosocial organizational environment. Both concepts place emphasis on the shared experience of

individuals and the role of meaning (Ehrhart, Schneider, & Macey, 2014). Although these concepts are similar, they differ in important ways. While organizational culture includes the beliefs, values, and assumptions that provide identity and set behavior standards, organizational climate describes the way individuals perceive the relationships that establish the organizational culture in the present moment (Stolp & Smith, 1995).

Organizational climate has also been researched in many ways. For example, service climate research has shown a relation to customer satisfaction, financial outcomes, and customer loyalty (Hong, Liao, Hu, & Jiang, 2013; Liao & Chuang, 2004; Schneider, Ehrhart, Mayer, Saltz, & Niles-Jolly, 2005; Schneider, Macey, Lee, & Young, 2009; Schneider, White, & Paul, 1998). Within higher education, organizational climate has also been examined in many areas such as student's development of creativity (Sokol, Gozdek, Figurska, & Blaskova, 2015), entrepreneurship (Bergmann, Geissler, Hundt, & Grave, 2018), and student achievement (Hoy, Hannum, Tschannen-Moran, 1998). Higher education's organizational climate's effect on gender equity has also been examined in Hall and Sandler's (1982) seminal work, *The Classroom Climate: A Chilly One for Women?* The authors examined how small, everyday behaviors within higher education institutions created a climate that undermines females' learning, career aspirations, and confidence. Although this study is now four decades old, gender equity issues, due to higher education's climate, continue to exist as shown by Dresden, Dresden, and Ridge's (2017) recent study examining women's experience in male-dominated majors.

Although both concepts can provide deep insights into an organization, for the purposes of this study, organizational culture, not organizational climate, was examined.

Organizational culture can influence climate through the structures, policies, and procedures put into place (Ostroff, Kinicki, & Muhammad, 2012). As the gender disparity phenomenon in the leadership of CVMs has not been examined before, it is important to examine the organizational culture affecting the institutions for further understanding as to whether this is a systemic issue with deeper roots into the culture, or more specific actions that create the climate at the institution.

Theoretical Rationale

Schein's model of organizational culture is used to guide this investigation examining the academic culture at CVMs. Building on the concepts of "group norms" and "climate" (Lewin, Lippitt, & White, 1939), Edgar Schein introduced his organizational culture model in 1980 with the publication of his seminal work, *Organizational Culture and Leadership*. Schein observed that culture is dynamic and is formed over a period of time (Schein, 2017). He defined it as the shared learning that a group accumulates as it solves problems and adapts to the external environment. When problems are successfully solved, the actions of the group are considered valid and then taught to new members as the correct way to think, perceive, feel, and behave when encountering those problems. The accumulated learning creates a system of beliefs and behavioral norms that are taken for granted and members of the group become unaware of their presence.

Schein's concept of organizational culture is a three-level theoretical model where the levels progress from most visible to least visible (Schein, 2017). The first level, artifacts and symbols, is the most apparent level of the culture and consists of the physical and social environment of the organization. Physical artifacts include

architecture, physical space, dress code, technology use, organizational charts, and office design. Social artifacts include language, slogans, and rituals. This level of culture is easy to observe but can be difficult to interpret and it can be dangerous and inaccurate to infer deeper assumptions from artifacts alone due to the observer's cultural background.

Espoused values are the second level of the organizational culture model (Schein, 2017). These are less visible than artifacts and provide the meanings that patterns of behaviors and artifacts create. If you want to understand why a group has specific artifacts and you ask the group, the answer will be their espoused values. A group's standards, values, rules of conduct, objectives, aspirations, and philosophies make up espoused values. It is how members represent the organization not only to themselves but to others. The moral or ethical rules are clearly stated because they serve as a normative function of how to behave for current members of the group as well as new members joining the organization. Sometimes espoused values reflect the desired but not the observed behavior of the group. Therefore, when analyzing espoused values, one must discriminate between what is part of the philosophy of the organization and what are rationalizations. This incongruency leads to a lack of full understanding of the organizational culture. As such, basic underlying assumptions must be examined.

The third and last level of Schein's organizational culture model is basic underlying assumptions (Schein, 2017). These are unconscious, unmeasurable, taken-for-granted beliefs and values that determine behavior, perception, thought, and feeling. They are not written down or discussed but are very powerful in an organization. One example is knowing the correct way for people to relate to one another, to distribute

power, and to resolve conflicts. Assumptions about gender, race, and sexuality are also part of this level.

By utilizing Schein's organizational culture model, the first level, artifacts and symbols, and the tangible aspects of the second level, espoused values, were examined for cultural factors that may affect women advancing into and through leadership roles within the colleges of veterinary medicine from the perspective of veterinary academia leadership.

Statement of Purpose

In this quantitative study, a survey was distributed to approximately 1,100 women veterinarians who are employed at a CVMs in the United States for the purpose of exploring the culture present in veterinary medicine academia from the perspective of the female faculty. Three aspects of organizational culture were examined, namely freedom from gender bias, support for work-life balance, and equal access to opportunities.

Research Questions

The research questions that guided this dissertation study were designed to analyze cultural factors that may affect women advancing into and through leadership roles within the colleges of veterinary medicine.

1. What extent do women faculty at CVMs feel that gender biases exist within their CVM?
2. What extent do women faculty at CVMs feel encouraged to maintain a work-life balance?
3. What extent do women faculty at CVMs have equal access to the resources that contribute to career success?

Potential Significance of the Study

This study adds to the literature examining the gender disparity phenomenon within higher education leadership roles. Currently, there is a lack of empirical evidence supporting the understanding of why the leadership of CVMs is not reflective of the student body. The lack of female representation poses a social justice issue and as such, this research will assist in further understanding the culture within CVMs that create barriers to women's advancement into leadership roles. Understanding these barriers could lead to change by opening opportunities for women to advance within their chosen career fields.

There is also growing evidence, particularly in STEM fields, that female students taught by female teachers perform substantially better academically than female students with male teachers (Lim & Meer, 2017; Lockwood, 2006; Marx & Roman, 2002; Nixon & Robinson, 1999; Young, Rudman, Buettner, & Mclean, 2013). Understanding and mitigating barriers to female professor leadership advancement within CVMs can also positively impact the large number of female veterinary students academically.

Also, further understanding of this gender disparity phenomenon could help identify paths to increase diversity of thought and leadership styles as well as create inclusivity with veterinary medicine academia. Other higher educational institutions can extrapolate the data and apply the research to their institutions to expand the impact of this study.

Definitions of Terms

For the purposes of this study the following term is defined:

Veterinary Academia Leadership – An individual who has the role of faculty, department head, assistant dean, or dean positions within the veterinary academe.

Chapter Summary

Chapter 1 provided historical perspective of the profession and demographics of veterinary medicine and colleges of veterinary medicine. It also presented background information regarding gender disparity in leadership in higher education as well as the importance of gender diversity in leadership roles. Schein's organizational culture model was described and will be the theoretical lens for this research. The intent of this study is to add to the existing literature examining the gender disparity phenomenon within higher education leadership roles as well as create further understanding of why the leadership of CVMs is not reflective of the student body.

A review of the literature and concepts of the "glass ceiling" and "leaky pipeline," as well as challenges leading to these concepts will be presented in Chapter 2. The research design, methodology, and analysis will be covered in Chapter 3, while Chapter 4 will discuss the study's findings. Chapter 5 will contain discussion and interpretation of the findings as well as recommendations for further research, practice, and policy in Chapter 5.

Chapter 2: Review of the Literature

Introduction and Purpose

The high percentage of women as students of veterinary medicine but a low representation in positions of academic leadership in colleges of veterinary medicine (AAVMC, 2017) is a phenomenon seen in many professions such as physicians who treat humans, dentists, and scientists (Morahan et al., 2011). A literature review examining gender disparity in higher education leadership leads to the categorization of the following elements: the glass ceiling effect, the leaky pipeline theory, and challenges leading to the glass ceiling and leaky pipeline. Organizational culture in relation to these three elements will also be examined. All these factors help further the understanding of this phenomena and offer support for the research study.

The Glass Ceiling Effect

The term “glass ceiling” first appeared in an article from the Wall Street Journal (Hymowitz & Schellhardt, 1986). The metaphor suggests that although women can enter managerial hierarchies, they will, at some point, reach an invisible barrier that will block further advancing progress in their career (Baxter & Wright, 2000). The idea of the glass ceiling implies that barriers to promotion intensify as women move up the managerial hierarchical ladder. The implication is that during hierarchical upward movement the barriers to promotion become increasingly severe for women as compared to men. This phenomenon has also been described as the “sticky floor” (Tesch, Wood, Helwing, & Nattinger, 1995), and the “glass door” (Cohen, Broschak, & Haveman, 1998).

A lot of attention to the glass ceiling concept has occurred in popular media, governmental reports (United States, 1995), and scholarly research. The attention to this phenomenon has generated initiatives into examining the inequity of hiring practices in organizations (Jackson & O'Callaghan, 2008). While data suggests advancements for women in the U.S. workforce, these trends are not expressed in faculty and administrative positions in academia (Burbridge, 1994; Johnsrud & Heck, 1994).

The Leaky Pipeline Theory

In academia, women may be more likely to leave before they encounter a ceiling. This phenomenon was noticed and “the leaky pipeline” concept was first coined in 1999 by a group of women academicians at the Massachusetts Institute of Technology to describe the experiences of women faculty. Referring to careers in academia as “the pipeline” they stated that women “leak” from this “pipeline” at every stage of their careers. The leaky pipeline was demonstrated in Monroe and Chiu’s (2010) research of gender and professorships in higher education. Their review of aggregate statistics from the American Association of University Professors suggests that a glass ceiling is not a barrier at the top of the pipeline but exists as filters throughout the pipeline creating the “leaks” of women leaving the career path. Women participate at deteriorating levels as ranks rise within higher education.

A report from the National Research Council (2010) has further strengthened the leaky pipeline concept by confirming that women are underrepresented in many scientific disciplines at academic institutions across the country, particularly so, in higher faculty positions. It also stated that women were more likely to drop out before attaining tenure if they did have a faculty position. Further data from the National Institutes of Health

(2008) indicates that women compose a larger proportion of the predoctoral fellowships (63%) than postdoctoral fellowships and faculty grants (25%).

Gasser and Shaffer's (2014) grounded theory research created a model for the career process of women in academia. The model includes the pre-academic career of the graduate student through entering academic careers followed by leaving academia after a full career. Throughout this model there are many places where a woman may "leak" out of the pipeline. Based on Gasser and Shaffer's review of the literature and subsequent model, the authors have made several predictions at the various points within the model. One predictor of entering the pipeline include having career aspirations and expectations that are compatible with an academic career. Another predictor includes having gender role views that do not delegate male and females to specific life and career roles. Moving through the pipeline predictors include mentor support, personal power, and self-promoting behavior. Components of the "glass ceiling," feeling stuck in positions without a chance of promotion, having restricted access to resources, and feeling dissatisfied with their salaries and level of recognition, are all predictors to exiting the pipeline according to Gasser and Shaffer.

There are also many places when women can "leak" out of the pipeline in veterinary academia. Unlike traditional higher education, for an individual to be considered for advanced leadership positions within the veterinary college, one must possess not only a Doctor of Veterinary Medicine but a board-certified specialty and/or a PhD in a related veterinary field (The Ohio State University, 2018). They also must have distinguished record in research or scholarship that would qualify for rank of professor in an academic department in the college. The rigor of achieving these accomplishments

added to the existence of the additional challenges for women, as noted in Gasser and Shaffer's (2014) research, providing many opportunities for women to disengage from the leadership pathway.

Challenges Leading to the Glass Ceiling and Leaky Pipeline

Many studies have attempted to identify what barriers exist that lead to the "glass ceiling" and the "leaky pipeline." Certain barriers are engrained in societal cultures and economies while other barriers are characteristic of an industry or organizational culture (Bain & Cummings, 2000). Some of the barriers noted include gender stereotyping and bias, lack of support for work-life balance, lack of equal access for opportunities such as networking and mentoring, and lack of supervisor support (Kalaitzi, Czabanowska, Fowler-Davis, & Brand, 2017; Westring et al., 2012).

Gender stereotyping and bias. Stereotypes are generalizations about a group of people that are applied to individuals merely because they belong to that group (Heilman, 2012). Gender can be described as an established system of social practices for organizing males and females as different in socially meaningful ways (Ridgeway & Smith-Lovin, 1999) and can be applied to stereotypes in both descriptive and prescriptive ways (Brugess & Borgida, 1999; Eagly & Karau, 2002; Heilman, 2001). Descriptive gender stereotypes label what women and men are like while prescriptive gender stereotypes label what women and men should be like (Heilman, 2012). Both types of stereotyping are considered gender harassment (Swim, Hyers, Cohen, & Ferguson, 2001) as well as sexism in action (Hall, Christerson, & Cunningham, 2010).

The utilization of both forms of gender stereotyping can negatively affect a woman's career progress (Heilman, 2012). By promoting negative expectations about a

woman's performance, descriptive gender stereotyping creates a perceived incompatibility between the woman's attributes and the attributes necessary to succeed in a traditionally male role. Descriptive stereotypes about women persist in characterizing women as kind, dependent, and nurturing or having communal traits while men are agentic or being logical, independent, and strong (Carnes, Bartels, Kaatz, & Kolehmainen, 2015). This gender stereotype has disadvantaged women in agentic career paths like science, math, and leadership as their presumed communal traits will be less applicable to the job duties and therefore women will be less competent and prone to failure.

Prescriptive gender stereotypes standardize the behavior expectations of men and women which results in devaluing women who disrupt gender norms (Heilman, 2012). When women assert themselves to employ influence outside of traditionally female domains, there are reactions that impose negative penalties on them for violating the expected order (Carnes, Bartels, et al., 2015; Heilman, 2012; Ridgeway, 2001). A women's success in an area historically reserved for men can have social penalties causing them to be unpopular, shunned, and negatively regarded (Heilman, Wallen, Fuchs, & Tamkins, 2004). Women in these roles have been identified as cold (Wiley & Eskilson, 1985) and/or having interpersonal problems (Heilman, Block, & Martell, 1995) as compared to their male counterparts. They may be described as "bossy," or "domineering" (Carnes, Bartels, et al., 2015; Heilman, 2012; Ridgeway, 2001). These reactions, in turn, reduce their ability to gain support with their directives.

Gender stereotyping directly supports gender bias (Heilman, 2012). There are two types of gender bias, overt and implicit, noted by Carnes, Bartels, Kaatz, and

Kolehmainen (2015). Overt gender bias is the act of treating someone based upon a preconceived notion of their gender characteristics. For example, believing that women are less committed to their careers than men. Explicit gender bias in academia has decreased in the US since the passage of Title IX.

Implicit gender bias can be elusive because usually the individual is unaware that they are holding the bias (Carnes, Bartels, et al., 2015). In fact, implicit bias may conflict with one's personal values even while it is affecting opinions and actions. Presumptions about disparities in competence can be tied to gender differences.

Heilman, Wallen, Fuchs, and Tamkins' (2004) research testing reactions in men and women working on a male gender-typed job supported the concepts of both descriptive and prescriptive gender stereotyping. Their quasi-experimental study involved students of both genders evaluating both male and female candidates for employment in a leadership position at a company that manufactured airplane components. The findings demonstrated that participants viewed a woman performing a male-gendered job as less competent and less likable when there was ambiguity about how successfully the woman performed the job.

Carnes, Bartels, et al.'s (2015) study of how gender influenced medical residents' experience leading cardiopulmonary resuscitation (CPR) events is another example of gender stereotyping and gender bias. The researchers interviewed the residents and found that both male and female residents described the ideal CPR leader as being logical, strong, and independent (agentic). Several female residents described that being the CPR leader was stressful due to a fear of defying female gender norms. Many female residents had a fear of sounding "bossy" though none of the male residents interviewed

felt this way. Heilman (2012), Ridgeway (2001), and Carnes, Bartels, et al. (2015) argue that these legitimacy reactions create many sequential devaluations that slows or can even stop a woman's advancement and their ability to achieve leadership positions.

Fritsch (2015) also uncovered gender discrimination as a theme while interviewing female academics in leader positions. The purpose of Fritsch's study was to examine explanations for why the statistical proportion of female academics and managers in academia was increasing slowly. Fritsch interviewed 12 women who had successfully completed all the necessary academic qualifications to become professors as well as occupying a top leadership position within their institution. Interviews of these successful women in universities described scenarios of informal communication where women, more frequently than men, were evaluated on a personal level (appearance and behavior) instead of on their professional competencies.

Carr, Szalacha, Barnett, Caswell, and Inui (2003) conducted interviews of 18 female medical academics asking them to rank-order the importance of gender discrimination on the hinderance of their career relative to other factors affecting academic careers. Their data showed that 40% of the participants identified gender discrimination as the primary factor in hindering their career advancement. Another 35% of the participants identified gender discrimination as the secondary factor in hindering their career advancement.

Wright et al. (2003) also note gender discrimination as a barrier to advancement within the human medical field. Their quantitative survey, answered by 198 medical school faculty members, found that there was no difference in self-assessed leadership abilities or aspirations between genders, but women were significantly less likely to be

asked to serve in leadership roles. Over 25% of the men had been asked to serve in leadership roles versus 6% of women. Leadership traits have historically been defined as masculine creating a stereotype around what a leader should look like (Northouse, 2016). Due to this preconceived notion, Wright et al. (2003) attribute this variance to the lack of male leaders' capacity to recognize leadership abilities in women.

Work-life balance. The compatibility of work and family issues on women has been extensively studied (Ceci & Williams, 2011; Cochran et al., 2013; Fritch, 2015; Morrison, Rudd, & Nerad, 2011; Springer, Parker, & Leviten-Reid, 2009; Wolfinger, Mason, & Goulden, 2008). Fritch's (2015) study, interviewing 12 successful women academics, noted that when women had spouses/partners and children, women held more responsibilities for the home (such as childrearing and housekeeping) than men, making work-life balance more difficult for women. Societies tend to adhere to a sexual division of labor, where different tasks are assigned to men and women (Padavic & Reskin, 2002). These labels influence the job assignments as well as employers' and workers' expectation of what kind of work they should be performing. American workplace historically has been shaped around a male career model established in the 19th century when men worked out of the home and women stayed home attending to the needs of children and housework.

A demonstration of the gender imbalance on work-life balance was shown by Wolfinger et al.'s (2008) investigation. Their quantitative study reviewed 14 years' worth of data collected regarding gender and family formation on academic employment after receiving a PhD. There were three independent variables, each representing a separate career stage between receipt of PhD and full professorship namely, PhD to tenure track,

tenure track to tenure, and tenure to full professorship. The research revealed that women were less likely to obtain tenure-track employment. Women with a child under six were 22% less likely to obtain a tenure-track position. Also, compared to a married man, a married woman had a 12% lower chance of acquiring an academic job.

Goulden, Mason, and Frasch (2011) also researched the effect of gender and family on academic employment. Their longitudinal study followed the same individuals over the receipt of the PhD and onward through their career and supported Wolfinger et al.'s (2008) analysis. Goulden et al. (2011) found that family formation (marriage and childbirth) accounted for the largest pipeline leaks between Ph.D. receipt and the acquisition of tenure for women in the sciences. Married women with young children were 35% less likely than married men with young children to receive a tenure-track position. Married women with young children were also 27% less likely than married men with young children to become tenured. Their data also showed that single women without young children had the best chances of all women to achieve a tenure-track or tenured position.

Supporting Wolfinger et al.'s (2008) and Goulden et al.'s (2011) research, Morrison et al. (2011) surveyed 3,025 individuals that graduated between 1995 and 1999 in the fields of anthropology, communications, geography, history, political science, or sociology. The researchers questioned the impact of marriage and of having young children on men and women who were on the job pathway to academic leadership. Having young children negatively impacted a woman's chance of moving onto the tenure track while there was no effect on a man's chances.

As previously mentioned, tenure track is one way that individuals can advance toward leadership roles within higher education. Once a woman has navigated the challenges of moving onto the tenure track more obstacles present themselves. Deutsch and Yao (2014) questioned 45 men and women tenure-track faculty who had left employment at a women's college in the past 20 years. The attrition rate for women was significantly higher than for men. A woman's number one reason for leaving their position was related to work-family conflict. Also, it was noted that the women surveyed were more dissatisfied than their male counterparts on the structural work-family support given to them and the organizational culture of the educational institution. Some of these supports requested included pausing the tenure clock when a tenure-track faculty takes time for a family situation, unpaid leave to care for dependents beyond the federally mandated Family Medical Leave Act, and paid time off for new biological and adoptive mothers and fathers beyond state disability support.

Equal access to opportunities. Women in academia have been denied access to informal networks within the university organizational structure (Gardiner, Tiggemann, Kearns, & Marshall, 2007). While formal networks are defined relationships between workplace employees interacting to perform particular tasks, informal networks are more flexible connections among workplace individuals where the content discussed may be work-related, social, or a combination of both (Ibarra, 1993). These networks provide information that aids in career advancement such as research grant awareness, procedures, and writing support (Gardiner et al., 2007).

In a meta-analysis of 40 published articles, O'Brien, Biga, Kessler, and Allen (2010) evaluated whether experiences are different for protégés based on their gender and

their mentor's gender. O'Brien et al. (2010) found that when mentors were available to both men and women, they received similar amounts of career support. The authors also assessed the mentor's gender and found that males report serving as a mentor more often than females do, but female mentors provided more psychosocial support than their male counterparts.

Fritsch's (2015) interviews of 12 successful women in universities found that an impeding factor to a female academics' success were the existence of male-dominated social networks that provided opportunities, knowledge transfer, and mentoring to their members. As women were not openly welcome into these groups, they lost out on the opportunities afforded to the men.

Cohen et al. (1998) found that within the human surgical academy, 46% of the residents identified a lack of mentoring as a barrier to career advancement. When female academic surgeons did have an opportunity to have a mentor, Seeman et al. (2016) reported that 89% of the mentors were men. Moreover, in their survey of 81 women surgeons in academic settings, 54% of the participants indicated that they wished they had a better mentoring experience. When discussing the specifics of mentoring, many of the women stated that they wished they had more women as mentors to help them navigate the intricacies of their career path as well as provide advice on how to juggle a work-life balance. O'Brien et al.'s (2010) meta-analysis shows that the difference in psychosocial support may provide the assistance that Seeman et al.'s (2016) female participants wished that they had received.

Carapinha et al.'s (2017) research showed that the mentoring aspect of networking has a positive impact on the organizational culture for women. The

researchers conducted an online survey of women academics in 13 medical schools and found a positive association between a perceived positive work culture and whether an individual's mentoring needs were met. The inverse of this was also reported indicating a negative work culture being associated with one's mentoring needs not being met. Having access to informal networks and mentoring can minimize the lack of culture-fit and social and intellectual isolation that an individual would feel within the organization (Gardiner et al., 2007), creating a potential work environment where advancement is equitable.

Impact of Organizational Culture

Schein (2017) defines organizational culture as the shared assumptions learned by a group that is then taught to new members as the right way to perceive, think, and feel. Schein's research indicated that leaders have a large impact in creating the organizational culture of an organization. His work identified six primary embedding mechanisms that are used to help form the shared belief systems creating the organizational culture. These are the ways leaders measure success, react to crises, teach their values, reward performance, and preserve the talent within their organization. Although discussed separately, all six of these mechanisms are used simultaneously to create the organizational culture of an institution.

The first embedding mechanism, and the most powerful tool to communicate what is important to them, is what leaders pay attention to, measure, and control on a regular basis (Schein, 2017). According to Schein, it is important for leaders to focus their attention consistently or their subordinates will use their own experience to attach

importance to behaviors and tasks. This leads to a variety of subcultures moving in directions that the leader may not want.

Schein's (2017) second embedding mechanism is how a leader reacts to critical incidents and organizational crises as these reveal important underlying assumptions. As the definition of danger is a matter of perception, leaders define what is a crisis. Due to the heightened anxiety that comes with crises, these events create an opportunity for intense learning as individuals need to alleviate their anxiety and therefore create ways to make change. When individuals share intense emotional experiences that come with crises and learn how to reduce anxiety, they are more likely to remember and repeat the learned behavior.

How leaders allocate resources is Schein's (2017) third embedding mechanism. A leader's belief about the competence of their organization and the degree to which the organization must be financially self-sufficient, influence their goals and the management processes they choose. These beliefs determine what decisions are made as well as providing limitations on the perception of alternative choices.

The fourth embedding mechanism from Schein's (2017) organizational culture theory is deliberate role modeling, teaching, and coaching. Organizational members listen and pay careful attention to the words and actions of a leader. Individuals will put more belief in actions than words and will therefore emulate the actions of their leader. Communication from leader to organizational member happens in both formal and informal ways with informal messages having a more powerful teaching and coaching outcome.

How leaders allocate rewards and status is Schein's (2017) fifth embedding mechanism. Organizational members learn what the organization values from their experiences with promotions, performance appraisals, and discussions with their superior. Leaders can clearly communicate their own priorities, values, and assumptions by consistently linking rewards and punishment to behaviors.

The last of Schein's embedding mechanisms is how leaders select, promote, and excommunicate members (2017). Adding new members is the subtlest but one of the most powerful ways in which leader values become embedded in the culture. It is subtle because it operates unconsciously as the leader selects individuals that "fit in." Individuals that "fit in" advance within the organization and those that do not are dismissed or leave the organization.

All six of the embedding mechanisms interact and reinforce each other if the leader's own beliefs, values, and assumptions are consistent (Schein, 2017). These embedding mechanisms help create, support, and maintain the culture of an organization. As women advance through their careers, the organizational culture that they are immersed in can provide barriers (Bain & Cummings, 2000) that hinder their career success. Some of these barriers include gender stereotyping and bias, lack of support for work-life balance, and lack of equal access for opportunities such as networking and mentoring (Kalaitzi et al., 2017; Westring et al., 2012).

The institutional culture in higher education tends to reflect a blend of subcultures due to the variety of departments, structural complexities, and divergent communities (Lindholm, 2003). Bergquist and Pawlak (2008) explained the intricacies higher

education institutions by describing six cultures that are present in most academic settings. Successful women must navigate these cultures effectively in order to succeed.

Bergquist and Pawlak (2008) noted that one of their defined cultures, the collegial culture, is aligned with male values and perspectives creating a culture that is challenging for women. For example, there is a misalignment with the current organizational culture of academia which is predicated on the model that one spouse is at home tending to personal demands (Valantine & Sandborg, 2013).

The cultural dynamics of higher education institutions can create challenges for women who aspire to, or advance into leadership (Valantine & Sanborg, 2013). These challenges include wage inequities, policies, and reward structures (Kellerman & Rhode, 2014), bias within stereotypes and organizational practices (Ibarra, Ely, & Kolb, 2013) as well as the need for more targeted mentoring (Keohane, 2014) and female-oriented leadership development programs (Ely, Ibarra, & Kolb, 2011).

Institutional Supports

Some higher educational institutions, specifically in human medical colleges, have attempted to minimize the challenges that are present for female faculty and administrators (Bauman, Howell, & Villablanca, 2015; Devine et al., 2015; Fassiotto et al., 2018). The first institutional support noted in the literature was a gender bias habit-changing intervention conducted by the University of Wisconsin-Madison (Carnes, Devine, et al., 2015). As research has shown that education increasing awareness and providing bias reduction strategies have been found to improve implicit bias (Carnes, Devine, et al., 2015; Devine, Forscher, Austin, & Cox, 2012; Rudman, Ashmore, & Gary, 2001) the University of Wisconsin-Madison offered a 2.5-hour workshop as a gender bias

habit-changing intervention (Carnes, Devine, et al., 2015). Faculty in the departments that attended the workshop demonstrated immediate increases in gender equity-promoting behavioral changes and self-efficacy to promote gender equity in the departments. The improvement was so impactful that hiring rates of women by departments that had received the training increased by 18 percentage points over the non-trained departments (Devine et al. (2017). Before the training, hires in all departments substantially favored men, but after the training, new hires in the trained departments were gender balanced.

Stanford University School of Medicine's work-life improvement program entitled Academic Biomedical Career Customization (ABCC) is the second institutional support noted in the literature (Fassiotto et al., 2018). This program developed a two-pronged approach to reframe the concepts of flexibility within their organizational culture. The first approach involved developing a career-life goal plan in three stages. The first stage had participants completing a self-reflection of work and life goals. Meeting with a coach from the program to identify potential solutions was the second stage. Lastly, the participants engaged with career-life planning discussions with their team leaders or division chiefs who were provided a guide and training on how to balance the goals of the team and the goals of the individual faculty member. Incorporating work-life into career planning can increase awareness for existing work-life policies as well as reducing the stigma associated with their use.

The second prong of the ABCC program involves a time-banking system where otherwise uncompensated or inadequately recognized activities were identified and assigned a credit value (Fassiotto et al., 2018). These credit-earning activities were

logged and could be redeemed for support services at home or at work that were meant to benefit career and personal goals. The act of logging these activities allows the faculty to feel recognized for supporting the team and the institution.

The pilot study indicated that both the career-life goal plan and the time-banking system were a success not only for the individual participants but for the institution (Fassiotto et al., 2018). Individuals had satisfaction increases in their personal wellness, understanding of professional development opportunities, as well as for the institutional support for a culture of flexibility. Overall, their institutional satisfaction increased.

The last institutional support noted in the literature is the University of California Davis School of Medicine establishment of the Women in Medicine and Health Science (WIMHS) program (Bauman et al., 2015). It was established in 2000 to aid in the success of women in all roles within academic human medicine. The multifaceted approach to the career development of women included developing and disseminating initiatives, resources, mentoring, and professional career development programs, recognizing and celebrating women's accomplishments, as well as creating opportunities for networking. For example, there are regularly scheduled networking and socializing activities to introduce new female faculty, introduce female faculty to the school of medicine leadership, as well as to honor and celebrate the women who helped found the school of medicine. There are also internal and external career development programs such as mentorship and leadership clinics as well as sessions on public speaking, salary negotiations, and time management. Since the inception of this program, the number and percentage of female faculty at this school of medicine has steadily increased as has the number of female full professors and department chairs. Although one cannot determine

if the increase in these women is solely based upon the WIMHS program, department chairs cite the program as an important tool in recruitment and retention and new hires cite it as a reason for joining the faculty.

Additional supports, outside of academia, exist for individuals interested in leadership in veterinary medicine. The Association of American Veterinary Medical Colleges (2019) launched their Leadership Academy in 2012 to provide leadership development opportunities for emerging leaders in veterinary academia. Although focused on leadership as a whole, some topics that are being discussed at their 2019 events include self-awareness and implicit bias which are directly related to improving gender bias awareness within the CVMs.

Another support outside of academia is the Women's Veterinary Leadership Development Initiative (WVLDI) (2019). Although not exclusively focused on veterinary academic leadership, this group has driven the discussion of gender disparity in veterinary leadership within the profession by providing presentations at conferences, workshops for female veterinarians, as well as providing female student leadership development opportunities.

Chapter Summary

The review of the empirical literature demonstrates that the “glass ceiling” and “leaky pipeline” concepts provide a framework to describe gender disparity within academia. Gender stereotyping and bias, work-life balance, and equal access to opportunities were established by the literature to affect a woman's ability to achieve career advancement. The literature also indicates that some higher education human

medical institutions have attempted to make changes in the areas of gender bias, work-life balance support, and equality of resource availability.

While there is significant empirical research regarding leadership and gender in higher education, there is little empirical research published in these areas specifically concerning veterinary education. What is published is mostly through trade journals and editorials focusing on practice ownership and gender (Treanor, 2016), veterinary leadership (Bradley, Charles, & Hendricks, 2015), and promoting female leadership (Kenwright, 2015). There are some empirical studies that investigate gender differences in career aspirations of veterinary students (Bristol, 2011; Castro & Armitage-Chan, 2016) as well as a recent empirical study that examined what veterinary leadership looks like in veterinary practice (Oxtoby, 2018). There is a significant gap in the literature examining the role of organizational culture in veterinary medicine and its effect on female leadership advancement, specifically within colleges of veterinary medicine.

Chapter 3 will review the research design and methodology for this study including the research context, participants, and instrument used to answer the research questions posited.

Chapter 3: Research Design Methodology

Introduction

In order to understand why there is a gender disparity phenomenon within the academic leadership of colleges of veterinary medicine in the United States, one must examine the environment and culture that is present. To further understand the cultural factors that may affect women advancing into and through leadership roles within the colleges of veterinary medicine, the following research questions are posited:

1. What extent do women faculty at CVMs feel that gender biases exist within their CVM?
2. What extent do women faculty at CVMs feel encouraged to maintain a work-life balance?
3. What extent do women faculty at CVMs have equal access to the resources that contribute to career success?

A quantitative, non-experimental, descriptive methodology was utilized to answer these research questions. Watson (2015) describes quantitative research as a systematic, deductive investigation of a phenomena using statistical or numerical data. This study consists of a cross-sectional survey utilizing the Culture Conducive to Women's Academic Success (CCWAS) survey tool (Westrig et al., 2012) (Appendix B).

Survey research is a type of quantitative methodology used to help describe particular characteristics of the studied population (Glasow, 2005). Surveys are useful for gathering large amounts of data to describe situations or populations (Hallberg, 2008).

They also can gather demographic data that describe the conformation of the sample (McIntyre, 1999). Additionally, they can extract information about attitudes that may be difficult to measure using observational techniques.

Research Context

To explore the gender disparity phenomenon in CVM academic leadership, the context for this research are the 30 colleges of veterinary medicine located within the United States that are accredited by the American Veterinary Medical Association (AVMA). The AVMA accreditation is based on a number of factors such as mission, facility, resources and facilities, as well as curriculum (AVMA, 2017b). The curriculum must be over a minimum period of four academic years including one academic year of clinical education. The specific curriculum is the purview of the faculty at each CVM but is managed by the CVM as a whole and must be reviewed at least every seven years by a curriculum committee.

Of these 30 colleges of veterinary medicine, six are private while 24 are public. All the public schools are land grant colleges (The National Academies of Sciences, Engineering, and Medicine, 2019). There is one veterinary college at a Historically Black College and University (HBCU) (Tuskegee University, 2019). There are also two Ivy League institutions represented. Approximately 3,000 students graduate from the 30 CVMs every year, making each class size approximately 100 students, and each college holding 400 students at a time (AAVMC, 2017).

Research Participants

The purpose of this research is to investigate the culture of colleges of veterinary medicine from the perspective of veterinary academia leadership. Therefore, a purposive

population sample of women who currently hold a position of faculty, department head, assistant dean, or dean at the colleges was utilized. These women were contacted through email inviting them to participate in the study.

Instruments Used in Data Collection

A survey titled Culture Conducive to Women's Academic Success (CCWAS) was utilized as the data collection tool for this study. The CCWAS was developed by Westring et al. (2012) as part of a National Institutes of Health (NIH) funded study, to evaluate the organizational culture of human academic medicine and to help provide an understanding and assess the supportiveness of the culture for women professors. After reviewing literature, holding focus groups of female assistant professors, and consulting with content experts knowledgeable in academic medicine, women's careers, and organizational psychology, their research showed four culture areas associated with the career success of women in human academic medicine. These areas were access to resources, support of work-life balance, gender bias, and support of department chair/head. Using the findings, they developed and pilot tested a tool with a convenience sample of female assistant professors of human medicine across the United States. Those results allowed Westring et al. to conduct several statistical analyses to explore and test the validity of the tool.

CCWAS is a 46-question survey that has respondents self-report on a 5-point Likert scale in these four broad categories.

1. Extent to which women faculty have equal access to resources that contribute to career success, compared with men.

2. Extent to which women faculty are supported in the efforts to balance work and family.
3. Extent to which women can voice concerns regarding gender bias.
4. Extent to which the unit leader supports important aspects of women's careers.

Using the lens of Schein's organizational culture model, this research focused on artifacts and symbols present in CVMs regarding gender and leadership. As such, the last category, extent to which the unit leader supports important aspects of women's careers, was eliminated from the survey tool allowing the researcher to focus not on individuals' (department head/chair) actions but on the organization as a whole.

At the end of the survey, optional, self-reported demographic participant information was collected. This included gender, marital status, number and age of children, full- or part-time status, and professional track (academic clinician, clinician educator, researcher, tenure). Demographic data was collected to ensure that the individuals being sampled are from the target population being studied (Lee & Schuele, 2010). As independent variables, this data helped inform and describe the study sample as well as allowed for exploration of their effect on the dependent variables. If the survey respondent did not choose to answer the demographic questions, a response of "did not answer" was reported. Race was not collected as demographic category as veterinary medicine continues to be highly Caucasian and as such, any non-Caucasian individuals' confidentiality may be compromised by the limited number of non-Caucasian individuals.

Procedures for Data Collection and Analysis

In the spring of 2019, St. John Fisher College Institutional Research Board (IRB) approved (Appendix C) the research study. At that time, all women who currently held a position of professor, department head, assistant dean, or dean at the colleges at an AVMA accredited CVM located in the United States were contacted via email describing the study and its importance to the veterinary education community (Appendix D). The email contained an Internet link to the survey tool that was created using Qualtrics software. The participants had access to the survey tool for four weeks before it closed, and the data transferred to an Excel document. To maintain anonymity, personal identifying markers were removed and a process for data cleaning and handling survey and item non-responses were established before analysis.

The data was transferred to IBM Statistical Package for the Social Sciences (SPSS) Version 24.0 for statistical data analysis. Descriptive data was used to summarize the data and help answer the three research questions.

The independent variables were the variety of demographic responses while the survey questions describing the three dimensions of organizational culture were the dependent variables. A composite mean score was calculated for each of the three dimensions of organizational culture using the questions assigned to each dimension (Table 3.1).

Table 3.1

Survey Questions Assigned to Dimension of Organizational Culture

Questions	Dimension of Organizational Culture
1 - 19	Access to Resources
20 - 30	Work-Life Balance
31 - 33	Gender Bias

The composite mean score of the three dimensions was also used for the *t*-test analyses. A two-tailed *t*-test was used to determine the statistical significance between an independent variable (marital status or dependent child status) and a dependent variable (access to resources, work-life balance, or gender bias). This test was used because the relationship direction was not known between the independent and dependent variables (Gliner, Morgan, & Leech, 2017). The job title independent variable was multilevel and ordinal in nature therefore, Spearman’s correlation was used to determine the statistical significance between this independent variable and each dependent variable. Both the two-tailed *t*-test and Spearman’s correlation were calculated using IBM SPSS.

Summary

The purpose of this research study was to describe and explore the organizational culture of CVMs in the United States. Utilizing the Culture Conducive to Women’s Academic Success survey tool, a quantitative, descriptive methodology was used to investigate how women, in academic leadership roles within the CVMs, perceive the culture within the CVM where they are employed.

Chapter 4 presents the data analysis and findings of the research questions while Chapter 5 will discuss the interpretation of the findings as well as limitations to the study and recommendations for further research, practice, and policy.

Chapter 4: Results

Research Questions

The purpose of this study was to explore the culture present in veterinary medicine academia. There is no empirical, published literature that has examined the organizational culture at the colleges of veterinary medicine in the United States.

In this quantitative study, a survey was distributed to approximately 1,100 female veterinarians who are employed at a CVMs in the United States, examining three aspects of organizational culture, namely freedom from gender bias, support for work-life balance, and equal access to opportunities.

The research questions guiding this study were designed to analyze cultural factors that may affect women advancing into and through leadership roles within the colleges of veterinary medicine. They were:

1. What extent do women faculty at CVMs feel that gender biases exist within their CVM?
2. What extent do women faculty at CVMs feel encouraged to maintain a work-life balance?
3. What extent do women faculty at CVMs have equal access to the resources that contribute to career success?

Data Analysis and Findings

A quantitative, non-experimental research design using Qualtrics software was used to examine the research questions. The survey, CCWAS, included 33 questions in

three sections describing the organizational culture at CVMs concerning freedom from gender bias, support for work-life balance, and equal access to opportunities. The survey participants were asked to measure their agreement for each question on a 5-point Likert scale. The scale ranged from 1, strongly disagree to 5, strongly agree.

Demographics. An email with a link to the survey in Qualtrics was distributed to 1,112 women who, at the time, held a position of professor, department head, assistant dean, or dean at the colleges at an AVMA accredited CVM located in the United States. The participants had access to the survey tool for four weeks from April 2019 to May 2019. There were five emails that were undeliverable, and one CVM asked to be removed from the study completely, decreasing the total surveys to 1,047. Survey response data was collected from 212 participants for a response rate of 20.25%. After analyzing the responses, 46 responses had missing data and were removed from the study. There were 166 usable survey responses ($n = 166$).

Optional, self-reported demographic participant information was collected at the end of the survey. This included gender, marital status, number and age of children, full- or part-time status, and job title at the time of the survey. All 166 survey respondents gender identified as female. Marital status categories included single (37), married or domestic partnership (114), divorced (8), widowed (1), other (1), and choose not to respond (4). Due to the small number divorced, widowed, other, and choose not to respond, the data was combined and treated as “other.” Married or domestic partnership was the predominate marital status representing 68.7% of the respondent population followed by single (22.3%) and other (9.0%). Table 4.1 displays the summary of the marital status demographics.

Table 4.1

Survey Responses by Marital Status

Respondents (<i>n</i> = 166)	Total	% of Total
Single	37	22.3%
Married or Domestic Partnership	114	68.7%
Other	15	9.0%

Frequency of dependent children is summarized in Table 4.2. The respondents predominately did not have any dependent children, representing 62.6% of the total participants while having one and two children represented 16.3% and 13.9% of the respondent population respectively. Of the total respondents, 5.4% had three or more children while 1.8% of the participants chose not to respond to the demographic question.

Table 4.2

Survey Responses by Number of Dependent Children

Respondents (<i>n</i> = 166)	Total	% of Total
No Dependent Children	104	62.6%
1	27	16.3%
2	23	13.9%
3 or more	9	5.4%
Chose not to respond	3	1.8%

The children's age was distributed relatively evenly between the 59 respondents that indicated they had a single dependent child. The age group of 6-12 years was most represented (25%) while 0-2 (15%) and 3-5 years (15%) was least represented (Table 4.3).

Table 4.3

Survey Responses by Ages of Singular Dependent Children Households

Respondents ($n = 40$)	Total	% of Total
0-2 years of age	6	15.0%
3-5 years of age	6	15.0%
6-12 years of age	10	25.0%
13-18 years of age	7	17.5%
Over 18 years of age	9	22.5%
Chose not to respond	2	5.0%

For respondents that indicated they had multiple dependent children, the ranges were also distributed relatively evenly between the groups (Table 4.4).

Table 4.4

Survey Responses by Age Ranges of Multiple Dependent Children Households

Respondents ($n = 21$)	Total	% of Total
0-2 & 3-5 years of age	3	14.3%
0-2 & 6-12 years of age	3	14.3%
3-5 & 6-12 years of age	5	23.8%
6-12 & 13-18 years of age	3	14.3%
13- 18 & Over 18 years of age	6	28.6%
0-2, 3-5, & 6-12 years of age	1	4.7%

Table 4.5 summarizes the frequency distribution of employment status. A large majority of the respondents had full time job status (96.4%) while only 2.4% were considered part time. Of the total respondent population, 1.2% chose not to respond.

Table 4.5

Survey Responses by Employment Status

Respondents (<i>n</i> = 166)	Total	% of Total
Full Time	160	96.4%
Part Time	4	2.4%
Chose not to respond	2	1.2%

The frequency distribution of responses regarding job title is summarized in Table 4.6. As the survey answer was an open text entry, many specific job titles were entered. These job titles were coded, and an ordinal value was placed upon them to describe the hierarchy level within higher educational systems. The coded job title categories included dean (3), department head (6), full professor (39), associate professor (42), assistant professor (59), and instructor/lecturer (5). Assistant professors were the most prevalent respondent (39.2%) followed by associate (22.9%) and full professors (21.7%). department heads (4.8%), instructor/lecturer (3.0%), and dean (1.8%) had the least responses while 6.5% chose not to respond to the demographic question. The respondent range of the job title demographic corresponds with the number of positions available within the CVMs. There are many more assistant, associate, and full professor positions than there are dean, department head, or instructor/lecturers.

Table 4.6

Survey Responses by Job Title

Respondents (<i>n</i> = 166)	Total	% of Total
Dean	3	1.8%
Department Head	6	3.6%
Full Professor	39	23.5%
Associate Professor	42	25.3%
Assistant Professor	59	35.5%
Instructor/Lecturer	6	3.6%
Chose not to respond	11	6.6%

The survey participants were asked to use a 5-point Likert scale to assess their CVM’s organizational culture. The 33 survey questions were grouped into three dimensions of organizational culture known to create barriers to women advancing in their careers to establish the dependent variables of gender bias, support for work-life balance, and equal access to opportunities.

Descriptive statistics were calculated for the survey questions and include the respondent answer percentage of each question, the mean, and the standard deviation. Questions that are identified with a (r) indicate that that question was reverse-coded. Reverse coding is a validation technique that aids in preventing respondents from responding out of habit (Stuart-Hamilton, 2007). The survey item is reworded from affirmative to negative wording and when the answer is submitted, the reverse numeric scale is used to analyze the data. After an item is reverse-coded, it is important to not examine the single answer in alignment with the standard 5-point Likert scale (1, “Strongly disagree” to 5, “Strongly agree”) but in the reverse (1, “Strongly agree” to 5,

“Strongly disagree”). Reverse-coded items allow multi-item surveys to have the same directional relationship within the study.

Table 4.7 describes the survey questions regarding the organizational culture dimension of gender bias organized from lowest to highest means. The respondents were more likely to agree than disagree with survey statements such as, “When women faculty raise concerns about gender issues, they are seen as ‘whiners.’” Due to the nature of reverse coding, the same respondents were more likely to disagree than agree with survey statements such as, “Women faculty members are comfortable raising issues about the supportiveness of the work environment for women.”

The survey questions oriented around the organizational cultural dimension of work-life balance are summarized in Table 4.8 organized from lowest to highest means. Due to reverse coding, the respondents were more likely to agree than disagree with survey statements such as, “Reducing their work load hurts the chances that women faculty will succeed,” and more likely to disagree than agree with statements such as, “Attending to personal needs, such as taking time off for sick children, is frowned upon.”

The results to the survey questions describing the organizational culture dimension access to resources are summarized in Table 4.9 organized from lowest to highest means. The respondents were more likely to disagree than agree with survey statements such as, “Women faculty receive equitable salaries,” and more likely to agree than disagree with statements such as, “Women faculty get as much office space compared to men faculty.”

Table 4.7

Gender Bias Means from the Lowest to the Highest Mean

Survey Question (<i>n</i> = 166)		Percentage of Respondents' Answer					Mean	SD
		1	2	3	4	5		
33 (r)	If raise concerns about gender issues are seen as “whiners.”	23.5	30.1	21.7	13.9	10.8	2.58	1.28
32	Encouraged to raise concerns about biases against women.	27.7	27.1	15.1	19.9	10.2	2.58	1.35
31	Comfortable raising issues re: supportiveness of environment.	21.7	29.5	17.5	19.9	11.4	2.70	1.32

Note. Survey answers should be interpreted on the Likert Scale as 1= strongly disagree, 2 = slightly disagree, 3 = neither agree nor disagree, 4 = slightly agree, and 5 = strongly agree.

A (r) after the survey question number indicates that the item was reverse coded. These questions should be interpreted in reverse on the Likert Scale as 1= strongly agree, 2 = slightly agree, 3 = neither agree nor disagree, 4 = slightly disagree, and 5 = strongly disagree.

Table 4.8

Work-Life Balance Means from the Lowest to the Highest Mean

Survey Question (<i>n</i> = 166)		Percentage of Respondents' Answer					Mean	SD
		1	2	3	4	5		
27 (r)	Reducing workload hurts chances will succeed in career.	39.2	34.3	10.2	10.8	5.4	2.09	1.19
29 (r)	Work is expected to be the primary focus.	33.1	39.8	9.0	12.0	6.0	2.18	1.19
23 (r)	Reducing workload are viewed by colleagues as less committed.	25.9	37.3	20.5	9.6	6.6	2.34	1.16
25	Family demands considered when scheduling teaching hours.	25.9	29.5	24.1	16.3	4.2	2.43	1.16
26 (r)	An obstacle is expectative of a minimum 60-hour work week.	20.5	33.7	19.3	17.5	9.0	2.61	1.24
24	Family demands considered when scheduling events/meetings.	20.5	26.5	25.3	22.9	4.8	2.65	1.18
20	Supportive colleagues when take time for family.	16.3	29.5	13.9	27.7	12.7	2.91	1.32
30	It is possible to get promoted working 50 hours/week or less.	19.3	20.5	19.3	30.1	10.8	2.93	1.31
28 (r)	Expect to take on more if temp reduction in work for family.	15.1	16.9	34.9	21.1	12.0	2.98	1.21
21	Supportive colleagues when talk about work-family conflict.	12.0	27.1	21.7	25.3	13.9	3.02	1.25
22 (r)	Taking time off for family is frowned upon.	10.2	25.9	22.3	24.7	16.9	3.12	1.26

Note. Survey answers should be interpreted on the Likert Scale as 1= strongly disagree, 2 = slightly disagree, 3 = neither agree nor disagree, 4 = slightly agree, and 5 = strongly agree.

A (r) after the survey question number indicates that the item was reverse coded. These questions should be interpreted in reverse on the Likert Scale as 1= strongly agree, 2 = slightly agree, 3 = neither agree nor disagree, 4 = slightly disagree, and 5 = strongly disagree.

Table 4.9

Access to Resources Means from the Lowest to the Highest Mean

	Survey Question (<i>n</i> = 166)	Percentage of Respondents' Answer					Mean	SD
		1	2	3	4	5		
6	Women faculty receive equitable salaries.	31.9	23.5	16.9	16.9	10.8	2.51	1.37
14 (r)	Women faculty more likely to have other take credit for work.	15.7	33.7	25.9	11.4	13.3	2.73	1.24
10 (r)	Women faculty have less protected time for research.	18.7	23.5	22.3	15.9	18.7	2.93	1.38
17	Comments by women faculty given as much credit and attention.	18.7	27.7	10.8	24.1	18.7	2.96	1.42
3	Women as frequently considered for leadership positions.	18.7	24.7	11.4	22.9	22.3	3.05	1.46
11	Women faculty are as frequently recognized for their work.	16.9	22.9	14.5	25.9	19.9	3.09	1.40
7	Women faculty get as much research equipment/space.	13.9	19.3	24.7	22.3	19.9	3.15	1.32
16	Women play equally important roles in decision-making.	13.3	22.9	14.5	27.1	22.3	3.22	1.37
5	Women receive as much guidance about opportunities.	12.7	18.7	22.9	22.3	23.5	3.25	1.34
12	Women are as often asked to sit on prestigious committees.	13.9	16.9	19.9	28.3	21.1	3.26	1.34
13	Women are as frequently nominated for awards and honors.	9.0	19.3	22.3	28.9	20.5	3.33	1.25
15	Women are as frequently included in discussions policies.	8.4	19.9	30.5	29.5	21.7	3.36	1.26
19	Women as often included in informal social gatherings.	7.8	10.8	27.7	28.9	24.7	3.52	1.20
1	Women have equal access to career development opportunities.	4.2	27.1	7.8	34.3	26.5	3.52	1.26
2	Women faculty get as much mentoring from senior faculty.	10.2	15.7	15.1	27.5	31.3	3.54	1.35
4	Women receive as much feedback regarding performance.	6.6	12.7	23.5	25.9	31.3	3.63	1.23
18	Women as frequently included in professional social gatherings.	7.2	7.8	21.1	33.7	30.1	3.72	1.19
9	Women faculty have equal access to admin support.	7.8	8.4	13.3	36.1	34.3	3.81	1.22
8	Women faculty get as much office space.	6.6	10.8	12.7	29.5	40.4	3.86	1.22

A composite mean was calculated for each of these three culture categories (Table 4.10). Across the three dimensions of organizational culture, respondents were more likely to answer survey questions in a way that affirmed a level of gender bias and a dissatisfaction with work-life balance support through their indication of agreement or disagreement. The survey participants were more likely to respond to survey questions that presented a more neutral response to the access to resources dimension of organizational culture. The mean difference between the most supportive dependent variable, access to resources, and least supportive dependent variable, gender bias, was .66.

Table 4.10

Dependent Variable Means Lowest to Highest Mean

Dependent Variable ($n = 166$)	Mean	SD
Gender Bias	2.63	1.18
Work-Life Balance	2.66	0.88
Access to Resources	3.29	1.00

Gender bias. The first research question examined whether women faculty feel that gender biases exist within their CVM. A composite mean was taken of the survey questions examining gender bias ($M = 2.63$, $SD = 1.18$). With regards to the lack of gender bias within the culture, the mean composite score fell between 2 (slightly disagree) and 3 (neither agree nor disagree). The results indicate that most respondents feel that gender biases exist within their CVM.

Work-life balance. The second research question examined the extent which women faculty at CVMs feel encouraged to maintain a work-life balance. A composite

mean was taken of the survey questions examining work-life balance ($M = 2.66$, $SD = .88$). When examining the support for work-life balance, the composite mean score fell between 2 (slightly disagree) and 3 (neither agree nor disagree). These results indicate that most respondents do not feel encouraged to maintain a work-life balance.

Access to resources. The third question examined whether the women faculty had equal access to resources that contribute to career success. A composite mean was taken of the survey questions regarding access to resources ($M = 3.29$, $SD = 1.00$). As this composite mean fell between 3 (neither agree nor disagree) and 4 (slightly agree), the results suggest that most women feel that they have equitable access to the resources that contribute to career success.

Demographic analysis. The demographic data were analyzed to determine if the difference was statistically significant between the variety of demographic categories (marital status, dependent children status, and job title) and the three dimensions of culture examined by the survey (access to resources, work-life balance, and gender bias).

Marital status. A series of independent t -tests were conducted to compare the composite means of the dimensions of organizational culture dependent variables against single (47) and married/domestic partnership (114) status. The widowed (1) and divorced (9) marital status data was combined with the single (37) marital status and treated as “single” (47). The results, summarized in Table 4.11, show no significant difference between the dimension of organizational culture and the woman’s marital status. The access to resources dimension for single ($M = 3.32$, $SD = 1.05$) and married/domestic partnership ($M = 3.28$, $SD = 0.99$) status calculated as $t(159) = 0.21$, $p = .84$. There was also no statistical significance for the work-life balance and gender bias dimensions of

organizational culture. The work-life balance dimension for single ($M = 2.63, SD = 1.01$) and married/domestic partnership ($M = 2.65, SD = 0.82$) status calculated as $t(159) = -0.12, p = .91$ while the gender bias dimension for single ($M = 2.67, SD = 1.36$) and married/domestic partnership ($M = 2.57, SD = 1.09$) status calculated as $t(159) = 0.47, p = .64$.

Table 4.11

Independent Samples t-Test for Marital Status to Dimensions of Organizational Culture

t-Test for Equality of Means							
Dimension	<i>t</i>	<i>df</i>	Sig (2-tailed)	Mean Diff	Std. Error Diff	95% Confidence Interval	
						Lower	Upper
Resources	0.21	159	0.84	0.04	0.17	-0.30	0.37
Work-Life	-0.12	159	0.91	-0.02	0.15	-0.32	0.28
Gender Bias	0.47	159	0.64	0.10	0.20	-0.35	0.50

Dependent child status. A second series of independent *t*-tests were conducted to compare the composite means of the dimensions of organizational culture dependent variables against having dependent children (59) and not having any dependent children (104). The results, summarized in Table 4.12, show no significant difference between the dimensions of organizational culture and whether the respondent had dependent children. The access to resources dimension for not having dependent children ($M = 3.31, SD = 0.98$) and having dependent children ($M = 3.24, SD = 1.01$) status calculated as $t(161) = 0.51, p = .61$. There was also no statistical significance for the work-life balance and gender bias dimensions of organizational culture. The work-life balance dimension for

no children ($M = 2.67, SD = 0.87$) and having children ($M = 2.58, SD = 0.86$) status calculated as $t(161) = 0.66, p = .51$ while the gender bias dimension for no children ($M = 2.67, SD = 1.20$) and having children ($M = 2.49, SD = 1.09$) status calculated as $t(161) = 0.97, p = .33$.

Table 4.12

Independent Samples t-Test for Child Status to Dimensions of Organizational Culture

t-Test for Equality of Means							
Dimension	<i>t</i>	<i>df</i>	Sig (2-tailed)	Mean Diff	Std. Error	95% Confidence Interval	
						Lower	Upper
Resources	0.51	161	0.61	0.08	0.16	-0.24	0.40
Work-Life	0.66	161	0.51	0.09	0.14	-0.19	0.37
Gender Bias	0.97	161	0.33	0.18	0.19	-0.19	0.56

Job title status. Spearman’s rho correlation coefficient was calculated to determine if there was a correlation with the mean composite score of the three dimensions of organizational culture and the job title of the respondent. Previously the job titles were coded, and an ordinal value was placed upon them to describe the hierarchy level within higher educational systems. The coded job title categories included dean (3), department head (6), full professor (39), associate professor (42), assistant professor (59), and instructor/lecturer (5). As reported in Table 4.13, there is no correlation between the respondent’s job title and the access to resources ($r_s = -.02, p < .06$), the work-life balance ($r_s = -.06, p < 0.44$), and the gender bias dimensions of organizational culture ($r_s = -.06, p < 0.45$).

Table 4.13

Spearman's Rho for Job Title to Dimensions of Organizational Culture

Dimension (<i>n</i> = 155)	Correlation Coefficient	Sig (2-tailed)
Resources	-0.02	0.61
Work-Life	-0.06	0.44
Gender Bias	-0.06	0.45

Across all three demographic categories, there was no statistically significant findings on their relation to any of the dimensions of organizational culture. There was no relationship to how they answered the survey questions regardless of the respondent's demographic status. This indicates that all women, regardless of the demographic that was examined, responded similarly to their perceptions of the dimensions of organizational culture that can affect a woman's advancement within their CVM.

Summary of Results

During April and May 2019 an electronic survey was distributed to 1,112 female faculty at colleges of veterinary medicine in the United States accredited by the AVMA. The purpose was to examine the dimensions of culture that affect a woman's ability to achieve academic career success, namely access to resources, work-life balance, and gender bias. The survey included 33 questions related to the three dimensions of culture and six demographic questions. There were 166 responses (*n* = 166) usable for the research analysis.

The survey data examining the conditions conducive to women's academic success was analyzed using descriptive statistics. The dimension of culture that had the lowest mean (2.63) was gender bias while access to resources had the highest mean at 3.29. Statistical analysis of the demographic groups (marital status, dependent child status, and job title) and the three culture dimensions found no statistical significance between any of the groups. Chapter 5 presents the implications for the data results, the limitations of this study, and the recommendations for future research, practice, leaders, and policy.

Chapter 5: Discussion

Introduction

The purpose of this study was to examine the organizational culture present at the colleges of veterinary medicine in the United States to further understand the gender disparity phenomenon within the academic leadership of those colleges. The study examined the female veterinary academia leadership's perception of the organizational culture at the CVM in which they were employed. As the number of female students continue to represent over 80% of the student population at CVMs (AAVMC, 2017) it is important to question why a similar representation of women is not observed at the faculty and administrative level.

There is considerable empirical support identifying and describing the barriers that women experience as they advance within their careers (Bain & Cummings, 2000; Fritch, 2015; Heilman, 2012). Within higher education many barriers to a woman's career advancement have been identified (Bergquist & Pawlak, 2008; Kalaitzi et al., 2017; Valantine & Sandborg, 2013; Westring et al., 2012). For the purpose of this study three areas were examined, namely, lack of equal access to resources, lack of support for work-life balance, and gender bias.

Schein's (2017) organizational culture theory was used as a lens for this study. From the perspective of female veterinary academia leadership, artifacts and symbols were examined for cultural factors that may affect women advancing into and through

leadership roles within the colleges of veterinary medicine. To further appreciate these factors, the following research questions were posited:

1. What extent do women faculty at CVMs feel that gender biases exist within their CVM?
2. What extent do women faculty at CVMs feel encouraged to maintain a work-life balance?
3. What extent do women faculty at CVMs have equal access to the resources that contribute to career success?

As discussed in Chapter 4, the research questions were analyzed quantitatively with descriptive statistics, to draw conclusions from the 116 respondents to a 33-question, web-based survey. The survey was distributed to the veterinary academia leadership of the 30 colleges of veterinary medicine in the United States accredited by the AVMA. Inferential statistics were used to determine if the demographic group that a respondent identified with had any influence on their response. A discussion of the findings, limitations of the research, and recommendations for further research, policy, and practice follow.

Implications of Findings

This study examined women veterinary academia leadership perceptions of the organizational culture at the CVM in which they were employed. The details of these analyses were presented in Chapter 4 while key findings are considered in this chapter.

Gender bias. The utilization of gender stereotyping can negatively affect a woman's career progress (Heilman, 2012), and has disadvantaged women in agentic career paths like science, math, and leadership (Carnes, Bartels, et al., 2015). Gender

stereotyping directly supports gender bias (Heilman, 2012) as presumptions about disparities in competence can be tied to gender differences (Carnes, Bartels, et al., 2015).

The findings for Research Question 1 indicate that overall, the women faculty perceived gender bias in the culture at the colleges of veterinary medicine in the United States. The respondents did not feel that women could discuss at their place of employment the supportiveness of the work environment for women nor raise concerns about biases that were present against women. They felt that if a woman did raise these concerns, they were seen as a “whiner.” Supporting previous studies indicating the presence of gender bias in higher education (Carnes, Bartels, et al., 2015; Carr et al., 2003), this dimension of the organizational culture of CVMs had the lowest composite mean. This indicates that gender bias continues to be a factor within the organizational cultures of CVMs and affects a woman’s ability to succeed in their academic career.

Work-life balance. As the American workplace has historically been centered around a male career model established in the 19th century (Padavic & Reskin, 2002), balancing work, life, and home has been an especially hard challenge for women as they have entered the workforce. Fritch (2015) noted that when women had spouses/partners and children, women held more responsibilities for the home (such as childrearing and housekeeping) than men, making work-life balance more difficult for women.

The findings for Research Question 2 indicate that overall, the women faculty felt that the organizational culture of their veterinary college did not support work-life balance. Over 73% of the respondents felt that reducing their workload would hurt their career success and 72.9% felt that work was expected to be the primary focus of their lives. This data supports Pew Research Center’s (2013) report that when reducing work

hours to care for a child or family member, women were twice as likely as men to indicate that this action hurt their career.

It is interesting to note that when examining the demographic categories of marital status and dependent child status, two major life responsibilities, there was no statistical significance between these variables and the work-life support dimension of organizational culture. This indicates that regardless of the female representation in these two demographic groups, women continued to experience a lack of institutional support for balancing work and life.

Access to resources. Women in academia have traditionally been denied access to informal networks as well as helpful mentorship opportunities (Cohen et al., 1998; Fritsch, 2015; Gardiner et al., 2007; Keohan, 2014). Other resource challenges include wage inequities and reward structures (Kellerman & Rhode, 2014), as well as the need for female-oriented leadership development programs (Ely et al., 2011).

The findings for Research Question 3 indicate that the female respondents felt slightly positive regarding access to resources for female faculty at colleges of veterinary medicine in the United States. One significant area to note was in the area of salary equity. Over 55% of the respondents felt that compared to male faculty, female faculty did not receive equitable salaries. Wage inequality is seen throughout higher education institutions (Bellas, 1997; Kellerman & Rhode, 2014) and according to 55% of the respondents in this study, it is present in CVMs as well.

Organizational culture. The findings from this study support previous studies examining organizational culture and their effect on women in higher education. Overall, the environment for female employees in higher education has sexist overtones creating

several opportunities for gender harassment in the form of gender role prejudice, stereotyping, and wage inequity, (Alkadry & Tower, 2011; Choi, 2015; Swim et al., 2010).

For example, in the current study, a majority of the women faculty perceived gender bias in the culture at the colleges of veterinary medicine in the U.S. Ibarra et al. (2013) noted that biases and stereotypes are embedded in many organizational practices that create the culture.

Also, the current reality of the study respondents indicate that the culture of the CVMs does not support the work-life balance. In fact, the four lowest scoring survey questions were from the work-life balance dimension of organizational culture. Bergquist and Pawlak (2008) noted that the male values and perspectives of the collegial culture was misaligned with the working woman reality. Many entrenched organizational structures were designed to fit men's lives when the majority of women stayed home, being the primary caretakers for the home and family (Ibarra et al., 2013). Currently, the U.S. Department of Labor (2018) statistics showed that regardless of employment-status, women, compared to men, spend 55% more time on care of children and 30% more time on household tasks. According to Bergquist and Pawlak (2008), and the results of this study, the collegial culture continues to be a barrier to working parents, especially women, in higher education.

Lastly, Kellerman and Rhode (2014) noted that wage inequities and reward structures predicated on a male organizational cultural model impeded a female's career in higher education. Alkadry and Tower (2011) and Choi (2015) note that gender-based stereotypes perpetuate the gender pay gap. The male-centric view of leadership

disqualifies women from positions of power and the wages associated with those positions further the pay disparities between men and women. As a high percentage of respondents to the current study noted that wage inequity was present in their CVM, this indicates that academic veterinary medicine is another department of higher education affected by the gender pay gap.

Limitations

The empirical results reported should be considered in the light of some limitations. The database of participant emails was generated by retrieving publicly available email addresses from the CVM in which they were employed. As such, some women may have not had the opportunity to be included in the study. For example, if the online reference was not up to date or the college did not have publicly available addresses, those women were not included in this study. An additional limitation regarding the participants in this study was the total respondent population size. As there were undeliverable emails and a CVM that asked to be removed from the study completely, the total number of potential respondents was decreased.

The choice of data collection method could be considered a limitation. Sources of error from survey methodology can include biases either from the lack of response or in the accurate nature of the responses obtained (Bell, 1996). Intentional misreporting of information to hide inappropriate behavior can occur. Other sources of error include the respondents poor recall of the circumstances being studied (Glasow, 2005).

Use of the Likert scale can also create a limitation to a study (Barnette, 2010). Response biases can occur presenting in the form of acquiescence bias, central tendency bias, or social desirability bias. Acquiescence bias occurs when respondents have the

tendency to provide positive responses to all or almost all items while central tendency bias occurs when the responses mostly fall within the middle category of the Likert scale. Lastly, social desirability bias occurs when the respondents reply to the survey items in a way that reflects what they believe is expected based upon societal norms rather on their personal view of the survey question.

Westering et al.'s (2012) survey tool entitled Culture Conducive to Women's Academic Success could be considered another limitation to this study for two reasons. First, although statistically tested for validity and reliability, the newness of the survey tool means there are currently no published research studies where the tool has been used. Increased use of the tool could provide more confidence. Secondly, the survey tool was created for human academic medicine, not veterinary academic medicine. Although these two departments of higher education have similar structure, there are differences between them and as such, there may be interpretation differences of the survey questions.

Recommendations

The results of this research study provide an opportunity for recommendations for practice, leaders, policy, and for further research.

Recommendations for institutional leaders. It is important to recognize that organizational cultures reflect the values and norms of previous and current leaders of the organization (Schein, 2017). These values and norms influence both the formal and informal structures, human resource systems, and leadership of an organization (Gelfand, Nishii, Raver, & Schneider, 2007). As such, organizational leadership, and the indications and attitudes that leaders relate about leadership and gender roles are

powerful (Schein, 2017). Members of the organization adjust their behavior to match that of the leader which results in further shaping of the organizational culture.

Leaders within the CVMs should also consider how their actions impact the organizational culture of their institution by looking at Schein's (2017) work in organizational culture and embedding mechanisms. All the embedding mechanisms are used by leaders simultaneously to create and sustain organizational culture of an institution. By altering behavior, leaders can change the organizational culture of the CVMs.

An embedding mechanism noted by Schein (2017) involves leaders communicating what is important to them and what they measure and control. Leaders within the CVMs should consistently notice, communicate, measure, and attempt to control the gender disparity phenomenon present within the CVMs. They could do this with frequent communication to all employees describing the gender parity initiatives and by assessing and benchmarking how the organizational culture affects and responds to the gender disparity phenomenon.

How leaders allocate resources is another of Schein's (2017) embedding mechanisms. CVM leaders should allocate resources that would improve opportunities for women that are stifled by the barriers noted in the literature and in this study. For example, resources could be allocated to review and revise hiring practices, measure the dimensions of organizational that affect women employees within their specific CVM, as well as to provide resources that help support work-life balance. Work-life balance resources could include initiatives such as flexible schedules, more mentoring opportunities by female mentors, and family-care support.

Another embedding mechanism from Schein's (2017) organizational culture theory that CVM leaders should consider is deliberate role modeling, teaching, and coaching. While formal teaching, such as classroom or seminars, are helpful to create a cohesive message to many people, informal teaching, such as mentoring, coaching, and on-the-job training (Cunningham & Hillier, 2013), are more powerful teaching mechanisms to establish organizational culture (Schein, 2017). As such, leaders at CVMs should be available for informal communication while performing tasks. Leaders in higher positions should make themselves available to these informal opportunities by being present in the clinical and educational spaces. Not only will the employees have contact with the leader, the leader can communicate and demonstrate the importance of gender equity practices firsthand.

Leaders of CVMs should also consider another of Schein's (2017) embedding mechanisms: how leaders select, promote, and excommunicate members. Being aware of the implicit bias of hiring people like themselves is imperative for leaders in the CVMs. Hiring for "culture add" instead of "culture fit" will help change the demographics and expand the diversity of the CVMs in the U.S.

Also, due to the similarities in structure, the leaders of the colleges of veterinary medicine should consider examining programs that have worked to improve the dimensions of organizational culture at other medical institutions as well as other institutions of higher learning. Some of these programs include the University of Wisconsin-Madison's gender bias habit-changing workshop (Carnes et al., 2015), Stanford University School of Medicine's work-life improvement program (Fassiotto et

al., 2018), as well as University of California Davis' Women in Medicine and Health Science program (Bauman et al., 2015).

By looking at how other similar organizations have improved barriers to women in their organizational culture and by examining what specific actions leaders can take, gender equity could occur in leadership at the CVMs in the U.S. It is important to note that Schein's (2017) embedding mechanisms interact and reinforce each other if the leader's own beliefs, values, and assumptions are consistent. Leaders of CVMs should demonstrate consistency to establish or change the organizational culture of the institution to being one of greater gender parity.

Recommendations for policy. To mitigate the gender disparity phenomenon within the colleges of veterinary medicine in the US there are many recommendations for policy change. In order to increase the number of females in veterinary academia leadership, there need to be more women hired into these positions (Marschke et al., 2007). Not only should hiring practices be changed to actively seek out women for tenure-track and high-level administrative positions, women should be encouraged to pursue careers as academicians. A job assessment of all positions should be evaluated for bias within the job description and task list. If these roles are gendered as a typically male view of leadership, there could be active discrimination against female applicants. Gender discrimination should be eliminated from hiring practices as well as with employee salary and benefits. This can be accomplished by creating salary transparency, set salaries and benefits for various roles, and eliminating salary and benefit negotiations within hiring practices (D'Armiento, Witte, Dutt, Wall, & McAllister, 2019; Davis & Gould, 2015).

CVM leaders need concrete assessments of their hiring results. CVMs should regularly compile and distribute information on recruiting, hiring, promotion, and retention broken down by gender. Assessing gender equity progress and benchmarking against other CVMs would determine how successful a CVM is creating a more gender equitable culture. Opening dialogue with successful gender equitable CVMs to create best practices and innovative changes to adapt or adopt would be optimal.

Once hired, it is important to have resources to support the work-life balance for the female faculty (Stinchfield & Trepal, 2010). There are many best practices and programs addressing work-life balance such as flexible schedules, leave policies, and childcare assistance (Kellerman & Rhode, 2017). Adopting such policies and promoting their use would be optimal for the female faculty at CVMs.

Views on career commitment must be adjusted to accommodate family and other responsibilities. Not only should flexible policies exist, such as the tenure clock stopping and restarting, but utilizing those policies should not be seen as an individual being not as committed to their career or result in the individual's loss of challenging opportunities or promotion for the future (Bhattacharjee, 2004; Kellerman & Rhode, 2017). Also, the tenure review process should be revised to include merits for service-oriented work such as mentoring and evaluation standards for tenure must be understandable and transparent.

Recommendations for further research. This study provides a foundation for further examination into the gender disparity phenomenon in the leadership of the colleges of veterinary medicine in the United States. Further research may include a deeper investigation into each dimension of organizational culture examined in this study. A more comprehensive study of culture using other organizational culture instruments

would also add to the body of knowledge. This could include gender bias measuring tools such as described in the International Labor Organization's (2017) paper on unconscious gender bias in the workplace as well as the Family-Supportive Organization Perception (FSOP) survey detailed by Allen (2001).

As the female faculty are the front line with the students, a qualitative look into the perceptions of the female faculty, not including female administrative leadership, is also warranted. Hearing the lived experiences of these women firsthand may illuminate the career problems and barriers that they are facing.

Further qualitative research may include studies that interview the women who have achieved high leadership roles in the CVM such as department heads, assistant deans, and deans. Listening to and examining their career paths may provide some insight into any barriers they encountered as well as the tools that they utilized to move forward within their career and circumvent any barriers.

Conclusion

The results of the quantitative study, conducted with female veterinary academia leadership at the colleges of veterinary medicine in the United States, provides a foundation for further examination into the organizational culture at these colleges. It also adds to the body of knowledge for understanding the barriers to women advancing in their higher education careers for all institutions. Chapter 1 discussed the gender disparity present in higher education as a whole and in the faculty and leadership of the colleges of veterinary medicine specifically.

Chapter 2 reviewed the research literature for further understanding what aspects of organizational culture create barriers for a woman's career advancement. The

literature review indicated that three major barriers were present namely, gender bias, work-life balance conflict, and unequal access to resources. All three of these barriers have elements embedded within the organizational culture of the institution. The review also found that although there is empirical research investigating the role of organizational culture on women's career success in other higher education institutions, no similar research exists for the colleges of veterinary medicine.

The research design and methodology to further understand the female faculty's perception of the dimensions of organizational culture that create barriers to a woman's success was described in Chapter 3. The quantitative study used a Likert scale survey tool, A Culture Conducive to Women's Academic Success (CCWAS), that was web-based and distributed via email to women faculty at the 30 colleges of veterinary medicine in the United States accredited by the AVMA. Demographic information such as marital status, dependent child status, and job title were also collected. Descriptive and inferential statistics were used to analyze the 166 responses. Two-tailed *t*-tests were utilized to test statistical significance for the marital and dependent child statuses while Spearman's rho was used to test significance for the job title demographic against the three dimensions of organizational culture examined.

Chapter 4 presented the analysis and results of the research examining three dimensions of organizational culture that can create a barrier to woman's academic success. The first research question asked, to what extent do women faculty at CVMs feel that gender biases exist? The data indicated that the respondents perceive that gender biases exist within their CVM. The data also showed that the respondents do not feel encouraged to maintain a work-life balance, answering the second research question.

The last research question investigated the extent to which the respondents had equal access to the resources that contribute to career success. The data indicated that women did have some access to the needed resources but that the access could be improved. There was no statistical significance between the three demographic areas analyzed (marital status, dependent child status, and job title) and the three dimensions of organizational culture that were examined.

The implications of the findings, limitations of the research, and recommendations for practice, policy, leaders, and further research were presented in Chapter 5. The research indicates that there is a need to make improvements around the gender bias within the colleges and support for the work-life balance of the female faculty at colleges of veterinary medicine. According to the data, the female faculty's access to the needed resources to advance their career seems adequate for most individuals but could be improved specifically in the area of wage equity.

This study's results align with other studies at human medical colleges that have examined the three dimensions of organizational culture that create barriers for a woman's career advancement. As such, it behooves the CVMs to examine in what ways the human medical colleges have implemented action plans to make their college more conducive to a woman's career success. These include gender-bias elimination training, incorporating work-life into career planning, and creating an organization that aids in targeting the specific career development tools that women need to succeed.

In conclusion, as the female student body population of veterinary colleges continues to remain at over 80% per graduating class and the representation of female faculty and administration continues to maintain around 34%, it is imperative that

veterinary colleges look at what is hindering a female's career advancement within the college. This is not only a social justice issue for the women involved, it is vitally important to the female students attending the colleges. Female students perform substantially better academically when they are taught by female teachers (Lim & Meer, 2017; Lockwood, 2006; Marx & Roman, 2002; Nixon & Robinson, 1999; Young et al., 2013). The CVMs can also benefit from the diversity of thought and leadership styles that would arise from the women that would advance in their careers if they mitigated the barriers to these women's career achievement. Lastly, if these barriers can be mitigated, a CVM could potentially become an employer of choice for women faculty, maintaining high retention rates and attracting the most qualified female faculty to join their institution.

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Appendix B

Measure of Culture Conducive to Women's Academic Success (CCWAS)*

Dimensions of CCWAS: Equal Access

The extent to which women faculty have equal access to the resources that contribute to career success, compared to men.

In general, in my department, compared to men faculty...

1. Women faculty have equal access to career development opportunities.
2. Women faculty get as much mentoring from senior faculty.
3. Women faculty are as frequently considered for leadership positions.
4. Women faculty receive as much feedback regarding their performance.
5. Women faculty receive as much guidance about potential research opportunities.
6. Women faculty receive equitable salaries.
7. Women faculty get as much research space/equipment.
8. Women faculty get as much office space.
9. Women faculty have equal access to administrative support.
10. Women faculty have LESS protected time for research. (r)
11. Women faculty are as frequently recognized for their work.
12. Women faculty are as often asked to sit on prestigious committees.
13. Women faculty are as frequently nominated for awards and honors.
14. Women faculty are more likely to have others take credit for their work. (r)
15. Women faculty are as frequently included in discussions of division policies and administration.
16. Women faculty play equally important roles in decision-making.
17. The comments made by women faculty in meetings are given as much credit and attention.

18. Women faculty are as frequently included in professional social gatherings (e.g., dinners with guest scientists).
19. Women faculty are as often included in informal social gatherings (e.g., sporting events, happy hours).

Dimension of CCWAS: Support for work-life balance

The extent to which women faculty are supported in their efforts to balance work and family for the achievement of both personal and professional success.

In general, in my department...

1. Colleagues are supportive when women faculty members take time for family life.
2. Colleagues are supportive when women faculty members talk about work-family issues.
3. Attending to personal needs, such as taking time off for sick children, is frowned upon. (r)
4. Women faculty who reduce their work load are viewed by their colleagues as less committed to their careers. (r)
5. Family demands are considered when the division schedules events and/or meetings.
6. Family demands are considered when the division schedules teaching and clinical hours.
7. An obstacle for full-time women faculty is the expectation of a minimum of a 60 hour work week. (r)
8. Reducing their work load hurts the chances that women faculty will succeed in their careers. (r)
9. Women faculty who temporarily reduce their work load for parenting responsibilities are expected to take on extra work when they return to full-time. (r)
10. Work is expected to be the primary focus of faculty members' lives. (r)

11. It is possible for women faculty to get promoted working 50 hours per week or less on a regular basis.

Dimension of CCWAS: Freedom from gender bias

The extent to which women are able to work in an environment in which they are able to voice concerns regarding subtle and overt gender biases.

In general, in my department...

1. Women faculty members are comfortable raising issues about the supportiveness of the work environment for women.
2. Women are encouraged to raise concerns about biases against women, even if those biases are subtle.
3. When women faculty raise concerns about gender issues, they are seen as “whiners.” (r)

Dimension of CCWAS: Chair/chief support

The extent to which the unit leader supports important aspects of women’s careers.

In general, in my department...

1. My chair tries to ensure that women faculty have equal access to support and resources (e.g., space, administrative support, career development opportunities) to help them in their careers compared to men faculty.
2. My chair tries to ensure that women faculty are equally recognized and rewarded for their work compared to men faculty.
3. My chair tries to ensure that women faculty are included in FORMAL division events.
4. My chair tries to ensure that women faculty are included in NFORMAL division gatherings (e.g., coffee, lunches, sporting events, etc).
5. My chair is supportive when women faculty talk about work-family issues.
6. My chair encourages women faculty to take advantage of policies/practices for managing work and family.
7. My chair ensures work coverage for women faculty on maternity leave.

8. My chair sends a message that parenthood is an expected part of life.
9. My chair tries to ensure that women faculty are able to manage the demands of work and family.
10. My chair tries to ensure that women faculty feel free to express concerns regarding the treatment of women.
11. My chair tries to ensure that women faculty are not sexually harassed.
12. My chair tries to ensure that women faculty are not subject to subtle gender-based biases.

*All items rated on a 5-point scale from 1 (“Strongly disagree”) to 5 (“Strongly agree”). (r) indicates a reverse-scored item. When divisions were the focal unit of analysis, the word “division” replaced “department” and “chief” replaced “chair” throughout the survey.

Appendix C



March 12, 2019

File No: 3995-032119-02

Rachel Hendricks
St. John Fisher College

Dear Ms. Hendricks:

Thank you for submitting your research proposal to the Institutional Review Board.

I am pleased to inform you that the Board has approved the proposal entitled, "Investigation of the organizational culture of Colleges of Veterinary Medicine in the United States: Why the gender disparity in leadership?"

Following federal guidelines, research related records should be maintained in a secure area for three years following the completion of the project at which time they may be destroyed.

Should you have any questions about this process or your responsibilities, please contact me at irb@sjfc.edu.

Sincerely,

A handwritten signature in cursive script that reads "Eileen Lynd-Balta".

Eileen Lynd-Balta, Ph.D.
Chair, Institutional Review Board

ELB: jdr

Appendix D



English

Welcome to the research study!

I am interested in understanding the organizational culture within the Colleges of Veterinary Medicine (CVM) within the United States. You will be presented with information relevant to organizational culture and its affect on women achieving leadership success within a CVM and asked to answer some questions about it. Please be assured that your responses are anonymous and will be kept completely confidential. I am not affiliated with any veterinary institution. My intent is to provide generalizable information across all CVMs rather than study any particular CVM.

The study should take you around 15 minutes to complete. Your participation in this research is voluntary. You have the right to skip any question or to withdraw at any point during the study, for any reason, and without any prejudice. If you would like to contact the Principal Investigator in the study to discuss this research, please e-mail Rachel Hendricks at rah03456@sjfc.edu.

By clicking the button below, you acknowledge that your participation in the study is voluntary, you are 18 years of age, and that you are aware that you may choose to terminate your participation in the study at any time and for any reason.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

I consent, begin the study

I do not consent, I do not wish to participate

