Addressing Washington's Large Animal Veterinarian Shortage

A Report Prepared for the Washington State Legislature

WSU EXTENSION
Division of Governmental Studies and Services

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About the Division of Governmental Studies and Services

The Division of Governmental Studies and Services (DGSS) is a social science research and outreach unit housed in Washington State University (WSU) Extension within the College of Agricultural, Human, and Natural Resource Sciences (CAHNRS). DGSS has served Washington State University's land grant mission of research, outreach, and education in Washington State and across the Pacific Northwest for over 60 years. Through this engagement, DGSS has developed a reputation for robust applied research and serves as an important link that leverages the University's resources for public benefit through applied social science research, technical assistance, and training for government and non-government organizations. DGSS engages both undergraduate and graduate students in applied research projects whenever possible. Students provide cutting edge insight and are able to apply theoretical classroom learning to provide a critical service to DGSS partners.

About the Work Group

Engrossed House Bill 1705 indicates that DGSS shall convene a work group to study and recommend strategies to recruit, train, and retain large animal veterinarians in Washington. The legislation also directs DGSS to secure at least one member from each of the organizations or interest areas as listed below:

a) The director of the department of agriculture, or the director's designee;
b) The secretary of the department of health, or the secretary's designee;
c) The dean of Washington State University college of veterinary medicine, or the dean's designee;
d) The Washington state veterinarian, or the veterinarian's designee;
e) One representative from an organization representing veterinarians;
f) One representative from an organization representing farmers and ranchers;
g) One representative from an organization representing livestock producers;
h) One adult leader representing a national youth development program that includes experiential learning in agriculture and large animal husbandry;
i) The director of equity of the department of agriculture, or the director's designee; and
j) One representative from a historically marginalized community, such as a member of an organization that promotes the agricultural sciences and related fields in a positive manner among communities that have been historically underrepresented or marginalized.
(EHB 1705, 2025)

As a result, the DGSS research team assembled a work group composed of 13 individuals who developed the recommendations in this report. The following list identifies these individuals, with a letter after each member's name corresponding to the work group positions listed above:

Member	Position	Organization
Dori Borjesson, DVM, Ph.D.[c]	Dean of the College of Veterinary Medicine	Washington State University
Poppy Budrow[b]	Program Manager of the Veterinary Board of Governors	Washington State Department of Health
Patrick Capper[a]	Deputy Director	Washington State Department of Agriculture
Bridget Coon[f]	First Vice President	Washington Farm Bureau
Amber Freeberg[b]	Executive Director of the Veterinary Board of Governors	Washington State Department of Health
Eddie Haigh, DVM[e]	Immediate Past President	Washington State Veterinary Medical Association
Bruce Hutton, DVM[d]	Field Veterinarian	Washington State Department of Agriculture
Miguel Inzunza[j]	Director of Student Recruitment and Retention, College of Agricultural, Human, and Natural Resource Sciences	Washington State University
Amber Itle, VMD[d]	State Veterinarian	Washington State Department of Agriculture
Nicole Johnson[i]	Director of Equity and Environmental Justice	Washington State Department of Agriculture
Paul Kuber, Ph.D.[h]	State 4-H Agri-Science Specialist	Washington State University Extension
Fred Muller, DVM[g]	Veterinarian	Washington Cattlemen's Association
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TABLE OF CONTENTS

EXECUTIVE SUMMARY

This report, prepared by Washington State University's (WSU) Division of Governmental Studies and Services (DGSS), was produced at the request of the Legislature, pursuant to Engrossed House Bill 1705 (2025). This bill directed DGSS to convene a work group "to study and recommend strategies to recruit, train, and retain large animal veterinarians in Washington" (EHB 1705, 2025, p. 2). Like much of the country, Washington has faced a shortage of veterinarians who provide services to agricultural animals, especially in rural communities. Of importance, this shortage may pose a threat not only to animal welfare, but also to food security and Washington's agricultural economy more generally. Although the Legislature first identified this shortage as a significant problem nearly two decades ago (SB 6187, 2008), no comprehensive action was taken. Thus, EHB 1705 reflects a renewed interest in addressing the shortage of large animal veterinarians in Washington.

To that end, DGSS convened a 13-member work group comprising representatives from the Washington State Department of Agriculture, the Washington State Department of Health, the Washington State Veterinary Medical Association, the Washington Farm Bureau, the Washington Cattlemen's Association, and Washington State University (including the College of Veterinary Medicine, the College of Agricultural, Human, and Natural Resource Sciences, and WSU Extension). The work group met bi-weekly for 24 sessions between September 2025 and August 2026. In addition to work group sessions, DGSS conducted three additional primary research activities: (1) analysis of five years of WSU DVM applicant data; (2) administration and analysis of a self-report survey delivered to all currently enrolled WSU DVM students; and (3) two focus groups with practicing rural large animal veterinarians in Washington (25 participants total).

Findings are organized around four domains—the pipeline of prospective DVM students, the veterinary school experience, the transition from veterinary school to large animal practice, and the long-term sustainability of rural large animal practices—and presented in the table below. These are followed by recommendations, first for the Washington State Legislature and then for Washington State University, to address the state's veterinarian shortage. Details on how to implement recommendations are provided in the recommendations section of the report.

Key Findings
The Pipeline of Washington's Prospective DVM Students
• WSU's DVM program received 10,393 applications between 2021 and 2025, during which time the number of applicants grew 89 percent. • Applicants from Washington's rural counties are relatively rare, with many counties averaging fewer than one applicant per year. • Although general interest in agricultural/food animals was limited to roughly 6–7% of all applicants, when combined with applicants interested in mixed animal practice (which includes large animals), the proportion was much higher, reaching nearly half of all Washington resident applicants in 2025. • Nearly three-quarters of currently enrolled DVM students reported prior hands-on experience with large animals, and nearly half reported prior experience living in a rural community; this suggested a considerable portion of the pipeline may be well-suited for rural veterinary practice. • Despite this encouraging background among applicants, work group discussions and focus groups identified considerable barriers to entering rural, large animal veterinary practice, including financial

disincentives and limited early exposure through youth agricultural programs. These barriers may negatively impact the pipeline of prospective DVM students.
- FFA and 4-H programs represent an underutilized component of a healthy pipeline, particularly in Washington's urban areas, where agricultural youth programming is limited or absent.
- WSU's Animal Science undergraduate program, which is a key feeder into the DVM program, has limited hands-on learning opportunities with agricultural animals.

Washington State University's Veterinary School Experience

- WSU's College of Veterinary Medicine has not received state funding to expand DVM seats reserved for Washington residents in more than 20 years.
- Approximately 83% of DVM student survey respondents rated their agricultural/food animal training as inadequate and this perception cut across gender, year in the program, prior experience, and species interest.
- Students attributed inadequate training to a lack of hands-on experience with large animals, curriculum gaps, faculty vacancies, and the closure of the Large Animal Internal Medicine service at WSU's Veterinary Teaching Hospital (VTH).
- Despite these concerns, approximately two-thirds of DVM student survey respondents expressed interest in a certificate program that would provide training and experiential opportunities for learning to work with agricultural/food animals in a rural environment.
- Among DVM students who reported they could be incentivized to shift their area of interest to agricultural/food animals, more hands-on training with, and exposure to, large animals was the second most prevalent factor they identified.
- Practicing rural and large animal veterinarians expressed concern that recent DVM graduates lack sufficient hands-on experience to work confidently with large animals; many practitioners also expressed willingness to assist with student externships and training.

Transition from Veterinary School to Large Animal Practice

- Student loan debt was the second most common concern among all DVM survey participants, and the primary concern among those interested in mixed animal practice. On average, new DVM graduates carry over $200,000 in student loan debt, nationally.
- The transition to large animal practice is characterized by significant financial burden; this often propels new veterinarians to seek employment in more populated geographic locations and in settings that focus on small companion animals, where earning potential is considerably higher.
- Washington's Food Animal Veterinarian Conditional Scholarship Program (RCW 28B.121) was enacted in 2008 but has never been funded or placed DVM graduates into rural, large animal practices.
- Approximately 65% of all DVM survey participants, and 95% of fourth-year students interested in mixed animal practice, indicated their willingness to work in a rural, large animal practice in exchange for student loan forgiveness.
- More than 60% of urban- and suburban-bound survey participants said they could be incentivized to work in rural settings; higher salaries were the most frequently cited incentive.

Sustaining Successful Rural, Large Animal Practices

- Rural, large animal veterinarians in Washington often face difficult conditions, including long hours, extensive travel, on-call demands, physical labor, professional isolation, and income that is typically much lower than companion animal veterinarians who practice in suburban and urban areas; these factors lead to burnout and attrition.

- Telemedicine practices, both those located inside and outside Washington State, may further deteriorate the economic conditions needed to support rural veterinarians; these practices threaten to capture key revenue from rural veterinarians who often operate on small margins.
- Veterinary technicians are underutilized in large animal settings, and a shortage of technicians with large animal experience, particularly in Eastern Washington, may exacerbate this problem.
- Large animal practices in rural areas of Washington often face financial roadblocks for updating facilities and equipment, making it more difficult to support business improvements, adopt innovative veterinary practices, and recruit new DVM graduates.

Key Recommendations for Addressing the Shortage	
What Should the Legislature Do?	
Priority 1.	Fund WSU's Food Animal Veterinarian Conditional Scholarship Program (Chapter 28B.121 RCW) — supplemented by industry partnerships sought by the College of Veterinary Medicine — to award two qualifying, Washington-resident students annually
Priority 2.	Provide a dedicated line item in the state's operating budget to fund and support the reinvigoration of the College of Veterinary Medicine's Field Disease Investigation Unit (FDIU)
Priority 3.	Provide additional funding to WSU's College of Veterinary Medicine to expand seat capacity reserved for Washington resident DVM students for the purpose of addressing the state's large animal veterinarian shortage
Priority 4.	Increase funding for the Washington Future Farmers of America Association (FFA) and Washington 4-H programs for the purpose of exposing Washington youth to the agricultural/large animal setting
Priority 5.	If the College of Veterinary Medicine determines more extensive, hands-on teaching opportunities are needed in livestock concentrated areas of the state, the Washington State Legislature should create and fund a task force of relevant stakeholders to determine whether, where, and how a College of Veterinary Medicine satellite location may be established to further enhance agricultural animal education and services.
Priority 6.	Fund the development of high-quality veterinary technician programs in Eastern Washington to better serve the state's rural population
Priority 7.	Support policy that prevents unhealthy competition between the state's rural veterinarians and telemedicine practices that are operating in the state's jurisdictions
Priority 8.	Facilitate increased access to business development capital for large animal veterinarians practicing in rural areas
What Should Washington State University Do?	
Priority 1.	WSU's College of Veterinary Medicine should develop a new strategic plan to enhance the delivery of large/agricultural animal education across all four years of its DVM program.

Priority 2.	WSU's College of Veterinary Medicine should take immediate steps to expand availability of externships and preceptorships in select livestock-concentrated areas in Washington State to enhance agricultural animal education.
Priority 3.	WSU's Animal Science program should increase undergraduate student opportunities for hands-on, experiential learning with large animals, to include opportunities for herd experience and production-based medicine.
Priority 4.	WSU's College of Veterinary Medicine should identify and implement new hands-on learning opportunities in the livestock concentrated areas across Washington State.
Priority 5.	WSU's College of Veterinary Medicine should expand and strengthen collaborations with the University's Animal Science undergraduate degree program to enhance its outreach and facilitate targeted recruitment into the DVM graduate degree program.
Priority 6.	WSU's College of Veterinary Medicine should coordinate with WSU's Animal Science program to increase its presence at youth-focused, large animal events and competitions statewide to conduct targeted recruitment well before prospective college students select an undergraduate major.
Priority 7.	WSU's College of Veterinary Medicine should further develop, expand, and leverage its existing Veterinary Paraprofessional Certificate Program for introducing high school students to the large animal veterinary profession.
Priority 8.	The College of Veterinary Medicine should establish and host quarterly virtual town hall meetings with practicing rural veterinarians across the state.

INTRODUCTION

Nature of the Problem

The U.S. is experiencing a shortage of large animal veterinarians. In fact, this sector of the veterinary profession has been referred to as "the new endangered species,"[1] but this problem is not new. Indeed, the number of individuals who have the sophisticated skills, training, and credentialing to practice veterinary medicine on agricultural livestock and food animals (e.g., cattle, sheep, goats) is not currently sufficient to meet the nation's existing service needs (Tack et al., 2018). There are quite simply too few large animal veterinarians, and the shortage is particularly concentrated in rural settings and underserved communities (Cline et al., 2025).[2] This scarcity of large animal veterinarians is a protracted crisis that has been many years in the making (see Bonnaud & Fortane, 2021), and balancing veterinary service demands with the number of available agricultural providers has been a significant concern that spans many decades (e.g., Larson, 2004; Walker, 2009). This issue is especially problematic since the large animal veterinary workforce has been on the decline while the demand for food animal production has risen starkly (Dicks, 2013). Even more, the shortage is not strictly confined to the United States. Shortages have also been observed in Canada, France, the United Kingdom, and Australia (Berrada et al., 2024; Hagen et al., 2020; Thio et al., 2025; Tremblay, 2023). The implications of this veterinary shortage are far-reaching and touch on numerous domains, including public and animal health, food safety, disease prevention, animal welfare infrastructure, and the agricultural economy.

Legislative Authorization and Requirements for the Current Study

Engrossed House Bill (EHB) 1705 was passed in 2025 to address the growing shortage of large animal veterinarians in Washington State, particularly in rural areas. Consistent with the research described above, the legislation similarly noted that the shortage is negatively impacting animal welfare, disease prevention, and public health. The legislation went on to emphasize three major factors that are exacerbating the shortage (EHB 1705, p. 1-2):

> "First, Washington's agricultural economy and agricultural communities are under enormous strain, and this deters medical professionals from choosing a future connected to the industry....
>
> ...Second, the state has added nearly 2,000,000 people over the last 20 years, but not increased class sizes at the state's college of veterinary medicine....
>
> ...Third, many large animal veterinarians have left the field due to long hours, unpredictable schedules, and higher wages available for small animal care."

As a result, EHB 1705 directed Washington State University's Division of Governmental Studies and Services to convene a work group "to study and recommend strategies to recruit, train, and retain large animal veterinarians in Washington," with a final report containing these recommendations due to the relevant legislative committees by June 30, 2026 (EHB 1705, p. 2).

Purpose and Organization of this Report

The Washington State legislature has identified the shortage of large animal veterinarians as a pressing social problem with significant, negative consequences. The legislation directs the formation of a work group of diverse, external actors to "study and recommend strategies" pertaining to the large animal

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[1] Retrieved from: https://www.merck-animal-health.com/news-and-insights/featured-stories/addressing-americas-rural-veterinarian-shortage-helps-support-and-protect-our-food-supply/ on June 17, 2026.

[2] https://www.usda.gov/about-usda/news/press-releases/2025/08/28/usda-expands-efforts-strengthen-rural-food-animal-veterinary-workforce-and-protect-americas-food

veterinary shortage in Washington State. The work group's fact-finding objectives focused on clarifying barriers to *recruitment, training*, and *retention* of these veterinarians. To generate a series of concrete, actionable strategies for long-term sustainability in addressing the large animal veterinary shortage, the work group's fact-finding progressed in stages and was iterative.

Initial work group meetings were convened to generate industry, community-specific, and professional insights about the nature of the large animal veterinarian shortage. In the extensive policy and evaluation research literature, this is termed a "needs assessment" and is specifically designed to clarify the nature and scope of the problem so that any potential interventions can effectively address the need (Mears, 2010; Rossi et al., 2019). Qualitative data from these initial work group meetings were analyzed for themes and were organized into four broad area domains. Subsequent work group meetings were scheduled so that the specific domains could be discussed in greater detail and inform the policy analysis and quantitative data collection efforts that would eventually inform the work group's recommendations. As a part of the overall study, the research team assessed the theoretical and causal logic underlying the work group's recommendations. This was accomplished through an extensive review of the social science research that discusses the large animal veterinary shortage, describes key historical shifts in the development of modern veterinary medicine, and assesses some of the important observations characteristic of the veterinary profession today (e.g., factors that increase burnout and career exits). This review assesses how well recommendations align with the overall problem and with prior theory and research (Mears, 2010) to demonstrate the expected utility of these recommendations.

The purpose of this report is to present findings from a multi-staged, mixed-methods research study to execute the mandate outlined in HB1705. First, background information relevant to understanding the nature and scope of the large animal veterinary shortage in Washington is presented. This includes a review of the broader historical chronology and development of veterinary medicine in the U.S., with particular attention to the events that propelled the most recent shifts in veterinary education and clinical practice. These shifts are marked by a focus on companion animal care, increasing sex segregation and occupational feminization, and an agricultural farming economy characterized by vertical integration and corporate consolidation that has fundamentally transformed food animal practice. Next, determinants of the shortage are introduced and empirical research to support these claims is provided. This is followed by a brief description of educational training required to practice veterinary medicine and a discussion of Washington State University's Doctor of Veterinary Medicine (DVM) program, which serves as the state's primary source of new veterinarians. Afterward, important contextual information regarding the scope of Washingtons' large animal veterinarian shortage is presented, along with the state's response to this shortage. This is followed by a detailed review of recent efforts by other states and universities to address their own large animal veterinarian shortages.

Once the problem has been sufficiently described, positioned historically, and contextualized with relevant data and policy, the present study's research design and data sources are presented. To clarify the causes of Washington's shortage and generate theoretically-linked and empirically-informed potential solutions, the work group identified three additional data sources for collection and analysis to augment the work group's main work: Quantitative data from the population of WSU's DVM applicants from 2021 through 2025, self-report survey data from a sample of currently enrolled DVM students collected during the Spring 2026 semester, and qualitative data from two focus groups involving approximately 25 private clinical practice veterinarians who currently work in Washington State. Data were analyzed to determine key factors contributing to the shortage of large animal veterinarians, divided into four primary themes or domains identified from the content discussed by work group members in the first phase of facilitated discussion meetings:

1. The pipeline of Washington's prospective Doctor of Veterinary Medicine (DVM) students

2. Washington State University's (WSU) veterinary school experience
3. The transition from veterinary school to rural, large animal veterinary practice
4. Sustaining successful rural, large animal practices

Study findings are presented as they relate to each of the four domains and identify likely causes of Washington's shortage. Finally, a series of detailed, actionable recommendations that have been generated by the work group over the course of the year-long study period are presented. Each recommendation is supported by implementation strategies to effectively address Washington's large animal veterinary shortage.

BACKGROUND AND CONTEXT

Existing research and qualitative work group discussions have identified a series driving forces responsible for the current large animal veterinary shortage. These are better understood in light of a historical overview that discusses significant transformations in veterinary medicine from the early 1900s to the present. Each transition had substantial impacts on agriculture and food animal medicine, and the transitions happened somewhat in tandem with changes in the gender distribution of practicing veterinarians and concurrently with socioeconomic shifts in the agricultural farming economy. Even a cursory review of this history helps to clarify the professional environment and culture that underlies modern day veterinary practice.

Key Historical Developments in the U.S. Veterinary Profession

From Horses to Livestock

Key developments beginning in the late 19th century and continuing throughout the 20th fundamentally transformed the handling of animals from a mostly male farrier and farm hand population into the increasingly sophisticated practices of a "veterinarian," propelled as a profession after the introduction of the scientific method and an emphasis on empiricism in the mid-1800s (Werge, 2003). Prior to widespread adoption of the automobile and the mechanization of agriculture in the early 1900s, veterinary practice and educational curricula focused on equine health to care for the large urban horse population. Throughout this period and into the early 20th century, cultural prohibitions and normative obstacles largely excluded women from matriculating into the nation's veterinary school programs (Irvine & Vermilya, 2010) despite the demand for practicing veterinarians to meet equine health demands. Use of cars for transportation and tractors for farming in the early 1900s necessitated a change in veterinary practice. Veterinary school programs adapted their curriculum (Smith, 2013) and shifted focus from horses to include agriculture and livestock, incorporating animal husbandry and food animal anatomy. While the first woman veterinarian graduated in 1903 (Morello et al., 2022), collectively, women were actively discouraged from applying to veterinary school because of cultural stereotypes that they lacked the strength and stamina to perform the physically demanding and labor-intensive job, because they were ill-suited for "science," and because their child-bearing potential would cut their professional tenure short when they started having children. Those that were admitted faced obstacles—women were not permitted to receive comprehensive training or take certain classes—institutional barriers increased from the 1940s through the 1960s (Irvine & Vermilya, 2010; Stolz, 2006).

Another series of changes took place, beginning in the 1960s, when the U.S. Department of Labor projected a shortage of practicing veterinarians to meet the needs of a slow but steady increase in the companion animal population and to care for the increasing number of livestock animals that were being raised for the nation's agricultural food supply. For half a century, large animal veterinarians, most of whom were men, were the most well-compensated of all veterinary practice sectors. In contrast, women tended to gravitate toward small animal care, which was characterized by intense emotion work, invisible

interpersonal labor, and low pay (Bonnaud & Fortane, 2021). The next several decades introduced significant changes largely the result of distinct and unrelated market forces surrounding: 1) changing social perceptions regarding the value of companion animal care (Hines, 2003; Wolf et al., 2008), 2) shifts in the sex composition of the veterinary profession (Lincoln, 2010), and 3) changes in the structure of the nation's agricultural farm economy (Lasley & Ostendorf, 2022). Collectively, these conditions underlay the current large animal, rural veterinarian shortage.

Companion Animal Care

Shifts in population demography, wealth accumulation, eroding social cohesion and fragmented family structures, smaller family sizes, and increasing lifespans were responsible for a new cultural emphasis on the intrinsic value of pets for companionship (Fogle, 1999; Reinisch, 2009) that started in the 1960s, gained traction in the 1970s and 1980s, and has long-standing impacts that can be readily observed in today's veterinary school curriculum and private clinical practice (see e.g., Stetina & Krouzecky, 2022). In the 1970s and 1980s, veterinary schools made curricular shifts to reflect the emerging research on the human-animal bond (HAB), a term introduced by Drs. Leo Bustad and Michael McCulloch to describe the unique connection that humans share with non-human animals and the consequences of that bond (Zinn & Beck, 2014). Washington State University's Dean of the College of Veterinary Medicine, Leo Bustad, was among a handful of pioneering academic leaders responsible for popularizing the benefits of the HAB among non-academic audiences in the latter half of the 20th century (see Hines, 2003). The HAB introduced a philosophical shift in veterinary medicine (Reinisch, 2009), and well into the mid-2010s, veterinarians embraced the "bond-centered practice" framework that extended veterinary care beyond diagnosis and treatment of an animal's medical needs to include social and emotional support for the pet owner (Ormerod, 2008).

Removing Women's Barriers to Entry

In the 1970s, federal laws that protected women from discrimination in educational settings removed barriers that restricted women's access (Slater & Slater, 2000) so that by the late 1980s, 50% of matriculating veterinary students were women, and by the early 21st century, women made up the majority of students enrolled in the nation's veterinary schools. Approximately 80% of the nation's practicing veterinarians were women and the majority of them elected to focus on companion animal care.[3] Widescale adoption of the "bond-centered practice" philosophy in the 1990s (Knesl et al, 2016) appeared to be well suited to the growing population of women veterinarians working with small animals because of deeply-entrenched stereotypes about femininity (Morello et al., 2022) and women's intrinsic capacity for emotion work, though evidence would later clarify some of the challenges women faced in professional identity and stress-related outcomes connected to this paradigm shift (Irvine & Vermilya, 2010; Pohl et al., 2022; Tomasi et al., 2019). These two phenomena—a predominantly female-dominated veterinary medicine population (Allen, 2016) and a transition toward companion animal care (Fogle, 1999) evolved from distinct historical origins. In other words, these developments represent parallel trajectories, driven by separate sociological factors and have not been attributed to a single causal evolution (Lincoln, 2010; Lofstedt, 2003). Initially, as the number of women in veterinary medicine increased, the status, prestige, and pay of the profession decreased—following a well-known trend in the occupational literature on gendered professions and the feminization of labor (Britton, 2000). While the sex composition of veterinary practice was becoming more favorable to women, their distribution was concentrated among

[3] Veterinary schools created a tracking system for students that differentiated between "large" and "small" animal medicine (Vermilya, 2012). This evolved following fundamental shifts in how animals were reconceptualized for utility purposes (e.g., transportation, food) to family members and the HAB.

practice associates predominantly responsible for the stressful and largely invisible emotion work borne of the HAB and the profession's shift toward bond-centered care. U.S. consumer spending on veterinary services for pet care increased from the 1980s to 2005 (Wolf et al., 2008), reflecting both a surge in the demand for small animal practitioners, and the public's willingness to spend more money on pet care. In the late 1990s, the AVMA reported a shift in salary—for the first time, companion animal practice far exceeded compensation for agricultural and food animal veterinarians (Wise & Adams, 2000). To date, companion animal practice has maintained its high-paying position among the veterinary practice sectors and the gender distribution of companion animal professionals remains largely female-dominated (McCullock et al., 2025).

Corporate Consolidation and Vertical Integration

There were simultaneous changes in the U.S. agricultural farming landscape brought on by federal policies in the 1970s that created the impetus for farmers, who were looking to maximize their production and exports, to take on debt to purchase sophisticated machinery and acquire more land. Socioeconomic shifts in the farming economy produced rapid consolidation and a farming crisis in the 1980s—large corporations bought the land from struggling family farms (Lasley & Ostendorf, 2022) and by the 1990s, "vertical integration" transformed the demand for traditional food animal veterinary care that had historically been characterized by a veterinarian's on-site house call to treat a "sick cow" (Buss et al., 2006) to preventative corporate herd health management (Eriksen et al., 2026). This transformation also dramatically reduced the once visible presence of family farms in rural settings that had exposed generations of youth to livestock and in doing so, modeled a viable long-term career trajectory as a food animal veterinarian. Instead, subsequent years saw dramatic declines in the number of men applying to veterinary school, and this was directly correlated with an increase in applications from women (Lincoln, 2010), suggesting "male flight" from a now feminized veterinary occupation that demonstrated measurably less interest in agriculture and food animal care (Wang et al., 2015).

Forces Driving the Shortage of Large Animal Veterinarians

The social and economic causes of the current U.S. decline in food animal veterinarians are multifaceted:

1. The USDA's National Institute of Food and Agriculture (NIFA) has highlighted[4] how a costly veterinary medical education encourages new graduates to gravitate toward working with companion animals, in part, because increased compensation allows them to pay off their significant student loans faster and eliminate their debt burden.

According to the AVMA's annual "Report on the Economic State of the Profession" (McCullock et al., 2025),[5] 83.4% of all new DVM graduates incur student loan debt to finance their veterinary education; the average student debt was $202,647 per DVM graduate. Compensation for private clinical practice has risen steadily since 2001, but agricultural and food animal practice pays considerably less than companion animal care, by $38,000 annually.[6] A majority of new DVM graduates who enter private

[4] https://www.usda.gov/about-usda/news/blog/nifa-investment-paves-way-veterinary-students

[5] The AVMA collects data annually to inform conclusions about the status of the profession that are disseminated in their annual report. Data from three surveys are compiled to produce the findings and include a survey instrument targeting graduating seniors, a census of practicing veterinarians, and a survey distributed to veterinary practice owners (see McCullock et al., 2025, p. 4).

[6] Nationally, starting annual salaries for food animal veterinary practice currently range from an average of $99,854 for food animal-predominant practices to an average of $107,607 for those working exclusively with food animals. The average starting salary for a mixed animal, private practice veterinarian is not measurably better, at $109,033 (McCullock et al., 2025).

practice report plans to work with companion animals[7] while the percent of new graduates who plan to work in food animal practice has dropped from 5.4% in 2014 to 3.3% in 2024.

2. Practicing veterinarians experience workplace burnout, chronic occupational stress, mental health concerns (e.g., anxiety, depression) and suicide[8] rates that are significantly greater than the general population (Hatch et al., 2011; Tomasi et al., 2019). Burnout among veterinarians threatens their personal and mental well-being, job satisfaction, and professional longevity. These negative workplace conditions and the subsequent burnout that follows has been implicated in high turnover rates and career attrition. There are also economic consequences for the larger profession—the costs attributed to burnout range between $1 and $2 billion dollars, annually (Neill et al., 2022).

Workplace burnout is a state of physical, emotional, and mental exhaustion (Maslach et al., 2001) brought on by chronic psychological and interpersonal stress from adverse occupation-specific conditions that produce long term physical and mental health problems. Veterinarians suffer from higher rates of burnout and report more severe burnout symptoms relative to other occupations. In 2025, veterinarians averaged "moderate" levels of burnout[9] and this trend has been relatively consistent since 2016 (McCullock et al., 2025). Burnout is more pronounced among women, those with less practice experience, who work predominantly with companion animals, and who are carrying considerable student debt (see Steffey et al. 2023 for a review). While lost revenue attributed to burnout is sizeable across all sectors, large animal practitioners have the highest median burnout cost per practicing veterinarian (Neill et al., 2022).[10]

General veterinary practice has been characterized by demanding and stressful workplace conditions, like long hours and on-call emergency duties, challenging client interactions, ethical dilemmas in pet care, compassion fatigue from euthanasia exposure, economic strain, and professional isolation. These factors collectively increase burnout risk (Gibbons et al., 2023; Montoya et al., 2021; Pohl, 2022; Rhodes et al., 2022) and occupational attrition (see e.g., Fletcher et al., 2024; Kogan & Rishniw, 2024). Navigating caregiver grief and stressful interpersonal relationship dynamics with pet owners heightens the risk of depression and burnout among female veterinarians, in particular (Rhodes et al., 2022). Recent research on interventions to address the shortage have highlighted how a positive and fulfilling work environment can distill the negative effects of stress on mental well-being (Christiansen & Clausen, 2026). Prioritizing mentoring, especially among early-career veterinarians, can also mitigate burnout and stall career exits (Standage et al., 2025).

3. Since the 1980s, women have outpaced men both in terms of matriculation into veterinary school and in the number of practicing veterinarians across the U.S.; still, the gendered nature of the occupation remains largely masculine overall, and this is amplified among large animal practice.

The feminization of veterinary medicine (Lincoln, 2010) describes the long-standing and well-documented shift in the gender distribution of veterinary professionals, beginning in the 1980s when women were outpacing men both in terms of matriculation into veterinary school and among practicing veterinarians. Currently, women make up the bulk of applicants to, and graduates from, veterinary schools (Lloyd, 2006)

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[7] This has grown from 66.5% of new graduates in 2014 to 72.9% of new graduates in 2024.

[8] Data on death records for 11,620 veterinarians from 1979 to 2015 revealed 3.5% (n = 398) died by suicide—79% were in clinical practice; 57% worked with companion animals, 11% were classified as specializing in food animals, and 5% were in mixed animal practice.

[9] The AVMA captured burnout with items from the validated self-report survey instrument—the Professional Quality of Life (ProQOL) Scale (Stamm, 2010) to calculate participant burnout scores.

[10] Their cost analysis of veterinary burnout are assessed by calculating the monetary value of professional turnover and a reduction in working hours using data from the AVMA's Veterinary Census (Neill et al., 2022).

but are less likely to go into large animal practice compared to men, whose waning interest in veterinary medicine more generally has measurably decreased the population of potential candidates for large animal veterinary practice.

4. A gradually aging large animal workforce has produced retirements that are outpacing new professional entries into the field;[11] this turnover, coupled with evolving expectations among a younger generation of veterinarians about workplace culture and occupational conditions that prioritize work-life balance may make it more difficult to recruit and retain new veterinarians. These challenges may be especially salient in large animal practice where the physical expectations and long hours are more demanding than working conditions in companion animal practices.

Research has reported how the younger veterinary workforce, new graduates, and current DVM students prioritize work-life balance (Bell et al., 2019), overall well-being (McCullock et al., 2025), and positive psychosocial workplace conditions, like a sense of fulfillment, belonging, and being supported at work (Christiansen & Clausen, 2026). The weight of these factors in career decision making reflects a larger shift in the professional culture of veterinary medicine that began decades ago, characterized by the transition from food and farm animal practice to companion animal care in the 20thcentury (Larson, 2004; Werge, 2003) and the subsequent shifts in the sex composition of practicing veterinarians and workplace expectations ushered in by this profound change.

Among DVM students across three universities, for example, the strongest predictor of food animal veterinary career interest was positive views of food animal veterinarians' lifestyles (Oliveira et al., 2026). Focus groups from fourth-year students in a New Zealand DVM program revealed that career success was defined as professional longevity, work-life balance, and contributing positively to the larger profession (Gordon et al., 2026). When asked by the AVMA to identify motivations for a potential career exit, the top two reasons cited by survey participants were, "to better my mental health" and "lifestyle/work hours." Prioritizing quality of life is not unique to new graduates or young veterinarians. Interviews with 40 mid- and late-career veterinarians directly identified positive workplace dynamics and quality of life as key factors in career decision making (Raghavan et al., 2026). Data from veterinary medicine faculty (Fletcher et al., 2024) and practitioners in mobile and relief veterinary medicine (Kogan & Rishniw, 2024) have echoed these sentiments. Still, the profession is demanding. Among full time, private practice veterinarians, the average work week was 50 hours long. Practice operations ranged from approximately 9 workday hours to more than 13 workday hours, the latter of which reflected average workday hours among large animal practice veterinarians.

5. Limited familiarity with, and exposure to, veterinary medicine and practice for livestock among recent veterinary school graduates; often due to a shift in focus in veterinary medicine curriculum toward companion animal care coupled with veterinary schools' limited budgets that are less able to support direct exposure to livestock (Hart et al., 2005).

Changes in curriculum brought on by the shift toward companion animal care in the latter half of the 20th century systematically deprioritized large animal training (Posey et al., 2012). Institutional-level responses to the rising interest in companion animal care included the use of "tracking systems" or "focused curricula" in DVM programs that replaced generalist training models (Bonnaud & Fortane, 2021) so that students could select a specialty to focus their didactic learning and clinical training. A large matriculating student population with limited pre-DVM exposure to livestock and those from urban backgrounds largely

[11] Graduating a new veterinary professional who is prepared and credentialed to practice veterinary medicine takes approximately 8 years.

defaulted to the small animal track, and veterinary schools adapted to this shift by placing greater emphasis on small animals (Barrington & Allen, 2010). Further, veterinary teaching hospitals were equipped with state-of-the-art small animal facilities and specialists to meet rising demand. Traditionally, VTHs used revenue generation to support education; the more lucrative companion animal sector provided those financial benefits. Declining demand and shrinking clinical caseloads (Prince et al., 2006) created an environment of disinvestment (Tyler et al., 2002). This left large animal infrastructure underfunded and with limited resources to repair, update, or replace aging technology. Finally, recent shifts toward herd health and production medicine in the agricultural food animal sector (Eriksen et al., 2026) have shifted the focus of DVM curriculum training (Barrington & Allen, 2010) toward secondary and tertiary referral care rather than direct, experiential learning with large animals (National Research Council, 2013).

What it Takes to Produce New Veterinarians

A Doctor of Veterinary Medicine (DVM) degree is required to practice veterinary medicine in the US. This professional post-graduate degree involves four years of specialized and directed graduate training in veterinary medicine delivered by a program that has been accredited by the American Veterinary Medical Association (AVMA). The first two years of study are sequentially designed around classroom learning. Curriculum is focused on foundational medicine—anatomy, physiology, immunology, neurosciences, the fundamentals of body systems, and disease diagnostics and treatment. In many DVM programs, students select a clinical track where they want to focus prior to year three (e.g., small animal, equine, food animal), and this guides their remaining years of study. Years three and four are often characterized by work in laboratory and in clinical settings.

There is some variability across DVM programs in terms of the structure and sequence of the curriculum,[12] though all accredited programs require that students gain experience in managing diverse patient caseloads with diagnosis and treatment in clinical rotations. DVM programs frequently provide this experience through a community-based education model—widely referred to as a distributed model of veterinary clinical education. This model provides third- and fourth-year DVM students with clinical experience in community settings, which typically relies on off-campus clinics and private veterinary offices (e.g., Arnold et al., 2025; Gordon-Ross et al., 2014). Some newer programs rely entirely on these community networks for students' clinical rotations. After completing the DVM program, candidates must pass the standardized North American Veterinary Licensing Examination (NAVLE) during their final year of study.[13]

At present, there are 31 accredited AVMA veterinary medicine colleges in 27 US states.[14] The cost of earning a DVM varies considerably depending on state residency status and in-state tuition, but the Veterinary Information Network (VIN) Foundation[15] recently estimated that the monetary burden ranges from $180,000 to more than $400,000. According to the American Veterinary Medical Association's (2026) report on the economic state of the profession, average student debt for new DVM graduates has risen somewhat consistently since 2001 and peaked in 2024, where approximately 82.1% of new graduates had incurred DVM debt during their graduate training—averaging more than $200,000 in total. The distribution of student debt for 2025 DVM graduates was alarming. Although 17.9% of new graduates

[12] AVMA accreditation requires students gain experience in working with diverse patients in a setting where they must manage a caseload and participate in both diagnosis and treatment of patients (Gordon-Ross et al., 2014).
[13] https://vetmed.wsu.edu/education/dvm/navle/
[14] An additional five DVM programs have been provisionally accredited by the AVMA. See https://www.avma.org/education/center-for-veterinary-accreditation/accredited-veterinary-colleges
[15] https://iwanttobeaveterinarian.org/faqs/how-much-does-it-cost-to-attend-veterinary-school/

incurred no DVM debt during their veterinary medical training, 40% reported $200,000 or more in student debt and 5.9% had a student debt burden of $400,000 or greater.

Put simply, becoming a veterinarian is a labor-intensive, 8-year time commitment that requires a substantial financial investment that takes many years to pay off.

An Overview of the Doctor of Veterinary Medicine Program at WSU

Washington State University is one of only two universities in the Pacific Northwest to offer a Doctor of Veterinary Medicine program, where it also houses the largest veterinary teaching hospital in the region. WSU's DVM program specifically reserves seats for Washington residents, but it also reserves seats for residents of neighboring states that lack DVM programs (through various agreements), including Idaho, Montana, and until just recently, Utah. Remaining seats in the program are open to students on a national and international level.

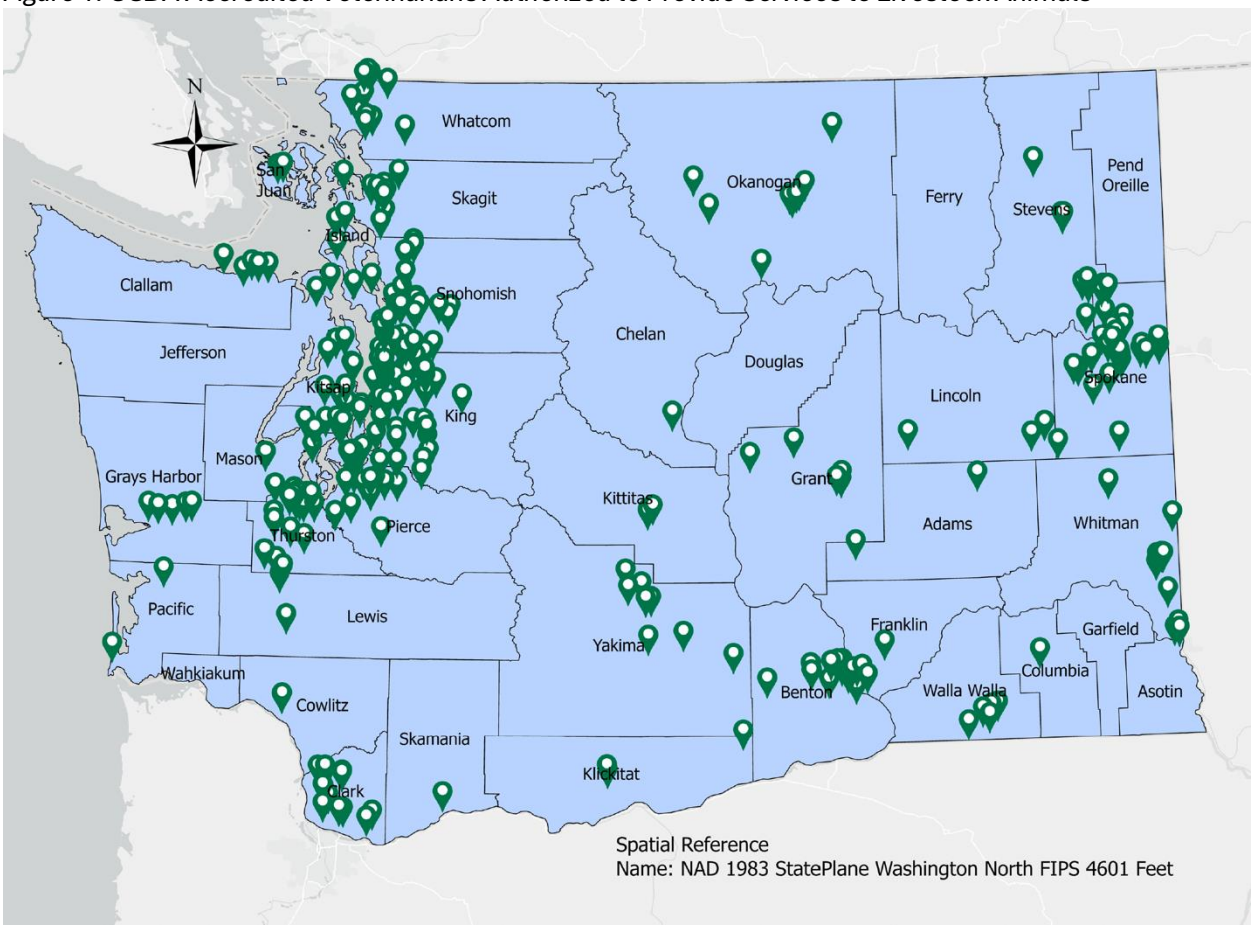
WSU's DVM program is structured over a four-year period where first- through third-year students focus primarily on course work. The program is non-tracked and provides graduates with the skills necessary for a variety of career paths, ranging from research-based specialty settings to private practice. Beginning at the end of year three and throughout year four of the program, students begin clinical rotations where they train alongside certified clinicians in the Veterinary Teaching Hospital, gaining critical hands-on experience. Students have historically been able to choose an area of emphasis for their rotations, such as small animals, equine, large animals, wildlife, and exotics. Though students still select an area of focus, a dwindling large animal caseload has recently led to the closure of the Veterinary Teaching Hospital's large animal in-house emergency service, requiring a greater emphasis to be placed on externships for hands-on experience in this area. Each year, WSU's DVM program produces more than 100 new veterinarians who go on to serve their communities in a variety of different capacities.

The required resident tuition for attending WSU's DVM program is currently $28,278 for years one through three and $40,262 for year four. Non-resident tuition is $65,056 for the first year, and students typically establish residency and pay in-state tuition for their remaining years in the program. The American Association of Veterinary Medical Colleges (AAVMC) provides cost comparisons for nearly all DVM programs in the country. Among the 30 programs reported on by the AAVMC, WSU's program placed in the middle for resident tuition costs; 14 institutions charged lower tuition and 15 charged higher tuition. For non-resident tuition, WSU's DVM program had the lowest cost among the 30 programs compared.

Washington's Large Animal Veterinarian Shortage

Quantifying Washington's shortage of large animal veterinarians is challenging due to limited availability of data. Washington does make available basic data on veterinarians who are licensed to practice in the state, but this information does not specify whether veterinarians practice with small animals, agricultural/food animals, or some combination of both. As a result, the present report relied on data made available by the United States Department of Agriculture (USDA). These data identified all USDA registered veterinarians in Washington and designated them as Category I or II. Veterinarians classified as Category I were authorized to provide accredited services to companion animals such as dogs and cats, while Category II veterinarians were authorized to provide services to all animals, including agricultural/food animals. Figure 1 reports the location of all registered Category II veterinarians in Washington, by county. Category II veterinarians were largely concentrated in Washington's most urban counties, including Snohomish, King, Pierce, Thurston, and Spokane. On the other hand, many of Washington's rural counties had very few USDA registered veterinarians. Although the USDA data should be interpreted with caution since registration is strictly voluntary, the patterns are nonetheless useful for identifying likely shortage areas in the state.

Figure 1: USDA Accredited Veterinarians Authorized to Provide Services to Livestock Animals



Washington's Response

Prior to enacting Engrossed House Bill 1705 that underlies the current study, Washington recognized that a shortage of large animal veterinarians was a critical problem facing rural areas of the state. Nearly two decades ago, the legislature passed Senate Bill 6187 (2008), which established the Food Animal Veterinarian Conditional Scholarship Program. SB 6187 attributed the "critical shortage of food animal veterinarians particularly in rural areas of the state," to an "extensive and high-cost education," noting the difficulty of repaying student loans (p. 1). The bill indicated these conditions were diverting veterinarians away from food animal practice and into higher paying small animal practices. The legislation's explicit purpose was to incentivize graduates of Washington State University's College of Veterinary Medicine to specialize in food animal health services by helping to offset the financial burden of student loans. Scholarship funds could be awarded to cover the costs of tuition, fees, and room and board for up to two students per year. Students were eligible to receive funding for a maximum of five years. In return, students would be required to serve as food animal veterinarians in Washington state for a period of time equal to the number of years for which they were awarded scholarship funding. Despite the state legislature's forward-thinking efforts, SB 6187's resulting scholarship program was never funded, and no students were awarded scholarships under the program.

WHAT OTHER STATES HAVE DONE TO ADDRESS THE SHORTAGE

As noted earlier, the shortage of large animal veterinarians has been intensifying for several decades, and this has given state governments and universities with veterinary medicine programs opportunity to develop a variety of responses to address their shortages. The following two sections summarize these efforts.

State Government Efforts

Table 1 presents a broad overview of the most common interventions taken by states, including a brief description of each. As can be seen, these interventions include a number of approaches directed at enhancing large animal practice, including scholarships for veterinary medicine students, various forms of student loan forgiveness, grant programs to assist veterinarians with acquiring needed facilities and equipment, the expansion of existing DVM programs or the creation of new ones, securing access to seats in out-of-state DVM programs, and establishing work groups to further study and find solutions to large animal veterinarian shortages.

Table 1: State Government Strategies to Address Large Animal Veterinarian Shortages

Legislative Strategy	Definition
Veterinary Medicine Scholarships	State-supported scholarship programs that fund a DVM student's tuition and/or other expenses partially or fully in return for practicing with agricultural/food animals
Student Loan Repayment	State loan repayment programs that offer new veterinarians loan forgiveness, often conditioned upon working in rural areas of the state where veterinary shortages exist for a specified time period
Grants for Facilities & Equipment	State funded grants for practicing veterinarians that can be used for facility upgrades or new equipment
New/Expanded DVM Programs	Newly created veterinary schools usually housed within a state's land grant university or an expansion of programs offered by already existing veterinary schools (often focusing on large/food animals)
Secure Access to Nonresidential DVM Programs	States without their own veterinary schools can secure access for their residents in another state's university, reserving a specified number of seats in the program and paying the university to ensure these non-resident students are charged in-state tuition
Work Group Studies	State-established work groups set up to study the veterinary shortage in rural areas of the state and recommend solutions

Table 2 presents a breakdown of these interventions by state and reveals that at least 24 states have passed legislation to enact student loan repayment programs. These are often modeled on the Federal Veterinary Medicine Loan Repayment Program (VMLRP) which began providing its first awards in 2010, providing up to $25,000 (and currently $40,000) per year (for a maximum of three years) of loan repayment for veterinarians who committed to at least three years of service in a designated shortage area. State programs, however, may offer greater flexibility and/or larger monetary awards than offered by the federal VMLRP. For example, Texas stands out for offering up to $45,000 per year ($180,000 total) for a maximum of four years of service practicing veterinary medicine in dedicated rural counties. Programs such as these offset the costs of tuition and fees and reduce student loan burden to incentivize new veterinarians to work and settle in rural areas of the state, where they are typically needed most. As another example, Kansas implemented forgivable loans ($25,000 per year) awarded to eligible veterinary students who intend to practice in rural areas of the state, assuring prospective large animal DVM graduates of student loan forgiveness. Compared to alternatives like VMLRP, where new veterinarians must first begin work in

qualifying rural areas and then seek loan forgiveness through a non-guaranteed, competitive process, programs like Kansas' may provide stronger incentives by guaranteeing funds up front.

Table 2: State Government Strategies to Address Large Animal Veterinarian Shortages, 2000 to Present

State	Strategy					
	Vet Med Scholarships	Student Loan Repayment	Grants for Facilities & Equipment	New or Expanded DVM Programs	Secure Access to Out-of-State DVM Programs	Work Group to Study Shortages & Solutions
AR	X	X				
AZ		X				
CO		X		X		
CT				X		
GA		X				
HI						X
IA		X				
ID					X	
KS		X				
KY		X	X	X		X
LA		X				
MD			X			
ME		X				
MN		X				
MO		X				
MS	X					
MT					X	
NC		X	X			
ND		X				
NE	X	X				
NH		X				
NJ		X				
NM		X				
OH		X				
OK	X	X				
TX		X				
UT		X		X		
VA		X	X			X
VT		X				
WA	X					X
WI		X				

While student loan repayment has clearly been the primary method adopted by state legislatures to address rural and large animal veterinarian shortages, a small number of states have adopted other strategies as well. For example, Arizona, Mississippi, Oklahoma, and Washington passed legislation to provide scholarships to students who commit to working in designated shortage areas. While similar to loan forgiveness incentives, the advantage of scholarship programs is that new DVM graduates will exit veterinary school and enter practice with reduced loan burden. In addition, a small number of states have established grant programs to provide large animal veterinarians with funds to acquire new equipment and or facilities for their practices. Still, others have taken additional approaches, including expanding the seats available their state's Doctor of Veterinary Medicine (DVM) programs, securing access to

neighboring state's DVM programs, and further studying their shortages through the establishment of work groups.

It is important to note, however, that not all efforts taken by states have been sufficiently funded. Washington stands out as an example, where Senate Bill 6187 was passed during the 2007-2008 legislative session to establish the Food Animal Veterinarian Conditional Scholarship Program. As mentioned previously, SB 6187 found a "critical shortage of food animal veterinarians particularly in rural areas of the state," yet the scholarship program did not receive appropriations from the legislature, and to date, no students have been awarded the conditional scholarships.

University Efforts

There are currently more than 30 accredited veterinary schools in the United States, many of which have implemented programs or strategies to address the shortage of large animal veterinarians. These range from strategic program development for building healthy student pipelines into and out of veterinary school to direct funding assistance in the form of loan forgiveness or scholarships to alleviate the financial burden many students face immediately after graduating and entering rural practice.

Table 3 summarizes these efforts. Creating a program with a specific focus on large animal veterinary medicine is among the most prevalent of strategies adopted by universities. Kansas State University's Veterinary Training Program for Rural Kansas (VTPRK) stands out as an example of this approach. The VTPRK creates a cohort of students that not only receive financial incentives but also receive additional training to prepare them for successfully working as rural veterinarians. Texas took this approach a step further, leveraging their newly accredited veterinary school at Texas Tech University that was purpose-built to educate rural students explicitly interested in animal agriculture. Texas Tech seeks to solely focus on animal agriculture and large animal care to help address the shortage in vast swathes of rural Texas and neighboring New Mexico, while students interested in small animal care or other kinds of veterinary practice can attend Texas's original veterinary school at Texas A&M. To accomplish this goal, the program has relied on targeted recruitment and an admissions process that requires demonstrated "…agricultural, animal, or veterinary experience in rural and regional communities," along with "…evidence supporting [students] interest in rural and regional veterinary medicine."[16]

Several DVM programs also offer early admissions opportunities. For example, Louisiana State University's (LSU) early admission program guarantees up to ten undergraduate students from Louisiana State University-Alexandria (LSUA)—a university in the LSU system—admission to veterinary school while certain academic conditions are met. The program begins in high school, with prospective students required to be from rural Louisiana and involved with FFA or 4-H their senior year of high school. If the students are selected for the program, they can attend LSUA on a pre-veterinary medicine track, ultimately guaranteeing them admission to the LSU veterinary school upon graduation from LSUA if they remain in good academic standing.

Many universities also engage in targeted recruitment with the goal of admitting students who have an interest in practicing large animal medicine in rural areas and beyond. Examples include Purdue University's high school camps (e.g., Vet Up!), which specifically aim to address rural/food animal veterinarian shortages, and the University of Minnesota's VetCamp, which serves as a career education program for middle and high school students to develop an early interest in veterinary medicine. Strategies such as these help universities develop robust pipelines into veterinary schools and tap into undeveloped recruitment pools.

[16] https://www.depts.ttu.edu/vetschool/dvm-admissions/how-to-apply/admissions-requirements.php

Table 3: Efforts to Address Large Animal Veterinary Shortages at Institutions of Higher Education (IHE)

State	Institution of Higher Education	Interventions				
		Early Admissions	Targeted Recruitment	Rural/Large Animal Programs	Funding	Other
Alabama	Auburn University		X	X	X	X
California	University of California, Davis		X	X		
Colorado	Colorado State University			X		
Florida	University of Florida	X		X	X	
Georgia	University of Georgia		X	X	X	X
Illinois	University of Illinois	X				
Indiana	Purdue University		X	X		X
Iowa	Iowa State University	X		X		
Kansas	Kansas State University	X		X	X	X
Louisiana	Louisiana State University	X			X	
Michigan	Michigan State University				X	
Minnesota	University of Minnesota	X	X	X		
Mississippi	Mississippi State University				X	
Missouri	University of Missouri	X				X
Nebraska	University of Nebraska-Lincoln				X	
North Carolina	North Carolina State University			X		
Ohio	The Ohio State University	X	X	X	X	
Oklahoma	Oklahoma State University		X	X		X
South Carolina	Clemson University					X
South Dakota	South Dakota State University			X		
Texas	Texas Tech University		X	X		
Wisconsin	University of Wisconsin - Madison			X		

Another common university effort is direct financial support in the form of loan forgiveness programs or scholarships. While all veterinary schools offer scholarship support to incoming students, often supported by private donors, some programs specifically support students interested in large animal care and receive direct state funding to maintain them. Many of the loan forgiveness programs are supported by state governments and modeled after the federal VMLRP described earlier. In addition, some universities, such as Mississippi State University, offer scholarships that cover the entire cost of veterinary school on the condition that recipients work in large animal practices in rural areas of the state. While generally limited to two or three students per year, scholarship programs such as these can create a reliable supply of veterinarians heading directly to rural areas for large animal care.

Finally, some universities have pursued unique solutions to the shortage, focusing on factors affecting the large animal veterinary shortage that may receive less attention. Veterinary technician degree programs like the one at the University of Missouri (MU) are an example of this. MU offers an online B.S. in Veterinary Technology that was explicitly developed to address the nationwide shortage of veterinary technicians. This shortage has coincided with the large animal veterinary shortage and has exacerbated the challenges rural veterinarians face when engaged in large animal care, particularly concerning workload and case management.

The various efforts described above are not exhaustive but serve as key examples of strategies adopted by universities to increase interest in large animal veterinary careers and ensure stable placement of new graduates into positions and rural areas of states where large animal veterinarians are needed most.

THE CURRENT STUDY

An historical review of developments in veterinary medicine, a summary of existing peer-reviewed literature on key contributors to the current large animal veterinary shortage, and a synthesis of current state and university interventions to address the shortage provide a foundation from which to understand the nature of Washington's shortage and inform potential recommendations. The next sections present the current study's research methodology, which includes the study design and sources of data that were collected and analyzed.

Research Methodology, Study Design, and Sources of Data

To understand Washington's large animal veterinarian shortage and to ascertain potential solutions to this problem, several primary and secondary data sources were collected and analyzed, as mixed-method study designs can offer considerable value (Littlewood & Gardner, 2026).

Work Group Discussions and Qualitative Theme Development

Qualitative data were generated through facilitated meetings of a multidisciplinary stakeholder work group. These discussions elicited participants' professional expertise, contextual and experiential knowledge, perceptions of contributing factors, barriers, potential solutions, and recommendations for additional sources of data collection.

To assemble the work group, the research team generated a list of potential contacts from the stakeholder interests named in EHB 1705 and communicated via email to solicit interest and invite participation. Formation of the work group took approximately one month and yielded 13 stakeholders. Members came from state agencies, industry, veterinary medicine, and higher education. Together, the work group represented the Washington State Department of Agriculture, the Washington Farm Bureau, the Washington Cattlemen's Association, the Washington State Veterinary Medical Association, the Washington State Department of Health, and Washington State University (College of Veterinary Medicine, College of Agricultural, Human, and Natural Resource Sciences, and WSU Extension).

From September 2025 through August 2026, 24 bi-weekly work group discussion meetings were facilitated via Zoom video calls; each meeting lasted an average of 90 minutes.[17] Three members of the DGSS research team organized and attended all work group meetings which were led by one member of the research team.[18] The remaining two research team members observed the meeting discussions and took contemporaneous notes. The research team set the meeting agendas in consultation with work group members. Following each meeting, a summary of key discussion points culled from the detailed notes were distributed to work group members.

The collection and analysis of qualitative work group data comprised two main phases. The first phase was focused on the causes of the shortage, as perceived by the work group members. During the first five bi-weekly work group meetings, members identified contributing factors linked to Washington's large animal veterinarian shortage. Meeting notes were analyzed independently by the research team to identify recurring themes. This produced the framework for understanding additional inquiry, where the causes of the shortage (and their respective interventions) could be grouped into four main domains:

1) The pipeline of Washington's prospective DVM students
2) The veterinary school experience of students enrolled in WSU's DVM program

[17] Range = 90 to 120 minutes, mode = 90 minutes

[18] No member of the DGSS research team or support assistants on the project are affiliated with or have an interest in the College of Veterinary Medicine at WSU.

3) The transition from veterinary school to large animal and rural veterinary practice
4) The sustainment of successful rural and large animal practices in the long term

The second phase of the work group sessions were organized to achieve two primary goals: 1) clarify the nature and scope of the shortage in Washington, and 2) identify potential interventions to address the shortage. Phase 2 was comprised of 19, bi-weekly work group discussions. During this phase, members generated additional data sources to collect and analyze for better understanding the nature of Washington's shortage and potential solutions. The three data sources are identified below and further described in the sections that follow:

1) Official data from WSU's College of Veterinary Medicine for the population of DVM program applications submitted for consideration from 2021 to 2025
2) Self-report survey data collected from a sample of currently enrolled DVM students in the College of Veterinary Medicine at WSU
3) Qualitative data from two focus groups comprised of rural veterinarians in private clinical practice across Washington State

These additional data sources were analyzed, and preliminary findings were shared during facilitated discussions with the work group to aid members in formulating a set of empirically informed interventions. Meeting notes from phase 2 were retained and the qualitative data were analyzed independently by the research team. Findings are synthesized and presented alongside results from an analysis of the additional data sources.

Population Data on DVM Applications Submitted from 2021 to 2025

Washington State University is one of only two institutions located in the Pacific Northwest region of the U.S. that offers a Doctor of Veterinary Medicine (DVM) graduate degree. As a result, the supply of new DVM graduates and practicing veterinarians in Washington State, including those who choose to service large animals in rural regions of the state, depends heavily on WSU's DVM program; the students admitted to the program; and the future career paths of their DVM graduates. To understand trends and patterns affecting the current pipeline of incoming students interested in the veterinary profession, the College of Veterinary Medicine's most recent 5 years of data on the population of applicants were collected and analyzed (see Table 4 for basic descriptives). Data included information about each applicant's prior academic performance, their area of interest (e.g., equine, bovine, small ruminant, small animal, wildlife), career intent (e.g., private clinical practice, non-profit practice, government practice, etc.), prior experience with animals, basic demographic characteristics, and county and state of residence. In addition to examining recent trends in student applicants, these data were also used to determine whether, and the degree to which, student applicants' anticipated career paths (e.g., career interest, species of focus) played a role in the CVM's admissions decisions.

Table 4: Washington State University DVM Program Applicants, 2021-2025, N = 10,393

Characteristic	Category	Frequency	Percentage
Academic Year	2021	1,338	12.9%
	2022	2,070	19.9%
	2023	2,039	19.6%
	2024	2,419	23.3%
	2025	2,527	24.3%
Washington State Resident	Yes	1,007	9.7%
	No	9,386	90.3%
Admitted and Enrolled	Yes	659	6.3%
	No	9,734	93.7%

Self-Report Survey Data from Current DVM Students

Quantitative and qualitative survey data were collected from a sample of currently enrolled DVM student participants during the Spring 2026 semester. The research team developed and administered the 35-item instrument to capture demographic information, expected career paths and areas of interest, geographic preferences for post-graduation employment, experiences with large animals prior to and during their time in the DVM program, and the perspectives on career transition following graduation. Eight of the 35 items were open ended and/or requested additional qualitative feedback from participants. Individual items were generated in consultation with the work group for content relevance and to ensure discipline- and program-specific language. The survey instrument is presented in Appendix A.

The population of 548 currently enrolled DVM students were invited to voluntarily participate in an anonymous survey. Participation was solicited via email and included a URL link that directed potential participants to the online survey platform where they could complete the survey. To facilitate participation, two follow-up reminders were sent to students at approximately one-week intervals (Dillman 2011). The survey took approximately 10 minutes to complete. In total, 229 students opened and at least partially completed the survey, yielding a response rate of 41.8%. Data were imported and analyzed in SPSS. Quantitative data were screened and univariate statistics were generated (e.g., means, standard deviations, frequency counts, and percentages).

Table 5: DVM Student Survey Participant Demographics

Characteristic	Category	Frequency	Percentage
Year in Program	First Year	50	26%
n = 194	Second Year	47	24%
	Third Year	54	28%
	Fourth Year	43	22%
Participant Gender	Female	139	83%
n = 167	Male	21	13%
	Non-binary	2	1%
	Prefer not to say	5	3%
Race/Ethnicity	American Indian/Alaska Native	3	2%
n = 166	Asian	8	5%
	Black/African American	1	<1%
	Hispanic/Latino	8	5%
	White	135	81%
	My race/ethnicity is not listed	3	2%
	Prefer not to say	8	5%
Prior Rural Living Experience	Yes	74	44%
n = 167	No	93	56%
Undergraduate Major	Animal Science	77	46%
n = 167	Other Science	64	38%
	Social Science	8	5%
	Other	18	10%

Descriptive statistics are reported for the sample in Table 5 and reveal that first- through fourth-year student participants were approximately equally represented, with slightly higher representation among third-year students (28%) and slightly lower representation among fourth-year students who have reached the clinical rotations phase of the program (22%). In addition, most survey participants identified as female (83%) and white (81%), which is consistent with the overall population of students currently enrolled in the DVM program. Participants most often came to the DVM program with a degree in Animal

Science (46%) or another natural science (e.g., Biology) (38%). Finally, slightly more than half of participants (56%) did not have prior experience living in a rural area (defined as open countryside or a town with fewer than 2,500 people).

Open-ended survey responses were qualitatively analyzed using a directed or abductive content analytic approach (Hsiu & Shannon, 2005; Nicmanis, 2024). Drawing upon knowledge garnered from the work group meetings and informed by existing literature, all responses were initially reviewed to identify recurring patterns and themes, which were recorded as notes to inform later steps in the content analysis (Ryan & Bernard, 2003). Following the initial review and identification of preliminary themes, the textual data were examined through a line-by-line analysis. The occurrence of each main theme was tabulated; subthemes were identified and similarly counted. The frequency of each theme was recorded to assess the prevalence of responses for a given qualitative item across survey participants.

Qualitative Focus Groups Data from Practicing Veterinarians

Two focus groups were conducted with practicing veterinarians in Washington. The central purpose of the focus groups was to gain insight into the challenges faced by large animal veterinarians practicing throughout rural regions of the state and to hear from veterinarians about these challenges in their own words. Work group members, several of whom were practicing veterinarians themselves, provided contact information to the research team for mixed and large animal veterinarians who could serve as potential focus group members. The research team then contacted each of the suggested veterinarians via email, explained the overall purpose of House Bill 1705, and invited their participation. The first focus group was conducted on March 27, 2026, and included 11 practicing veterinarians. The second focus group was conducted on May 6, 2026, and included 14 practicing veterinarians. Each focus group meeting was approximately 1.5 to 2 hours in length.

FACTORS CONTRIBUTING TO WASHINGTON'S LARGE ANIMAL VETERINARIAN SHORTAGE

As described above, all factors associated with Washington's large animal veterinarian shortage were categorized into the following four domains: 1) the pipeline of Washington's prospective DVM students, 2) the veterinary school experience of students enrolled in WSU's DVM program, 3) the transition from veterinary school to large animal and rural veterinary practice, and 4) the sustainment of successful rural and large animal practices in the long term. Where relevant, the sections that follow present findings from the work group sessions, large animal veterinarian focus groups, admissions data, and student surveys as they relate to the causes of Washington's shortage within each domain.

The Pipeline of Washington's Prospective DVM Students

The pipeline of Washington's prospective DVM students represents the source of the state's future veterinarians, of whom only a small subset will choose to work in rural communities and with large animals connected to the agricultural/food industry. Instead, the majority of future veterinarians typically choose to work in larger communities and often only with companion animals. As a result, understanding the composition of Washington's pipeline of prospective DVM students and cultivating a healthy interest in work with large animals and in rural communities is critical. As described below, findings revealed several potential causes of Washington's shortage linked to the pipeline of prospective DVM students.

Work Group Findings on the DVM Student Pipeline

The work group spent several months discussing issues related to the pipeline of students into a veterinary career, which included conversations about how to foster an interest in veterinary medicine among younger students in K-12 settings, as well as how to redirect undergraduates or those already out of

postsecondary education into veterinary school and, critically, into rural and large animal practices. Both the existing pipeline challenges and some potential solutions the work group considered are detailed below.

Barriers to Large Animal Veterinary Practice

Through multiple meetings, work group members identified a wide range of interconnected factors contributing to the current shortage of large animal and rural veterinarians. These include long working hours, unattractive salaries relative to small animal practice, work-life balance challenges, professional isolation, a stressful work environment, significant student debt, limited mentorship, and uncertainty about career paths.

For these and other reasons, many veterinary students who enter school interested in large animal practice ultimately choose not to pursue it. One primary reason for this for many prospective students is the high cost of veterinary education relative to projected salaries. This can make the profession appear to be a poor financial investment, particularly for those considering large animal practice, where compensation is lower than in companion animal medicine. Early work group discussions also noted that addressing recruitment and retention challenges would require more robust loan repayment programs and a greater effort to recruit students from rural backgrounds, who tend to return to rural areas to serve their communities after graduation. The work group also identified additional contributing factors, including a lack of mentorship, the absence of established practice systems, limited revenue streams, and insufficient youth development and outreach programs.

Gender and Workforce Demographic Shifts as Barriers

Some work group discussions focused on the role of gender in large animal medicine and the shifting gender demographics in the wider veterinary profession. Large animal practice has historically been dominated by white male veterinarians, but interest among this demographic in this career trajectory has declined over time. Women are entering these roles in greater numbers, but they can often face cultural or social challenges in the field that discourage them from pursuing large animal care. Work group members expressed concern that the most acute shortage may occur in the near future if women currently in large animal practice begin to leave the profession. Specific challenges discussed included navigating childbearing years, with members proposing a temporary practice coverage model that would allow veterinarians to post short-term paid opportunities during maternity leave, as well as childcare support benefits. Discussions also focused on the social dynamics female veterinarians in large animal practice may face, including perceptions among some clients that male veterinarians are better suited to the job. This kind of gender discrimination can often discourage women from entering the field as large animal veterinarians or eventually cause them to leave. Members agreed that support mechanisms are needed to attract and retain veterinarians of all genders, with particular attention to those already practicing in rural settings.

Limited Early Exposure to and Education with Agricultural/Large Animals

Work group members described the pipeline into the veterinary field as comprising five broad stages: 1) early exposure in grades K-10, 2) college preparation in grades 11-12, 3) undergraduate preparation for veterinary school, 4) the post-undergraduate period, and 5) veterinary school itself. Members emphasized how weaknesses at each stage compound over time, and this culminates in a smaller and less prepared pool of prospective large animal veterinarians.

Early exposure to large animals has traditionally occurred through fair culture and agricultural programs, but members noted that this culture has eroded over time and is considerably less prominent in the Pacific Northwest than in other regions of the country. Participation in FFA and 4-H during high school has historically served as a key entry point for students interested in animal agriculture and veterinary careers,

but these programs are largely absent in urban school districts, where many teachers also lack backgrounds in agricultural sciences. Members identified expanding FFA and 4-H into urban and suburban areas as a priority, noting that students tend to develop interest once they are exposed to these programs, and that urban students represent an underutilized pool of future large animal veterinarians.

These concerns about outreach and early engagement were reinforced in subsequent work group meetings, where members noted that at a recent state convention attended by approximately 2,000 high school students, recruitment efforts reached fewer than 120 students. Members discussed the value of having college leadership, veterinary students, and practicing veterinarians present at these events to engage prospective students and their families. Members also identified barriers such as student policies, liability concerns, and ranch labor regulations that may limit opportunities for students to gain hands-on experience in agricultural settings.

Animal science programs also play a central role in the pipeline by providing foundational hands-on experience with livestock and agriculture. This theme was raised at several meetings, during which members noted that these programs are facing funding cuts, faculty losses, and reduced access to livestock species that include swine and sheep due to the loss of teaching units and centers. Students are therefore less likely to gain experience with herd management or full production cycles. Members also noted that animal science has seen a record number of applications from students expressing interest in veterinary medicine, but that many lose interest partway through their undergraduate education. Collectively, these discussions highlighted concerns that erosion of experiential learning opportunities throughout the educational pipeline may reduce both the number of students pursuing veterinary medicine and the likelihood that those students ultimately enter large animal practice.

Increasing WSU's Recruitment Presence at Youth-Focused Events

The role of agricultural youth organizations in fostering interest in veterinary careers, animal science, and attendance in WSU's programs led the work group to consider ways that WSU could increase its presence at organization events and better recruit prospective undergraduates and, eventually, future veterinarians. Members emphasized that WSU's College of Veterinary Medicine needs to ensure a consistent presence at events in the form of judging competitions, delivering presentations and workshops, and engaging in public relations activities.

As WSU hosts the Washington State Future Farmers of America State Convention and is closely linked to 4-H through Extension, engaging youth in these organizations should be the first priority of the College of Veterinary Medicine and representative from the Animal Science program. These organizations are likely sources of students interested in attending WSU for an animal science or related degree and could develop an interest in veterinary medicine. The work group also identified many other potential events across the state, including the Washington State Fair, Skagit County Fair, Whatcom County Youth Fair, various county fairs throughout the year, the College of Veterinary Medicine's Teddy Bear Open House Clinic, the Junior Livestock Show of Spokane, and the Spokane Ag Expo, among others.

In tandem with an increased WSU presence at these events and within these organizations, work group members emphasized the need for continued and increased state support for groups like FFA and 4-H. These organizations are critical for exposing Washington youth to animal agriculture, and while their presence in rural parts of the state is already robust, with state financial support, they could expand into urban areas of the state and potentially tap into a pool of students that is being underutilized or ignored. Fostering an interest in animal agriculture among urban students could bring more undergraduates into WSU's animal science program and, eventually, into the DVM program and out to rural practices across the state.

Improving the Animal Science Program to Strengthen the DVM Pipeline

In addition to enhancing the presence of Animal Science faculty at the events listed above, the work group recommended that this program should increase available opportunities for undergraduate students for hands-on, experiential learning with large animals. This could include further developing relationships with livestock producers in the area around WSU and coordinating with the University of Idaho or other regional institutions to share livestock for learning opportunities. While the enrollment in the animal science program at WSU is generally robust, ensuring these students are exposed to large animals can fortify sustained interest in large animal care and eventual entry into the DVM program.

Developing and Expanding WSU's Veterinary Paraprofessional Certificate Program

To further improve the presence of WSU's College of Veterinary Medicine among Washington's youth and help foster interest among them in animal agriculture, the work group recommended WSU further develop, expand, and strongly leverage its existing Veterinary Paraprofessional Certificate Program. This program introduces high school students to the large animal veterinary profession and can help prepare interested students for admission to WSU's animal science program (or related degrees), setting up a potential pipeline into the DVM program. The work group emphasized that this program should be actively promoted in high schools, particularly in rural areas, and expanded as resources allow.

DVM Admissions Data Findings on the DVM Student Pipeline

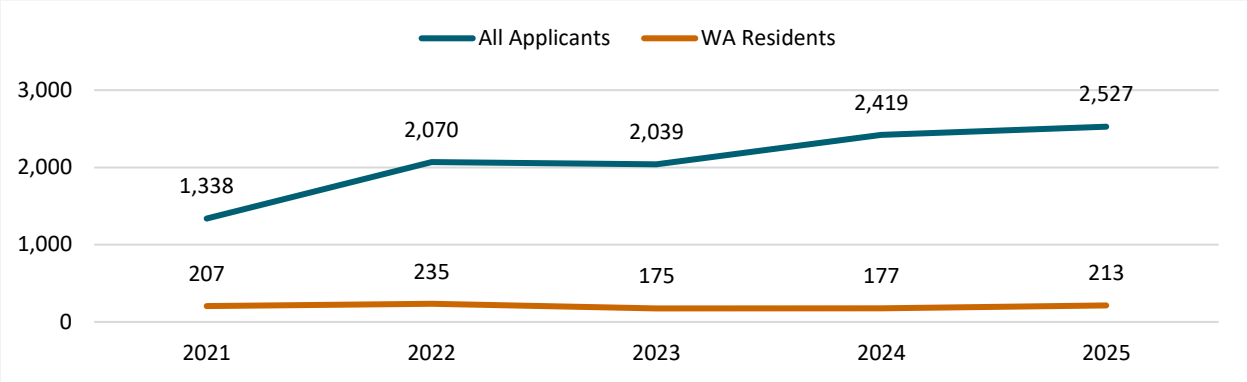
This section details College of Veterinary Medicine (CVM) applicant data for all DVM applicants for the five-year period from 2021 to 2025 to better understand the pipeline of potential large animal veterinary professionals. Key issues addressed in this section focus on the characteristics of the applicant pool and the level of interest applicants had in large animal veterinary medicine. In addition to presenting descriptive data, this section reports findings from a multivariate statistical analysis that examined which factors were most salient for admission to the DVM program at WSU.

From 2021 to 2025, the College received 10,393 applications to the DVM program, providing ample data to examine the candidate pool. Findings from an analysis of this data are presented below and include count data and longitudinal trends that report information on gender distribution, prior experience and educational background, and information about long-term career trajectory, areas of interest, and post-graduation veterinary practice plans. Where applicable, findings are presented so that data are disaggregated by residency. Washington State residents were compared to the total application population to visually illustrate patterns of interest because these candidates arguably represent the pool of potential individuals most likely to practice veterinary medicine in Washington.

Washington State Residency

As can be seen in Figure 2, the number of applications to WSU's DVM program has grown substantially over the past five years (89%). Approximately 10% of all applications were submitted from Washington State residents (n = 1007) and the number of in-state residents who apply each year has been relatively stable over time. The proportion of Washington state resident applicants relative to the total number of applications has trended downward annually due to increased applicants from out-of-state residents. In 2021, for example, Washington residents represented 15.5% of DVM applicants and this decreased to approximately 8% in 2025.

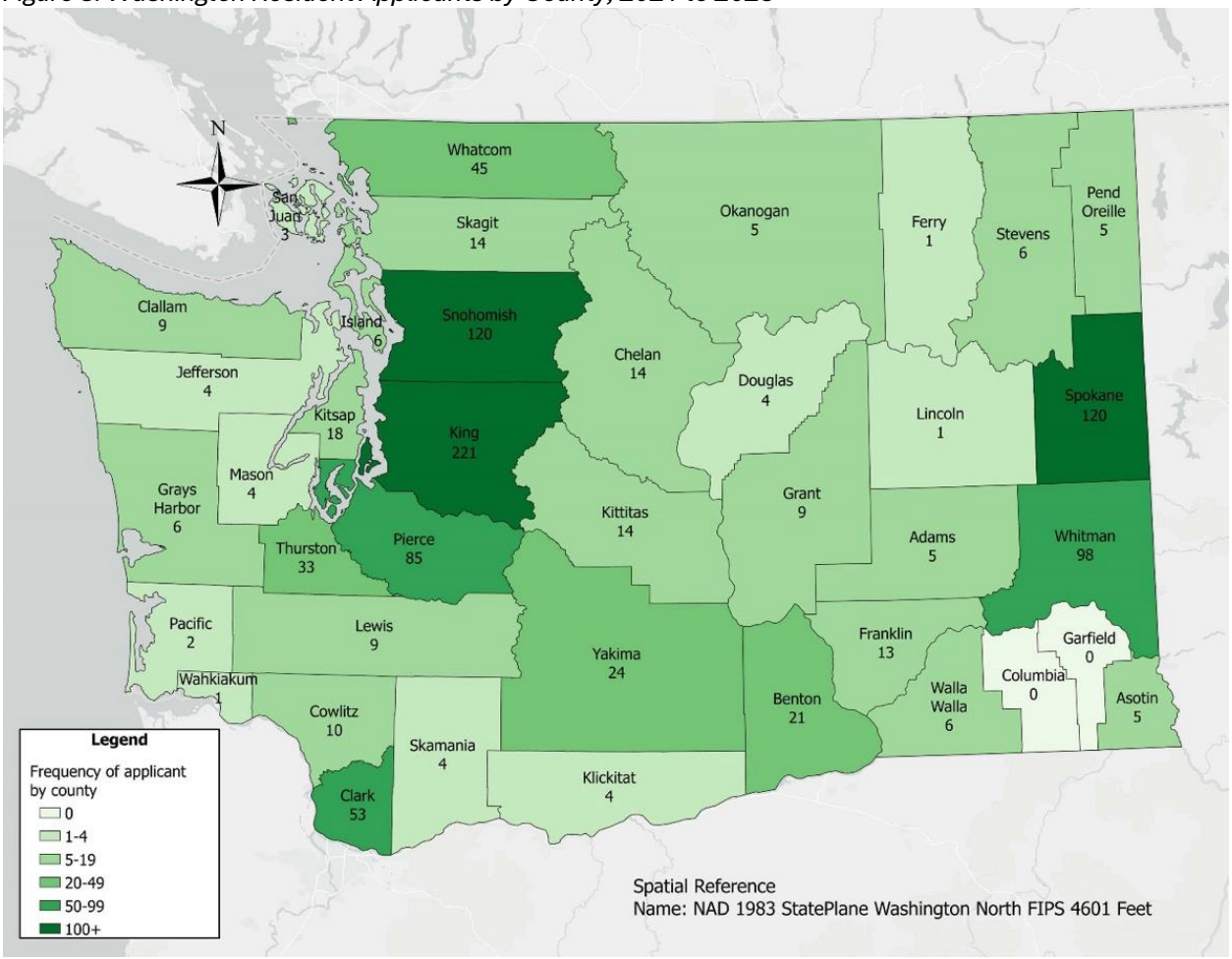
Figure 2: Total Number of DVM Applicants by Residency, 2021 to 2025



Washington-Resident Applicants by County

To better understand where in-state applicants resided in Washington, Figure 3 displays a county-level map of the state, color-coded by the frequency of applicants from each county.

Figure 3: Washington Resident Applicants by County, 2021 to 2025

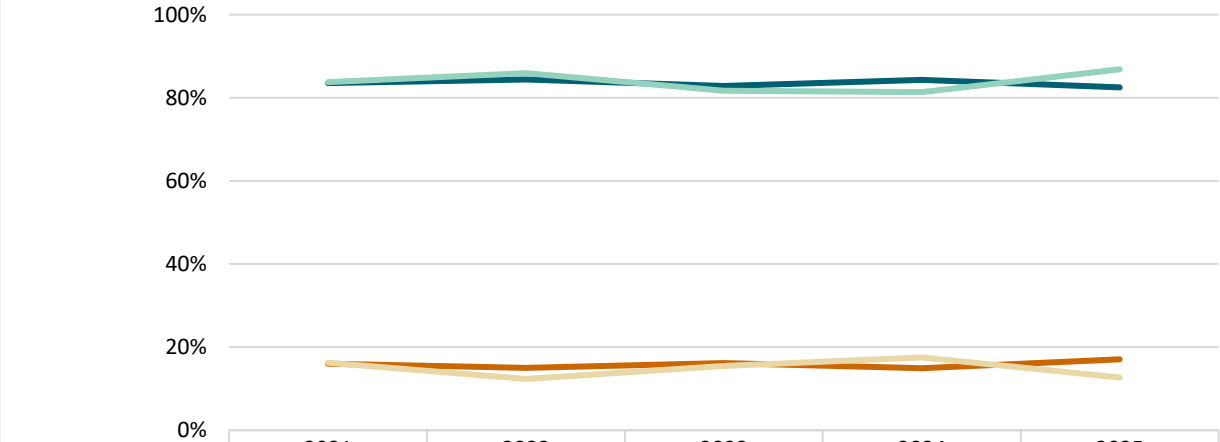


Applicants were heavily concentrated in the state's most urban counties, including King, Snohomish, and Spokane counties. On the other end of the continuum, many of Washington's rural counties produced fewer than 5 applicants to the College's DVM program over the 5-year period examined, averaging less than one per year. These included the following 12 counties: Garfield, Columbia, Ferry, Lincoln, Douglas, Klickitat, Skamania, Jefferson, Mason, San Juan, Pacific, and Wahkiakum counties. An additional 11 rural counties averaged fewer than 2 applicants per year, highlighting the lack of applicants from these more sparsely populated regions of the state.

Gender Distribution of Applicants

Women were overrepresented in the applicant pool—a pattern that mirrors national data (McCullock et al., 2025) and reflects what has long been termed the "feminization" of the profession (Lincoln, 2010). In total, 84% of applicants identified as female (*n* = 8,679), compared with 16% who identified as male (*n* = 1,646).[19] When the gender distribution of applicants was disaggregated by Washington State residency, the pattern remained consistent (see Figure 4).

Figure 4: Gender Distribution of DVM Applicants by Residency, 2021 to 2025



	2021	2022	2023	2024	2025
Female	84%	84%	83%	84%	83%
Female WA	84%	86%	82%	81%	87%
Male	16%	15%	16%	15%	17%
Male WA	16%	12%	15%	18%	13%

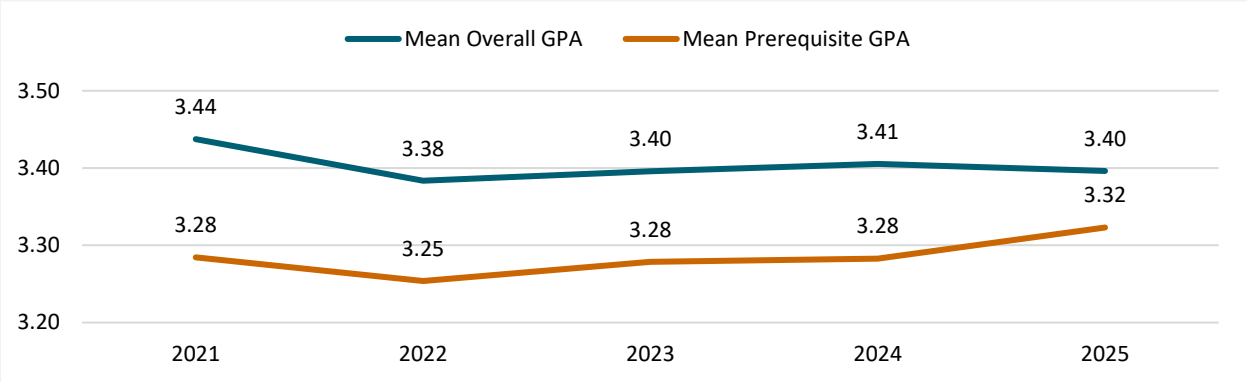
Experience and Educational Background

The application screening process considers a series of success indicators that academic reviewers evaluate in making admissions decisions.[20] This includes the applicant's overall GPA and a review of the applicant's performance in their prerequisite coursework. Prerequisite courses comprise a total of 65 graded undergraduate credit hours, the majority of which are math and science classes. Student performance in these specialized classes is heavily scrutinized as a potential predictor of persistence in the DVM program.

[19] Among total responses, 59 applicants declined to report their gender; nine applicants selected "X."
[20] https://hub.wsu.edu/dvm-admissions/admissions-decisions/

The mean applicant GPA was 3.40[21] on a 4.0 scale across all five years, ranging from 3.39 to 3.44. The mean applicant prerequisite GPA was 3.29 across all five years, ranging from 3.25 to 3.32. Visual inspection of GPA data by year revealed two interesting trends, presented in Figure 5. First, the mean overall GPA appears to decrease over time, with a sharper decline in 2022 that corrects in 2023 and then remains relatively stable in the subsequent years. Applicants' mean prerequisite GPA similarly declined in 2022 but then increased from 2024 to 2025.

Figure 5: Applicants' Mean Overall and Prerequisite GPA by Year, 2021 to 2025



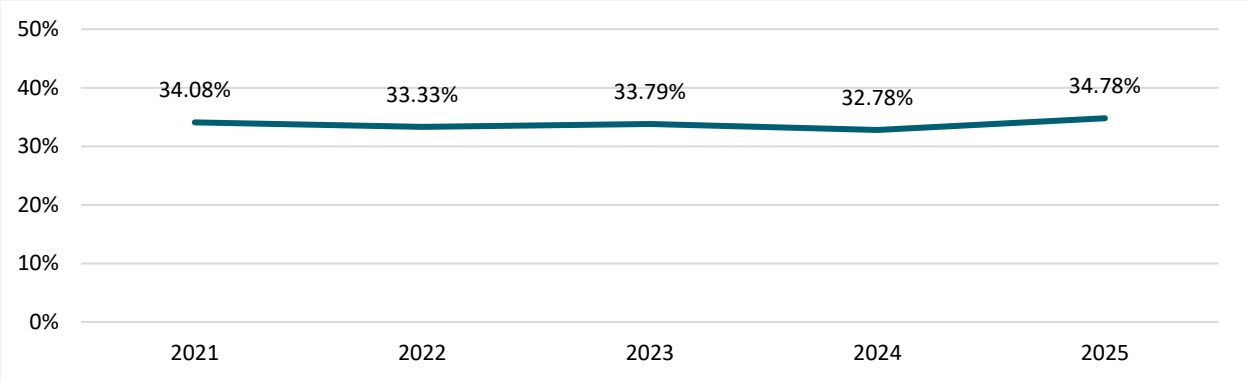
In addition to a strong academic background, reviewers evaluate applicants on seven distinct categories or "areas" of experience outside the classroom learning environment to garner a more comprehensive and well-rounded view of their "skills, knowledge, and commitment to the veterinary field."[22] Admissions data provided by the CVM included values for six of these seven categories: veterinary, animal, employment, extracurricular, research, volunteer and community service.

Nearly all applicants reported some prior veterinary experience (*n* = 10,348, 99.6%) and the overwhelming majority reported prior experience in animal-related activities (*n* = 9,307; 89.6%). Several of the remaining experience categories were well-represented among applicants. Approximately three-quarters of applicants reported extracurricular involvement (*n* = 7,615, 73.3%), 72.9% reported prior employment (n = 7,577), and 56.3% of applicants had been involved in volunteer and community service activities (*n* = 5,847). About half of all applicants disclosed relevant experience in a research setting (*n* = 5,239, 50.4%).

While applicants are not required to have a degree in animal sciences, this major is routinely advised for undergraduate students who express interest in a veterinary medicine trajectory because it typically fulfills the required prerequisite courses, provides foundational science knowledge, and often features experiential learning that is desirable for positioning these students to perform well upon entry into the DVM program. Slightly more than one-third of all applicants had an undergraduate degree in animal sciences, and this remained relatively stable from 2021 to 2025 (see Figure 6).

[21] *n* = 10,129 accounts for 268 cases with missing data on overall GPA.
[22] https://hub.wsu.edu/dvm-admissions/apply/non-academic-requirements/experience-categories/

Figure 6: Percentage of DVM Applicants with a B.S. in Animal Science by Year, 2021 to 2025



Professional Career and Educational Trajectory

In their admissions materials, applicants specified their post-graduation career trajectory plans (career intent). Related to their broader professional goals, applicants also report the type of animal species they are primarily interested in focusing on during their veterinary education (e.g., equine, bovine, small ruminant, small animal, wildlife). Beginning in 2023, applicants were also asked to report on a *general area of interest*, which introduced new response categories for data analysis (e.g., agricultural/food animal and mixed animal), and are particularly useful for the present study.

Figure 7: Post-Graduation Career Intent by Year Among All Applicants, 2021 to 2025

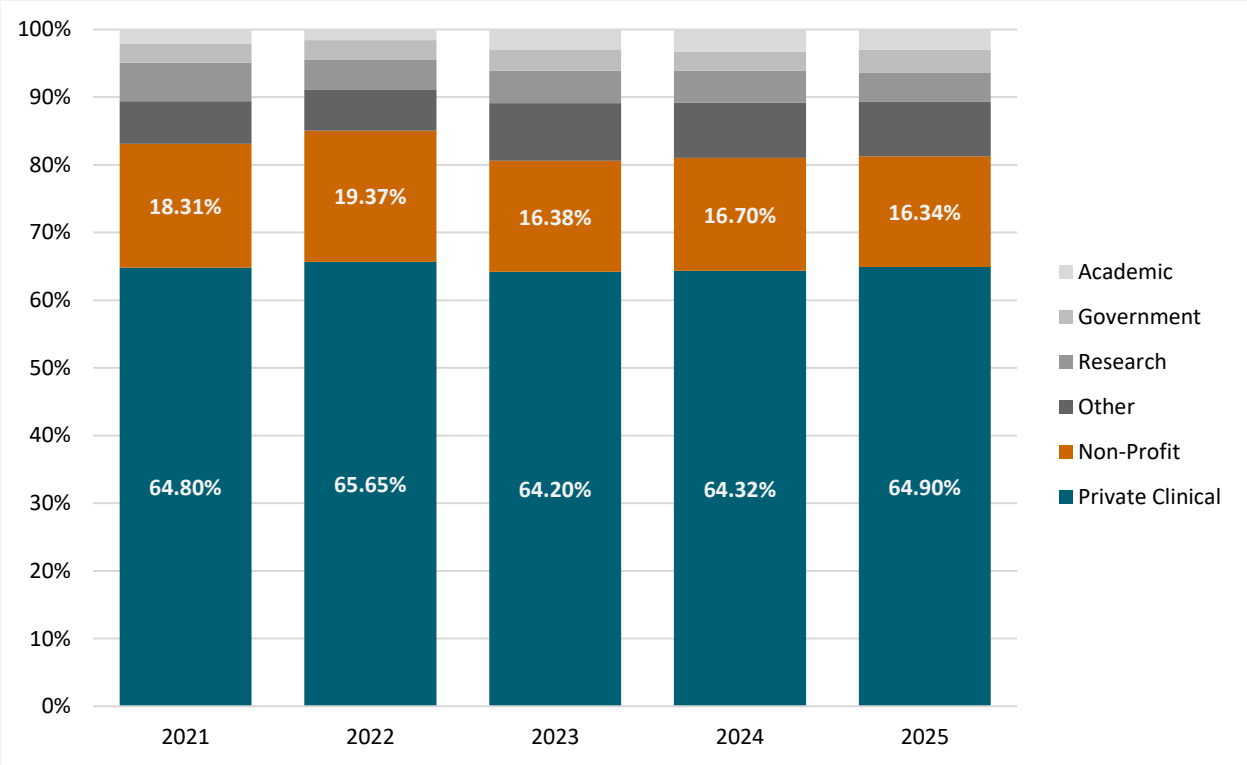
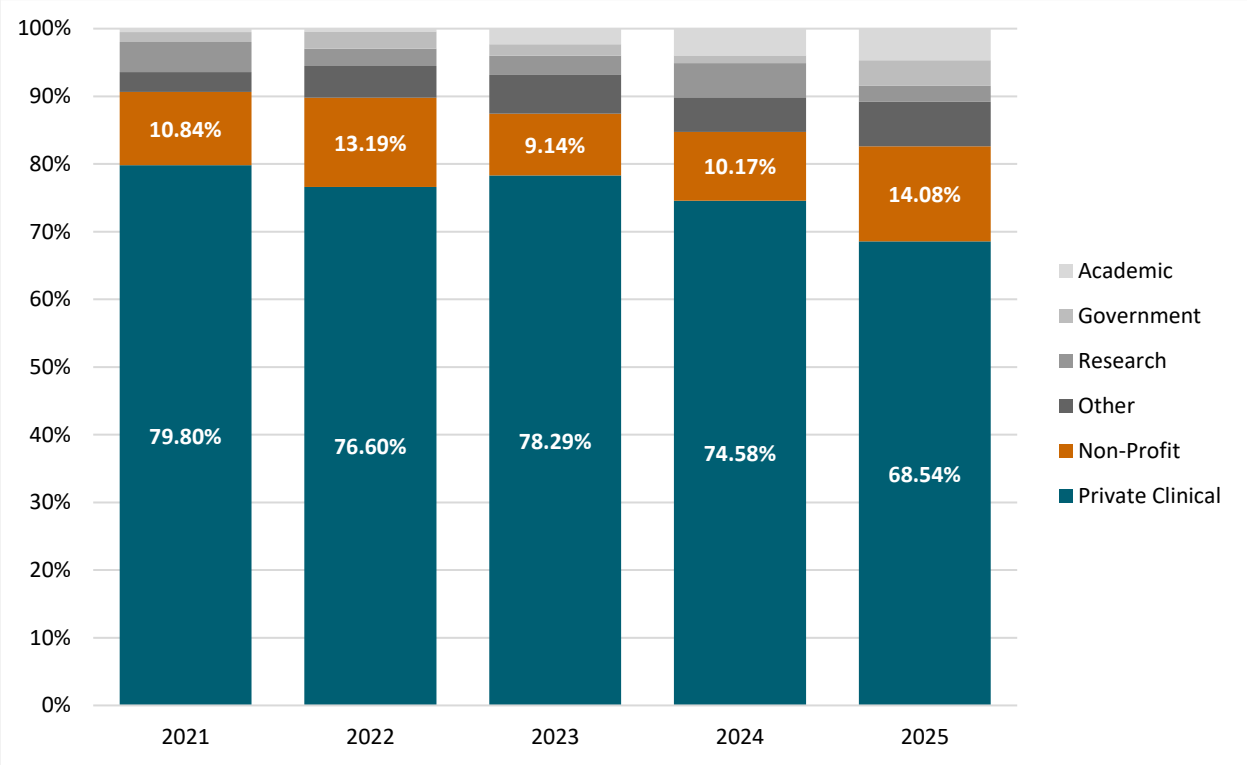


Figure 7 presents post-graduation career plans as reported by the total population of DVM applicants. The majority of applicants reported their desire to practice veterinary medicine in a private clinical setting, and

this was consistent across all five years of data. The second most frequently cited career trajectory was professional service in the non-profit sector, though the distribution of responses has trended slightly downward to 16.34%, from a high of 19.37% in 2022.

Data for the subsample of Washington resident applicants revealed a similar pattern for their post-graduation plans (see Figure 8). Across the five-year period, applicants consistently identified private veterinary clinical practice as their most preferred professional setting, but beginning in 2023, this declined from 78% to approximately 69% by 2025. The second most desirable career was identified as professional work in the non-profit sector. While there were shifts over time, the 5-year trend remained relatively consistent, fluctuating between approximately 11% to 14%. The decline in private clinical practice share among WA residents may indicate diversifying career interests within the in-state pipeline, although the absolute numbers remain small enough that year over year variation should be interpreted with caution.

Figure 8: Post-Graduation Career Intent by Year Among Washington Resident Applicants, 2021 to 2025



Across the five-year period, the distribution of applicant interest was consistent across categories (see Figure 9). The majority of applicants reported a preference for small animals. A focus on wildlife was the second most popular category among applicants ranging from 11 to 14.5%, followed by applicant interest equine species, which hovered between 9 and 11%. Agricultural animal categories (bovine, small ruminant, other food/fiber species, camelids) each remained below 6% and collectively accounted for less than 15% of primary species focus by applicants each year.

Figure 9: Primary Focal Species of Interest by Year, All DVM Applicants, 2021 to 2025

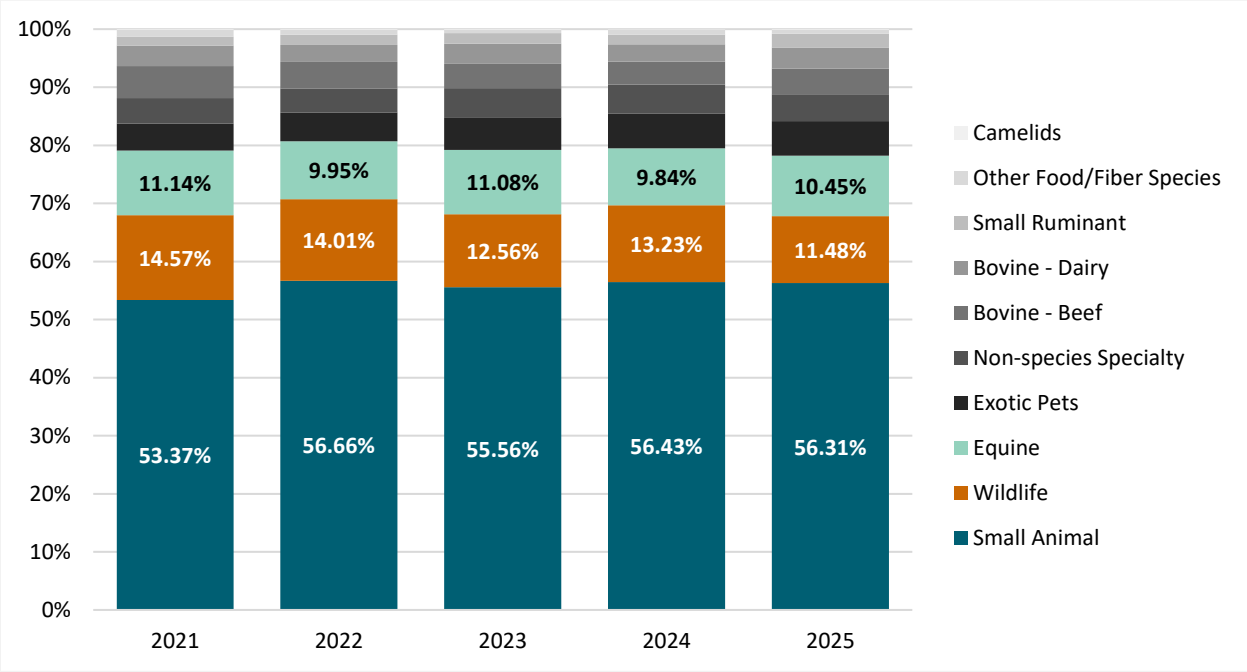
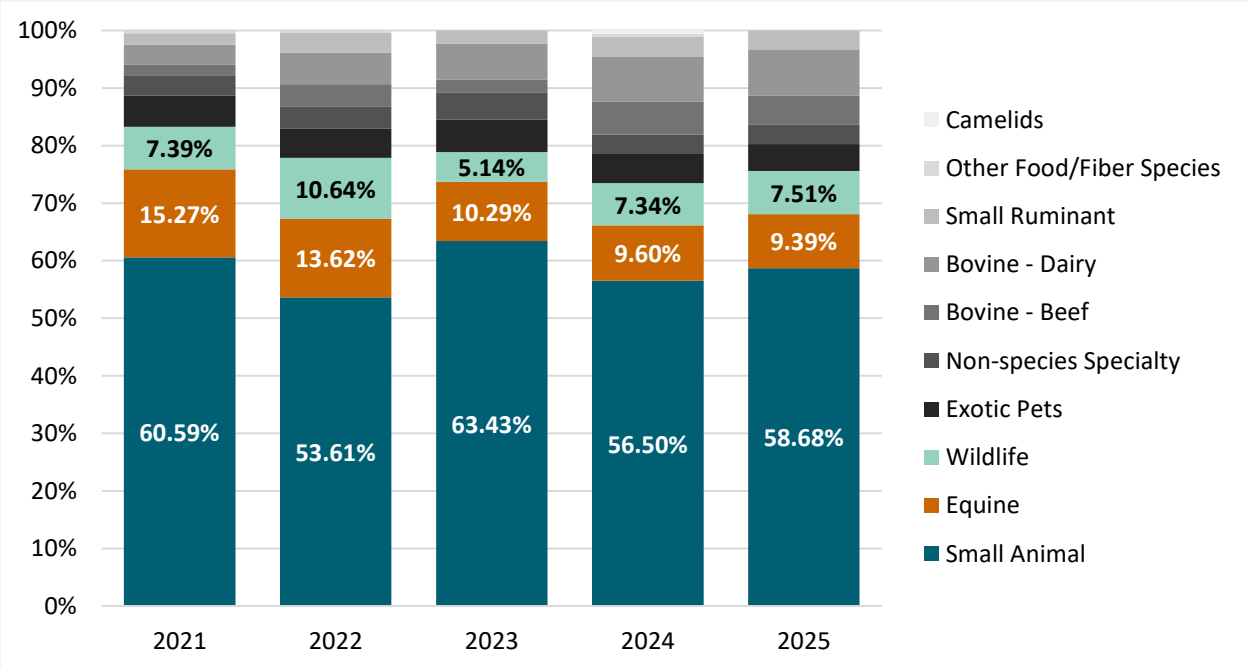


Figure 10 presents the same applicant interest data for Washington residents and revealed a distribution that mirrors that of the national applicant pool, though interest in wildlife was somewhat attenuated.

Figure 10: Primary Focal Species of Interest by Year, Washington Resident Applicants 2021 to 2025



As mentioned above, the College began collecting additional applicant information pertaining to area of interest beginning in 2023 (i.e., mixed animal and agricultural/food animal interest). Figure 11 reports

findings from these newer categories and is particularly relevant to the present study's focus on large animal veterinarian shortages. Mixed animal interest represents an interest in *both* small and large animal species and aligns with the caseloads of the typical rural veterinary practices in Washington. Interest in this category was the most prevalent among applicants across all three years, ranging from approximately 36-37%. Primary interest that focused exclusively on agricultural/food animals represented approximately 6-7% of additional applicants annually. Moreover, Figure 12 shows that this pattern was largely the same among Washington-resident applicants.

Figure 11: General Area of Interest by Year, All DVM Applicants, 2023 to 2025

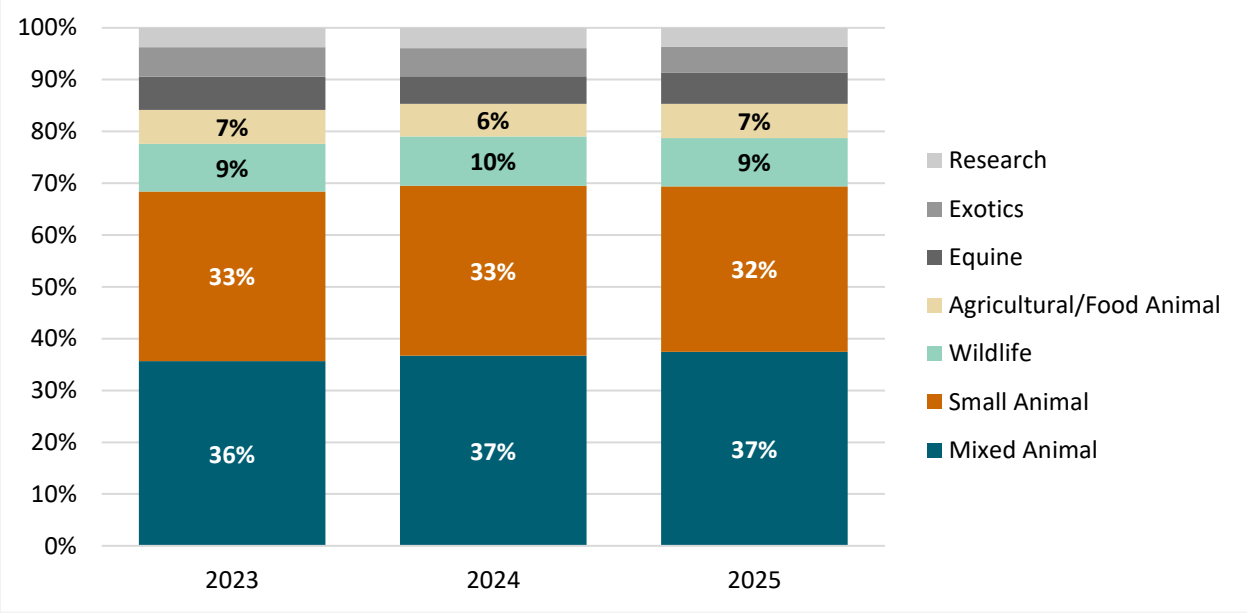
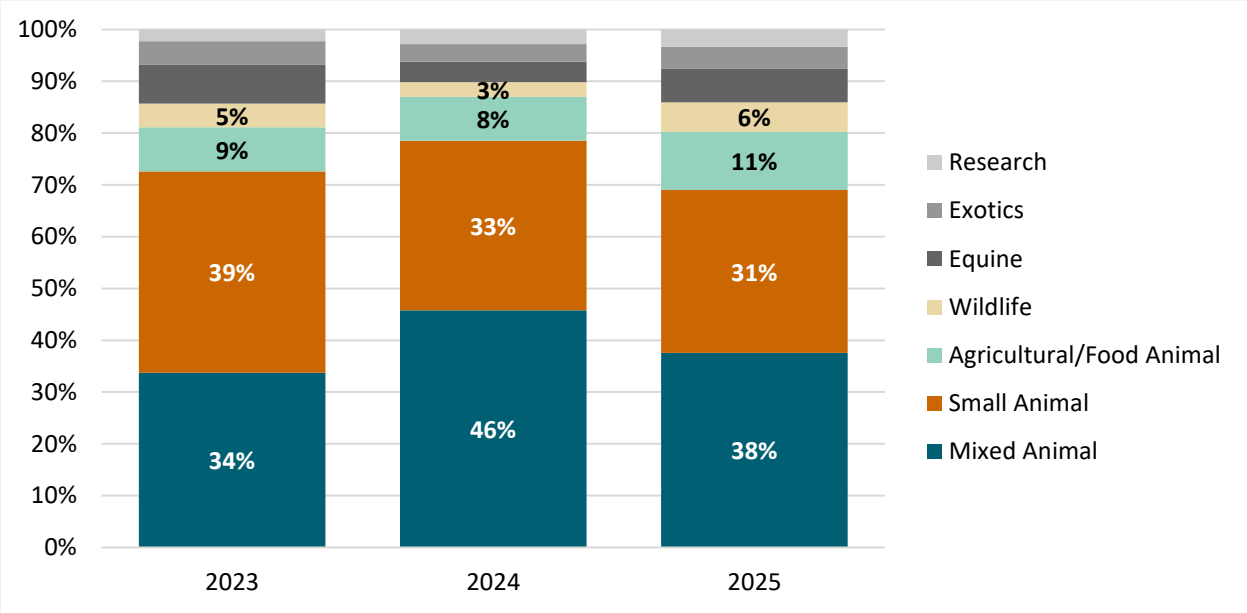


Figure 12: General Area of Interest by Year, Washington Resident Applicants, 2023 to 2025



Logistic Regression Analysis of the Admission Decision

To understand how the above factors affected the College's admission decision, a binary logistic regression model was estimated. This model examined the independent effect of each factor on the relative odds of admission because all factors are simultaneously being considered in the analysis. Table 6 displays the results of this analysis of the full population of applicants during the five-year period (2021-2025).

Table 6: Predictors of Admission into WSU's DVM Program (N = 10,336)

Applicant Characteristics	B	S.E.	Odds
Primary Species of Interest			
Small Animal (ref. group)	---	---	---
Bovine - Beef	.431	.199	1.539
Bovine - Dairy	.485	.236	1.625
Equine	.462	.152	1.587
Exotic Pets	.067	.245	1.069
No Species Specialty	.401	.233	1.493
Other Food/Fiber Species	.341	.657	1.406
Small Ruminant	.443	.333	1.557
Wildlife	-.376	.211	.687
Career Interest			
Private Practice (ref. group)	---	---	---
Academic Practice	-.306	.408	.737
Government Practice	.322	.312	1.379
Research	.766	.236	2.152
Other	.094	.211	1.098
Non-Profit	.148	.174	1.160
Applicant Pool			
Non-Resident/Non-Partner State (ref. group)	---	---	---
Washington Resident	3.385	.133	29.508
Prerequisite GPA (tenths)	.347	.171	1.415
Undergraduate Academic Major			
Other (ref. group)	---	---	---
B.A. in Animal Science	.121	.104	1.128
Prior Experience Hours (per 1000)	.063	.016	1.065
Applicant Age	-.019	.017	.981
Applicant Race/Ethnicity			
All Other (ref. group)	---	---	---
White	-.139	.145	.870
Applicant Gender			
Female (ref. group)	---	---	---
Male	-.034	.135	.966

Note: Model includes control measures (not shown) for applicant pool type to capture admission agreements pertaining to students who qualify under the Western Interstate Commission for Higher Education's (WICHE) Professional Student Exchange Program (PSEP) and the Washington-Idaho-Montana-Utah regional program (WIMU). Due to the use of population data, and therefore no need to infer from a sample to a larger population, significance levels are not indicated in the table.

First, the primary driving factors for admission were academic performance and Washington residency. Each tenth-of-a-point increase in prerequisite GPA increased the odds of admission by approximately 1.4 times. Findings also revealed that Washington State residents who applied to the program had odds of

admission that were approximately 30 times greater than non-resident applicants (who did not qualify under existing admissions agreements with partner states/institutions).

Table 6 also indicates that admission to the DVM program, though to a much lesser degree, was influenced by applicants' primary species of interest as well as their career interest. Compared to applicants whose primary species of interest was small animals (e.g., cats and dogs), those whose primary interest was bovine (either beef or dairy cattle), equine, small ruminants, other food/fiber species, and no-species specialty all had odds of admission that were approximately 1.4 to 1.6 times greater. Only applicants whose primary species of interest was wildlife had lower odds of admission than those whose interest was in small animals. Finally, career interest had comparatively smaller effects on admission decisions, with the exception that applicants interested in a research career demonstrated odds of admission that were approximately twice as high as those interested in private clinical practice.

Table 7: Predictors of Admission into WSU's DVM Program, Washington Residents (N = 942)

Applicant Characteristics	B	S.E.	Odds
Primary Species of Interest			
Small Animal (ref. group)	---	---	---
Bovine - Beef	.678	.475	1.969
Bovine - Dairy	.696	.364	2.005
Equine	.701	.286	2.016
Exotic Pets	.515	.396	1.674
No Species Specialty	1.012	.482	2.751
Other Food/Fiber Species	1.604	1.959	4.971
Small Ruminant	.696	.523	2.006
Wildlife	-.921	.438	.398
Career Interest			
Private Practice (ref. group)	---	---	---
Academic Practice	.251	.660	1.285
Government Practice	-.306	.666	.737
Research	.930	.522	2.535
Other	.421	.394	1.523
Non-Profit	.600	.326	1.822
Prerequisite GPA (tenths)	.398	.322	1.488
Undergraduate Academic Major			
Other (ref. group)	---	---	---
Animal Science	.225	.188	1.252
Prior Experience Hours (per 1000)	.034	.034	1.035
Applicant Age	.005	.030	1.005
Applicant Race/Ethnicity			
All Other (ref. group)	---	---	---
White	.067	.250	1.069
Applicant Gender			
Female (ref. group)	---	---	---
Male	-.231	.259	.794

Note: Due to the use of population data, and therefore no need to infer from a sample to a larger population, significance levels are not indicated in the table.

Table 7 reports the findings of the same analysis but restricted to Washington state residents who applied to the DVM program. Overall, the findings were similar. Prior academic performance was a strong predictor of admission. For every tenth-of-a-point increase in prerequisite GPA, applicants' odds of

admission increased by approximately 1.5 times. Species interest also played a similar role, where applicants whose primary interest focused on agricultural animals were more likely to be offered admittance as compared to those interested in small animals (e.g., cats and dogs).

Moreover, those interested in wildlife were less likely to be offered admittance. Regarding career interest, the findings among the Washington applicants did deviate somewhat from the overall population. Relative to applicants interested in private clinical practice, only those interested in government practice exhibited reduced odds of admittance; all other career interests increased the odds of admission. In addition, students who were male faced reduced odds of admittance relative to those who were female.

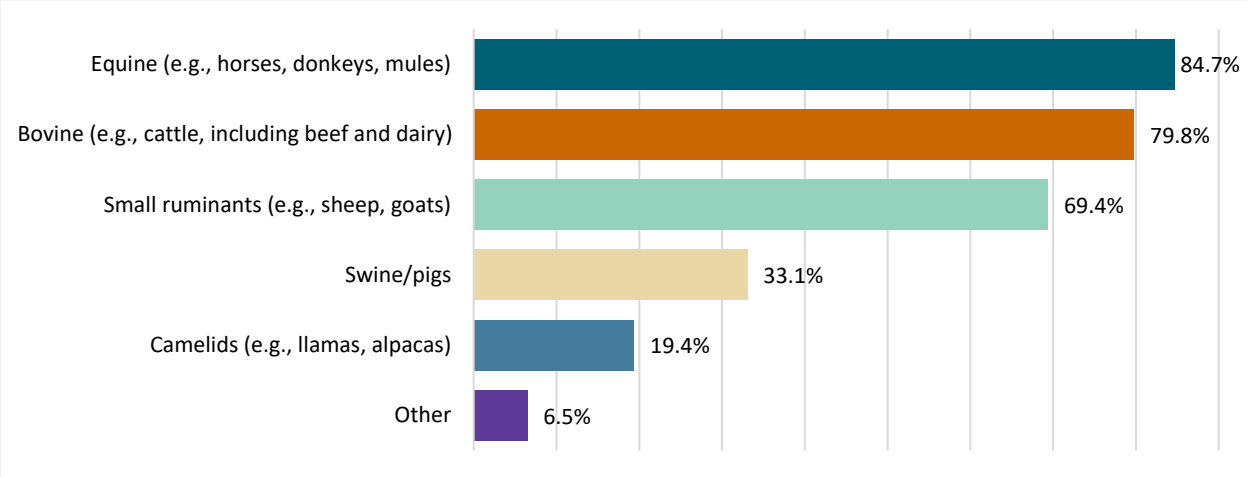
DVM Self-Report Survey Findings on the Veterinary Pipeline

Data from the self-report survey of current DVM student participants (*n* = 229) were used to augment conclusions about the pipeline of potential veterinary professionals generated from the work group meetings and the analysis of admissions data presented above. As it pertains specifically to the pipeline of large animal veterinarians and prospective students entering veterinary school, this section presents select findings from the survey data that speak directly to background characteristics among current students (e.g., pre-DVM experience with large animals and rural residential settings) and their professional aspirations, specifically related to their desired career trajectory, their species area of interest, and whether these interests have changed during their time in WSU's DVM program.

Prior Large Animal Experience

Survey participants were asked if they had prior "hands-on experience with the care of any large animals or agricultural/food animals before entering the DVM program?" Nearly three-quarters responded affirmatively (*n* = 125; 74%). Among those with prior exposure to large animals, experience was largely concentrated among the equine, bovine, and small ruminant categories (see Figure 13).

Figure 13: Distribution of Prior Large Animal Experience Among DVM Survey Participants (n = 125)



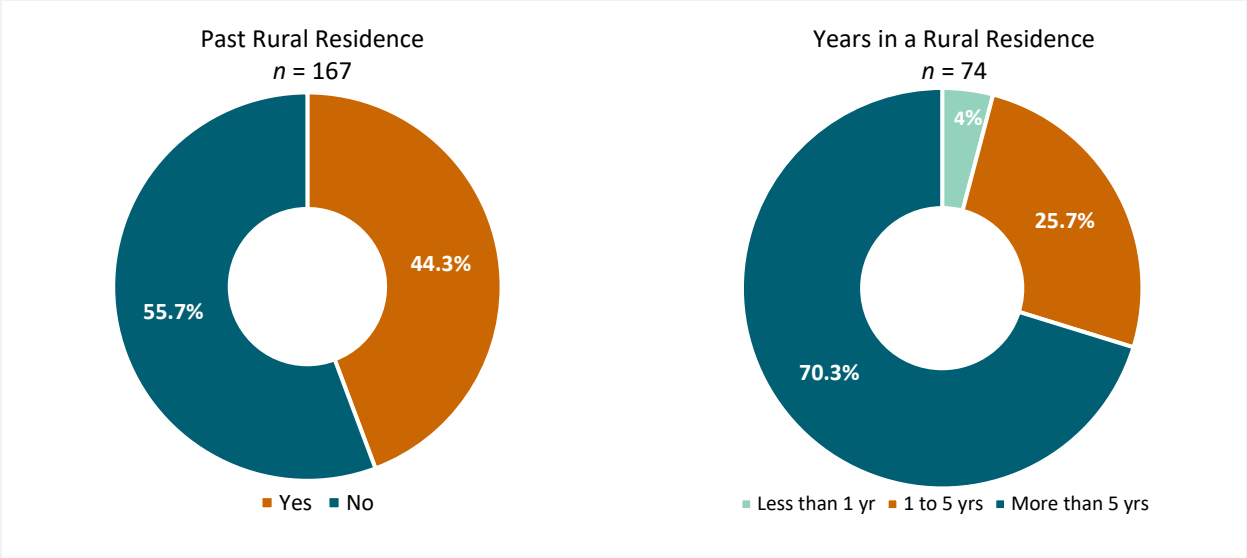
Note: these categories were not mutually exclusive; participants were instructed to "select all that apply."

Rural Residential Background

Given that large animal veterinarians typically practice medicine in rural areas or in communities adjacent to rural areas, participants were also asked about their prior experience residing in a rural area, "have you ever lived in a rural area (open countryside or town with approximately 2,500 or fewer people) prior to beginning your college career?" As can be seen in Figure 14**,** among the 72.9% of participants who responded to this item (*n* = 167), slightly less than half responded affirmatively (*n* = 74, 44.3%), and

among those individuals, nearly three-quarters reported living in a rural area for more than 5 years (*n* = 52, 70.3%).

Figure 14: DVM Survey Participant Rurality



Planned Career and Species Interests

To understand initial interests among students when they first entered the DVM program, survey participants were asked to identify their preferred career path and species interests. Table 8 presents a distribution of these responses. The majority (*n* = 163, 84%) expressed initial plans to enter private clinical practice. The distribution of species interests was more varied across the six categorical response options. A preference for practicing with mixed animals (including large animals) was the single largest category, representing more than one-third of participants (*n* = 73, 38%), followed by an interest in working with small animals (*n* = 63, 32%). The categories for agricultural/food animals (*n* = 23; 12%), equine (*n* = 20; 10%), wildlife (*n* = 11, 6%), and mixed without agricultural animals (*n* = 4, 2%) accounted for the remaining participants' initial species preferences.

Table 8: Distribution of DVM Participants' Initial Career and Species Preferences (n = 194)

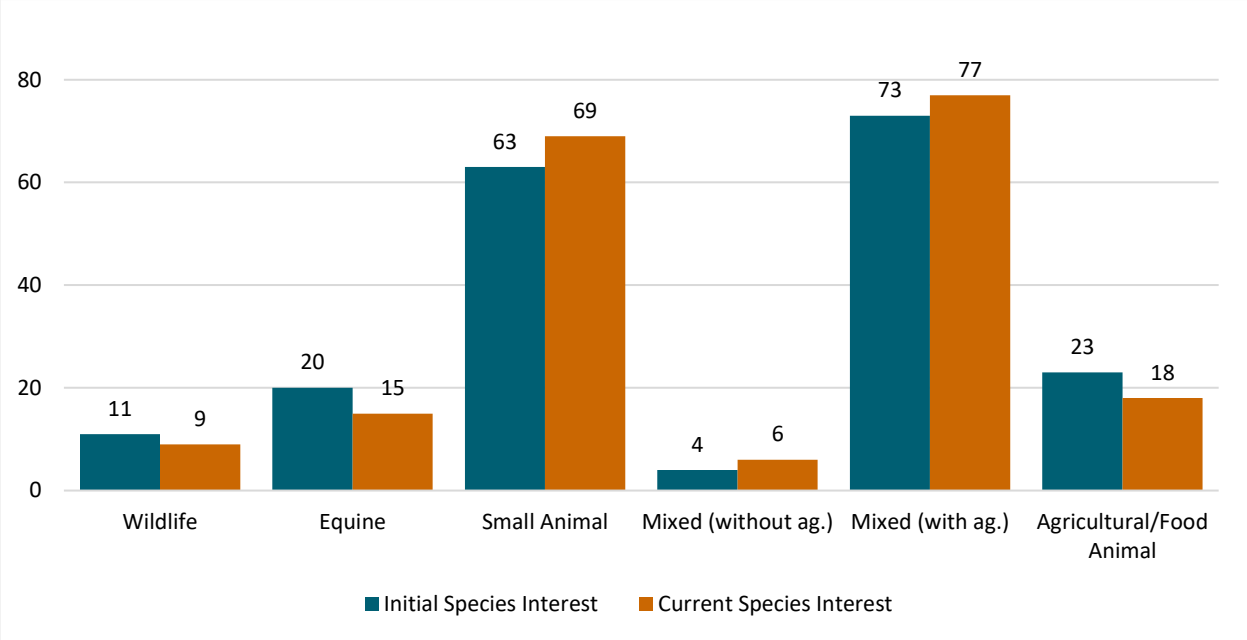
Category	Responses	Frequency	Percentage
Initial Preferred Career Path	Private Clinical Practice	163	84%
n = 194	Non-Profit Shelter Practice	11	6%
	Research, Government, or Academic	10	5%
	Other	10	5%
Initial Preferred Species	Mixed (with ag.)	73	38%
n = 194	Small Animal	63	32%
	Agricultural/Food Animals	23	12%
	Equine	20	10%
	Wildlife	11	6%
	Mixed (without ag.)	4	2%

To garner a snapshot of shifting interests during their graduate training, participants were also asked whether their career and species preferences had changed at any point during their academic training in

the DVM program at WSU. Only 9% (*n* = 17) reported career plan changes; this predominantly reflected a shift to private clinical practice from one of the other professional settings. Nearly one-quarter of participants reported a shift in their species preference (n = 42, 22%). Among those who changed their species preference, just under half (*n* = 17, 40%) reported a current interest in working with mixed animals (including large animals), and 26% (*n* = 11) shifted their initial species interest to a current focus on small animals.

Figure 15 presents the distribution of species interest upon entry into the program (as reported in Table 8) and this is compared to the distribution of species interest at the time of data collection. A few findings are noteworthy. First, the number of survey participants who were initially interested in wildlife, equine, and agricultural/food animal species declined so there are fewer current students who expressed primary interest in these species. Second, the number of students currently interested in small animal and mixed animal (with and without agricultural animals) species increased from when they first entered the DVM program.

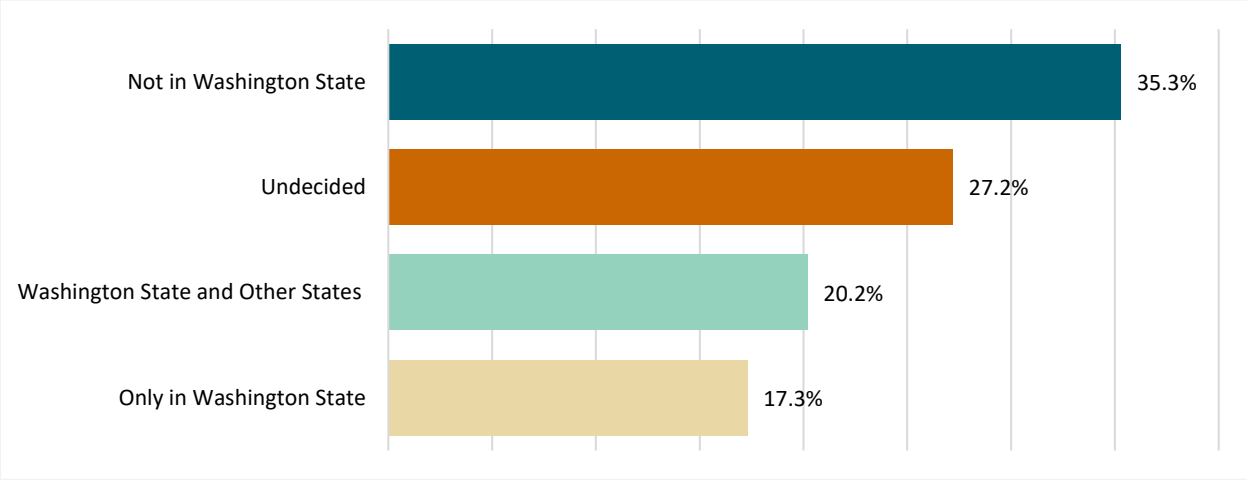
Figure 15: Distribution of DVM Survey Participants' Initial and Current Species Interest (n = 194)



Planned Geographic Area of Professional Practice

In assessing the large animal veterinary pipeline and the need to recruit and retain professionals for veterinary practice in Washington State, participants were asked about their plans after graduation and for professional practice (Figure 16). Among the 76% of participants who responded to this question (*n* = 173), only 17.3% noted plans to work exclusively in Washington (*n* = 30). Nearly one-fifth (*n* = 35, 20.2%) said their post-graduation plans involved practicing veterinary medicine "in Washington and other states," while more than one-third indicated plans to leave Washington (*n* = 61, 35.3%) and the remaining 27% were undecided (*n* = 47).

Figure 16: Planned Geographic Area of Professional Practice, DVM Survey Participants (n = 173)



Open-ended responses provided additional detail to better understand participants' geographic preferences. Among those who reported plans to practice in "Washington and other states" (*n* = 35), most (*n* = 33) provided additional qualitative feedback, presented in Table 9 and ordered by descending frequency. Eight of these participants reported a single state; the remaining responses reported multiple states, and in some instances, described regions or areas where they have interest and/or are willing to practice veterinary medicine. Of note, nearly 85% reported a preference or willingness to work in Idaho (statements included "possibly Idaho," "will travel to Idaho," and "mainly Idaho"). Oregon and Montana were also frequently cited as desirable or planned locations for post-graduation professional practice. Several participants noted their desire to meet an existing deficit or to work in an area with opportunities for their species of interest. Two participants explicitly mentioned prioritizing the job market and opportunities for securing employment.

> "I'm very open to going anywhere there is need but have considered the following places where there would likely be more food animals…"
>
> "Mainly Idaho, but its bordering states as well. Also interest in travel to help in other remote communities."

Table 9: Qualitative Responses for Professional Practice Locations "in Addition to Washington" (n = 33)

Location	Frequency	Percent
US State		
Idaho	28	84.8%
Oregon	14	42.4%
Montana	10	30.3%
Other[a]	9	27.3%
US Region		
Pacific Northwest	3	9.1%
West Coast	1	3.0%
Midwest	1	3.0%

[a] Includes Alaska, Arizona, California, Colorado, Hawaii, Michigan, New Mexico, and Wyoming.

Focus Group Findings on the Veterinary Pipeline

Focus group participants identified challenges within the veterinary school pipeline that affect both the number of students pursuing veterinary education (with a focus on large animal/agricultural animals) and the likelihood that those students will ultimately enter large animal, rural veterinary practice. Discussions centered on two primary themes: 1) financial realities that discourage entry into the veterinary education pipeline, and 2) the need to strengthen recruitment of students from rural and agricultural communities. Table 10 provides a list of these themes and their summary content.

Table 10: Focus Group Findings on the Veterinary Pipeline

Focus Group Content Themes
Financial Realities Discourage Entry into the Veterinary Education Pipeline
• Cost of Veterinary education • Student debt burden carried by practicing veterinarians • Lower compensation/salaries in rural, large animal practice • Declining agricultural profitability • Perceptions of financial instability
Recruitment of Students from Rural and Agricultural Communities
• FFA and 4-H as fruitful recruitment pathways • Prospective students with agricultural backgrounds/experience • Concerns about admissions criteria • Recruitment of students from rural communities

Financial Realities Discourage Entry into the Veterinary Education Pipeline

Focus group participants consistently described financial considerations as one of the earliest barriers affecting the large animal veterinary school pipeline. Participants emphasized that concerns about a combination of high veterinary education costs, substantial student debt burden, their future earning potential, and the financial stability of rural practice have tended to discourage interest in large animal veterinary practice before students even enter veterinary school. Of note, these barriers also influence their selection of general species interests during their DVM training and whether they will ultimately pursue careers in large animal, rural practice. The burden of veterinary school debt is often considered alongside the economic realities of rural and large animal practice, where salaries cannot compete with those available in small animal practice located in larger cities and metropolitan settings.

Practitioners also discussed broader economic conditions affecting agricultural communities, including high property and business costs and limited profitability within some agricultural sectors. These factors were viewed as contributing to the perception that large animal veterinary medicine is less financially attractive as a career path for new DVM graduates. According to focus group participants, prospective students who are aware of these considerations may evaluate the financial risks associated with veterinary education and decide that the return on investment is insufficient, particularly when compared with alternative, more financially lucrative career opportunities.

Discussion also focused on potential strategies to offset these financial barriers. Participants suggested that loan repayment programs, salary incentives, and additional state investment may help to reduce the financial burden associated with veterinary education and make large animal veterinary careers more attractive for prospective students. Some participants also emphasized the importance of partnerships with agricultural industries to strengthen workforce development efforts and improve the competitiveness of large animal veterinary practice in Washington State.

Recruitment of Students from Rural and Agricultural Communities

A second major theme associated with the veterinary education pipeline concerned the recruitment and admission of students who are most likely to pursue careers in rural and large animal veterinary medicine. Participants expressed concern that existing recruitment and admissions processes may not adequately identify or support students from agricultural backgrounds who may be well-positioned for success in a large animal veterinary medicine career. Concern was expressed that students whose practice experience and commitment to rural practice may not be fully reflected in traditional academic metrics like standardized test scores and cumulative GPAs.

Several participants discussed admissions criteria and GPA expectations, noting that some students with extensive background experience in agricultural settings and with food animals and a strong interest in rural, large animal veterinary practice may not perceive themselves as competitive DVM applicants and therefore, may not apply to the DVM program at WSU. Focus group members emphasized the importance of identifying these potential students, even when their undergraduate records may differ from more traditional applicants.

Participants highlighted the need to strengthen outreach efforts within rural and agricultural communities. Organizations such as FFA and 4-H were identified as important pathways for introducing students to veterinary medicine and encouraging consideration of veterinary careers at an earlier stage in their academic/educational development trajectory. Participants also suggested that stronger recruitment efforts targeting rural and agricultural populations could help increase the number of applicants with existing ties to agricultural communities and a demonstrated interest in large animal practice.

Related discussions focused on the demographic composition of veterinary student cohorts and the importance of recruiting students whose backgrounds and experiences align with the workforce needs of rural Washington. Participants suggested that students raised in agricultural and rural communities may be more likely to return to those communities following graduation, thereby strengthening the long-term large animal veterinary workforce.

Key Takeaways about the Pipeline of Washington's Prospective DVM Students

Based on the collective findings from the work group, the analyses of DVM admissions and student survey data, and focus groups conducted with practicing rural, large animal veterinarians, below is a summary of key takeaways regarding Washington's Pipeline of Prospective DVM students.

- WSU's DVM program has received a healthy and substantially growing number of applicants, indicating high levels of national interest in the program; this included 10,393 applicants between 2021-2025.
- The applicant pool was heavily skewed toward female applicants (approximately 84% female, 16% male) and is consistent with a decades-long, nationwide trend among those applying to DVM programs.
- Among Washington residents, applicants were heavily concentrated within urban counties; rural counties often produced fewer than one applicant per year on average.
- Although interest in agricultural animals was not dominant among applicants (approximately 6-7%), when combined with applicants interested in mixed animals (which includes large animals) the proportion of applicants was much greater; among Washington residents in 2025, for example, this proportion grew to nearly half of all applicants (48.9%).
- Nearly three-quarters of WSU's DVM students had some prior experience with large animals and approximately half had prior experience living in a rural area.
- Considering the prior two points, a significant portion of the applicant pool exhibited backgrounds that aligned with potential mixed/large animal practices in rural areas.

- Despite the above point, however, findings stemming from the work group meetings and focus groups indicated considerable barriers to entering large animal, rural veterinary practice; the need for targeted recruitment of applicants from rural/agricultural areas of Washington who may be most willing to return to these areas was identified.
- Work group meetings and focus groups indicated that WSU's DVM program should increase its presence at statewide events focusing on agriculture and large animals.
- Work group members also identified weaknesses in the strength and frequency of recruitment-oriented collaborations between WSU's DVM and Animal Sciences programs; given that Animal Sciences serves as a common feeder program into veterinary medicine, recommendations to enhance these collaborations were made.
- Work group members also identified the need for expanded FFA and 4-H activities geared toward the promotion of large animal medicine specifically, and agricultural animals and settings more generally.

Washington State University's Veterinary School Experience

The experiences of DVM students during their time in veterinary school may be integral for their ultimate career placement. For example, the extent to which veterinary students gain exposure to, and experience with, large animals was identified by the work group as a potential contributing factor to Washington's shortage. Put more directly, the work group indicated that new veterinarians often lack familiarity with large animals and often do not feel comfortable working with them. This may be compounded by the need for practicing alone when operating in a rural setting where many large animals reside. In addition, it was also noted that such experiences are limited in part due to inadequate resources available to Washington State University's DVM program.

Work Group Findings on the Veterinary School Experience

The veterinary school experience plays a central role in shaping whether Washington's future veterinarians are prepared and motivated to enter large animal and rural practice. Work group discussions across multiple sessions identified significant gaps in clinical training infrastructure, faculty capacity, and student support, while also exploring a range of models and approaches that could strengthen the educational experience.

Shortcomings in Clinical Training Infrastructure

Work group members discussed the need for expanded training infrastructure and partnering with private facilities in rural areas that could be leased for training purposes. Members also expressed concern about the state of veterinary technician programs, noting a lack of robust training models suited to large animal practice. The ratio of technicians to veterinarians in this area is approximately one to four, and many technicians are not trained for large animal care. Members noted ongoing confusion about the division of tasks between technicians and licensed practitioners, with the expectation that updated board guidance on task rules would help clarify these boundaries.

Gaps in Faculty Capacity and Opportunities for Experiential Learning

The work group discussed at length the dwindling opportunities for DVM students for hands-on experiences with large animal care. This included conversations about the Field Disease Investigation Unit FDIU program at WSU, which has historically provided students with field-based experience investigating livestock health issues. Members noted that the program had declined in recent years as faculty leadership and funding priorities have shifted, and rebuilding this program could provide hands-on learning opportunities while also supporting producers with low-cost diagnostic and investigative services.

The recent closure of the Large Animal Internal Medicine service was also discussed by the work group in several meetings. Faculty shortages nationwide, difficulty recruiting clinicians willing to take on-call responsibilities, budget constraints, and declining demand (decreased caseload) were all cited as contributing factors at WSU CVM. Members noted that faculty searches are underway but that reopening the service would require the right personnel and a long-term institutional commitment with directed funding from the state. Given this, strategic investment in mixed animal (ag animal and equine) ambulatory services have been expanded to train students in rural, mixed large animal practice. This loss of the in-hospital service has added urgency to broader discussions about clinical capacity.

The work group also discussed the loss of the University of Idaho's Caine Center and the need for a comparable replacement located in Washington State and likely affiliated in some way with WSU. Members emphasized the need for consistent priorities that include strong livestock-focused training, hands-on clinical experience rather than hospital-only models, and the value of mentorship. Rebuilding a similar program would require state involvement and dedicated funding.

Across these discussions, members consistently emphasized that faculty capacity, access to livestock, and clinical training infrastructure are interdependent components of the educational environment and cannot be addressed in isolation.

Strategic Coordination of Large Animal Training Opportunities to Augment the DVM Experience

Work group members emphasized the need for a cohesive strategic plan that addresses agricultural animal education across all four years of the veterinary curriculum, rather than relying on fragmented or short-term solutions. Several members acknowledged that many of these challenges have been recognized for years and that rebuilding meaningful support systems to overcome them would require substantial coordination and resources.

Members noted that adequate case volume and clear objectives are critical to the success of any program that might expand hands-on opportunities for DVM students, and that specific goals, whether related to training, retention, or community services, need to be defined before investing in infrastructure or programming. The group also discussed the importance of maintaining updated contact lists of rural veterinarians to support student placements and externships and noted that adjunct and preceptor roles carry administrative and accreditation considerations that require careful planning.

A Large Animal Certificate Program to Facilitate Increased Competence Among DVM Students

A recurring theme across multiple work group meetings was the potential development of a large animal certificate program modeled in part on Kansas State University's Food Animal Veterinary Certificate program. Administrators of the Kansas program were invited to talk to the work group about how their program works, and work group members examined which elements of the Kansas model might translate to Washington. Notably, KSU has greater faculty capacity, more livestock in the state, and, consequently, more extensive livestock infrastructure. Work group members agreed that Washington's program would likely need to be smaller in scale, relying on a combination of full-time and adjunct faculty, and would need to reflect the state's distinct agricultural profile, which includes fewer large commercial livestock operations and a greater proportion of small-scale and hobby animal ownership.

The work group also discussed the value of student cohort models within any certificate program, noting that peer networks help build professional identity and sustained interest in rural practice. If a certificate program were developed, there would eventually be a network of veterinarians across the state who participated in it together, developing shared experiences related to large animal care, a network of professional connections, and potentially the ability to more easily support each other’s large or mixed animal practices. The work group noted the existence of earlier planning efforts by WSU for a certificate

program that ultimately did not move forward, but this could serve as a foundation for a renewed effort to build a similar program.

Satellite Training Sites and Rural Rotations to Enhance Agriculture/Food Animal DVM Training

The concept of satellite clinical training sites was discussed at length over the course of several work group meetings. Members discussed potential partnerships with existing practices, utilizing new or existing structures at county fairgrounds in strategic locations across the state, and leveraging Extension facilities and other university-owned buildings as possible locations for training facilities that could provide easier access for DVM students to opportunities to work with large animals. These sites could serve to restore the function of the former Caine Center by providing hands-on clinical and business training, strengthening the university's presence in rural communities, and supporting recruitment and outreach efforts in rural areas of the state. There was broad agreement among the work group that some version of a satellite clinic could strengthen student training opportunities and relationships with local veterinarians, but it was noted that satellite clinics would likely not work or be welcome in communities if they were perceived to compete with existing practices in the same areas. As a result, while satellite clinics could serve as excellent opportunities for DVM students to receive more hands-on training with large animals, any such clinic would likely need to be limited to educational purposes only.

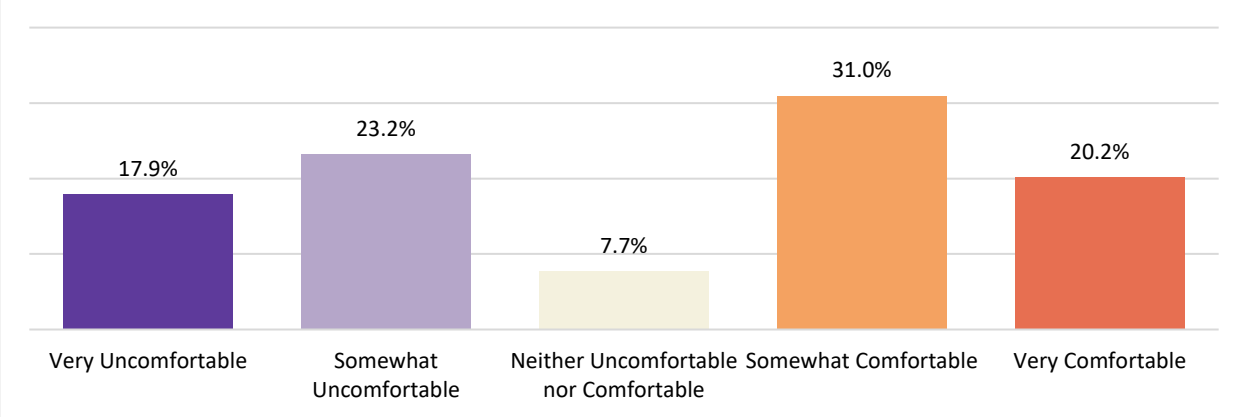
DVM Self-Report Survey Findings on the Veterinary School Experience

DVM student survey data also helped to clarify and contextualize pressing concerns raised during work group meetings and generated from focus group data about student perceptions of, and experiences with, agricultural/food animals while in the College of Veterinary Medicine's DVM graduate program. Several survey items captured students' comfort in working with these animals and their perceptions of the training they have received during their doctoral education, including specific DVM program components that have supported their academic development in the agricultural/food animal arena. Students also reported their interest in an agricultural/food animal certificate training program. Figures present these findings below and information is disaggregated by academic year, gender, prior large animal experience, rural residential background, and general category of species interest.

Student Readiness for Agricultural and Food Animal Practice

Figure 17 presents the distribution of responses among survey participants about their level of comfort in working with agricultural animals "(e.g., cattle, pigs, swine, sheep, goats)." Slightly more than half (51.2%) of participants noted at least some level of comfort, while 41.1% reported feeling uncomfortable working with these animals.

Figure 17: Comfort with Agricultural/Large Animals Among DVM Survey Participants (n = 168)



Results presented in Figure 18 illustrate a breakdown of participant responses by academic year. The percent of DVM students who reported being "very comfortable" are relatively consistent across years—hovering at approximately 20%. When "somewhat" and "very" comfortable categories were combined, the proportion of students hovered near 50%, with third- and fourth-year students exhibiting somewhat increased comfort as compared to first- and second-year students.

Figure 18: Comfort with Agricultural/Large Animals by DVM Academic Year (n = 168)

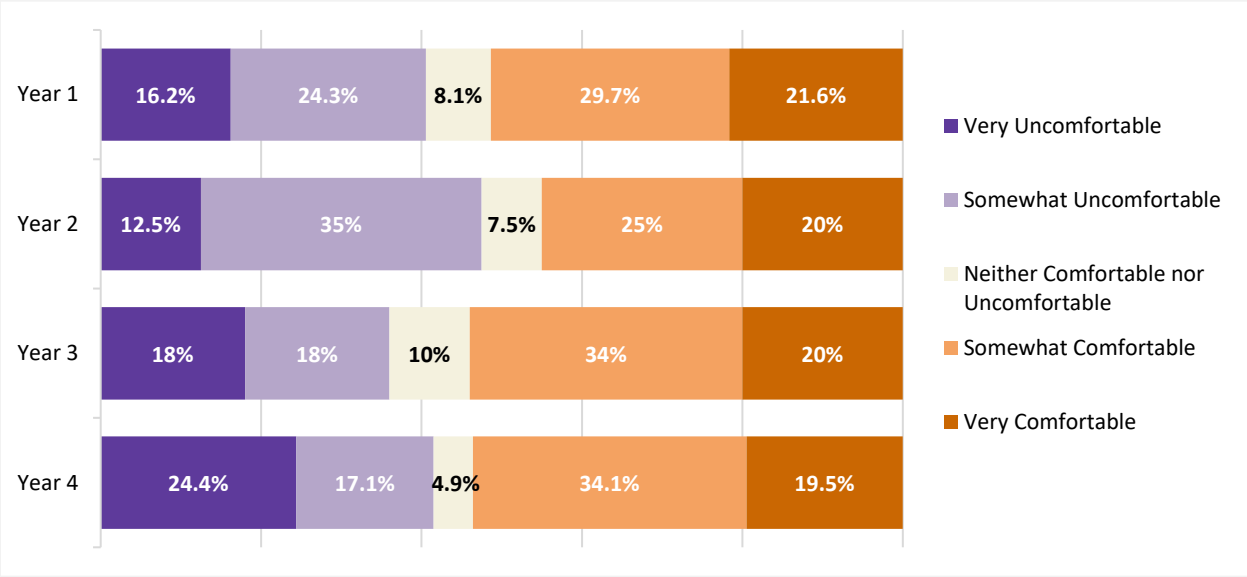
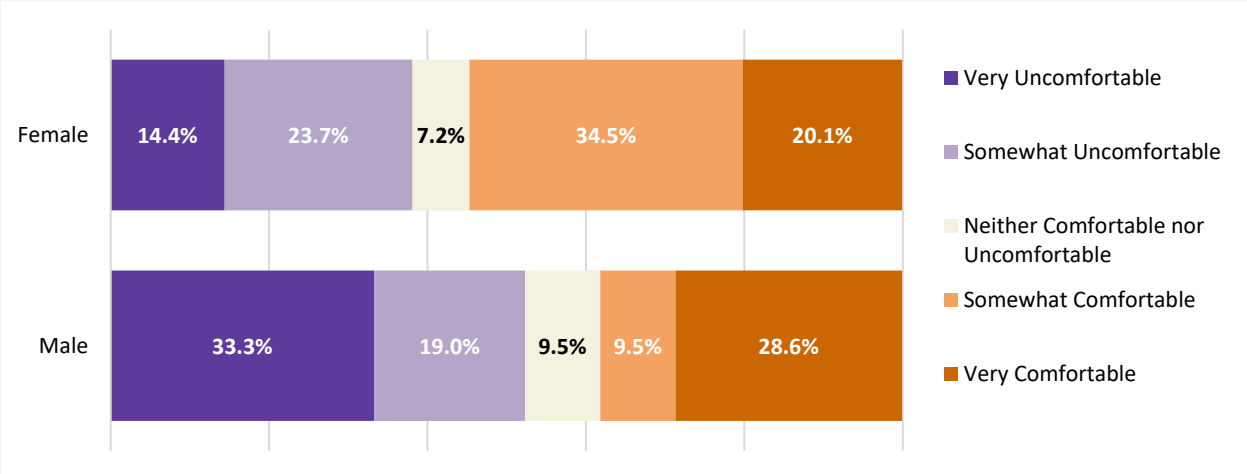


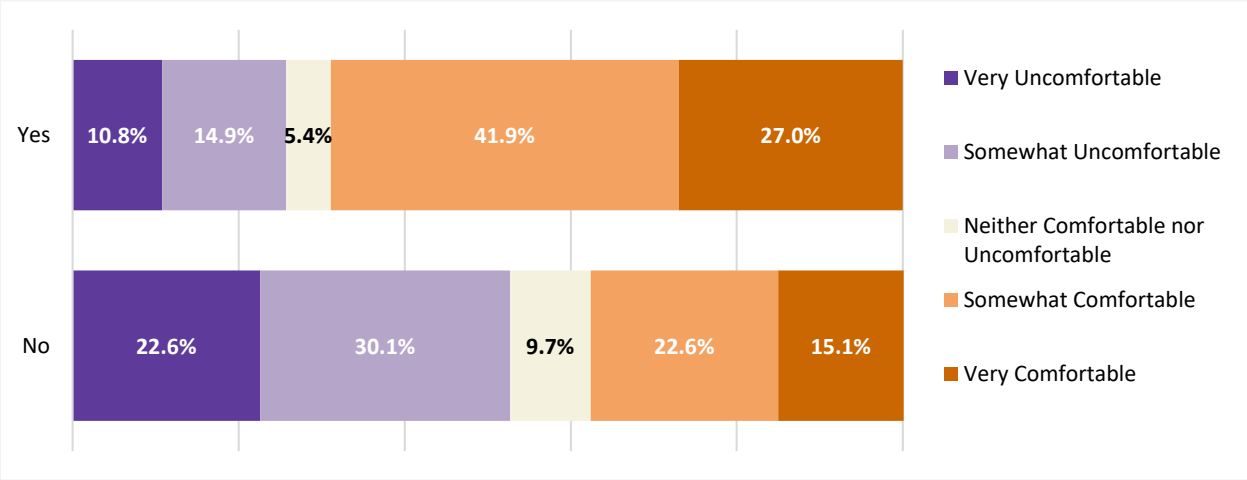
Figure 19 presents self-reported comfort levels in working with agricultural/large animals disaggregated by gender. Findings revealed that, while a smaller percent of female participants reported feeling very comfortable compared to males (20.1% vs. 28.6%), more than half of women indicated at least some degree of comfort overall (54.6%) compared with only slightly more than one-third of men (38.1%).

Figure 19: Comfort with Agricultural/Large Animals by Participant Gender (n = 160)



When comfort with agricultural/large animals was disaggregated by prior rural residence, the differences were stark (see Figure 20). Almost 70% of participants who reported living in a rural area indicated at least some comfort working with agricultural/large animals, compared with only 37.7% of those participants with no rural area background. Relatedly, more than half of those without a rural residential background (52.7%) expressed discomfort (somewhat or very uncomfortable) compared with only 25.7% of participants who had previously lived in rural settings.

Figure 20: Comfort with Agricultural/Large Animals by Prior Rural Residence (n = 167)



Student Confidence in Large Animal Clinical Training

DVM survey participants were also asked about their perceptions regarding the adequacy of their training with large animals in the DVM program (see Figure 21). Of the total sample of responses (*n* = 168), a majority (*n* = 139, 83%) said they did not "believe [they have] had adequate training for working with agricultural/food animals."

Figure 21: DVM Survey Participants' Assessment of Large Animal Training Quality (n = 168)

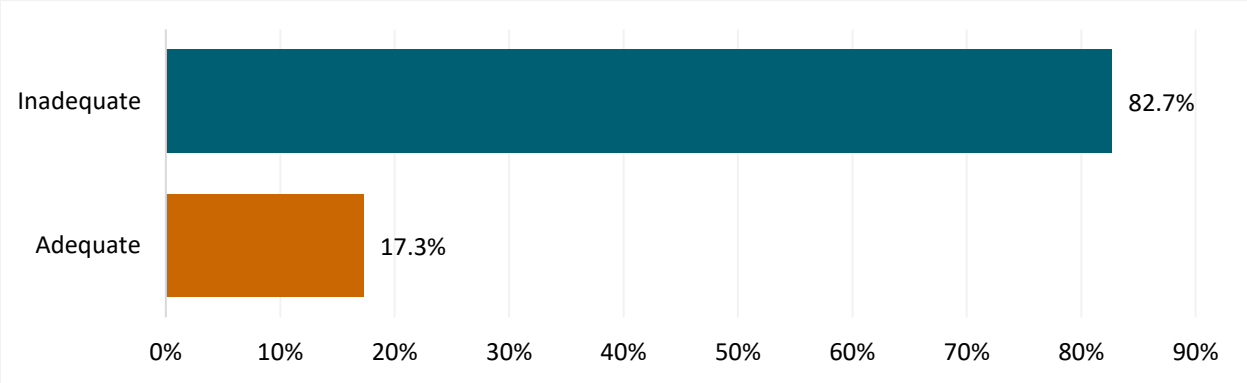
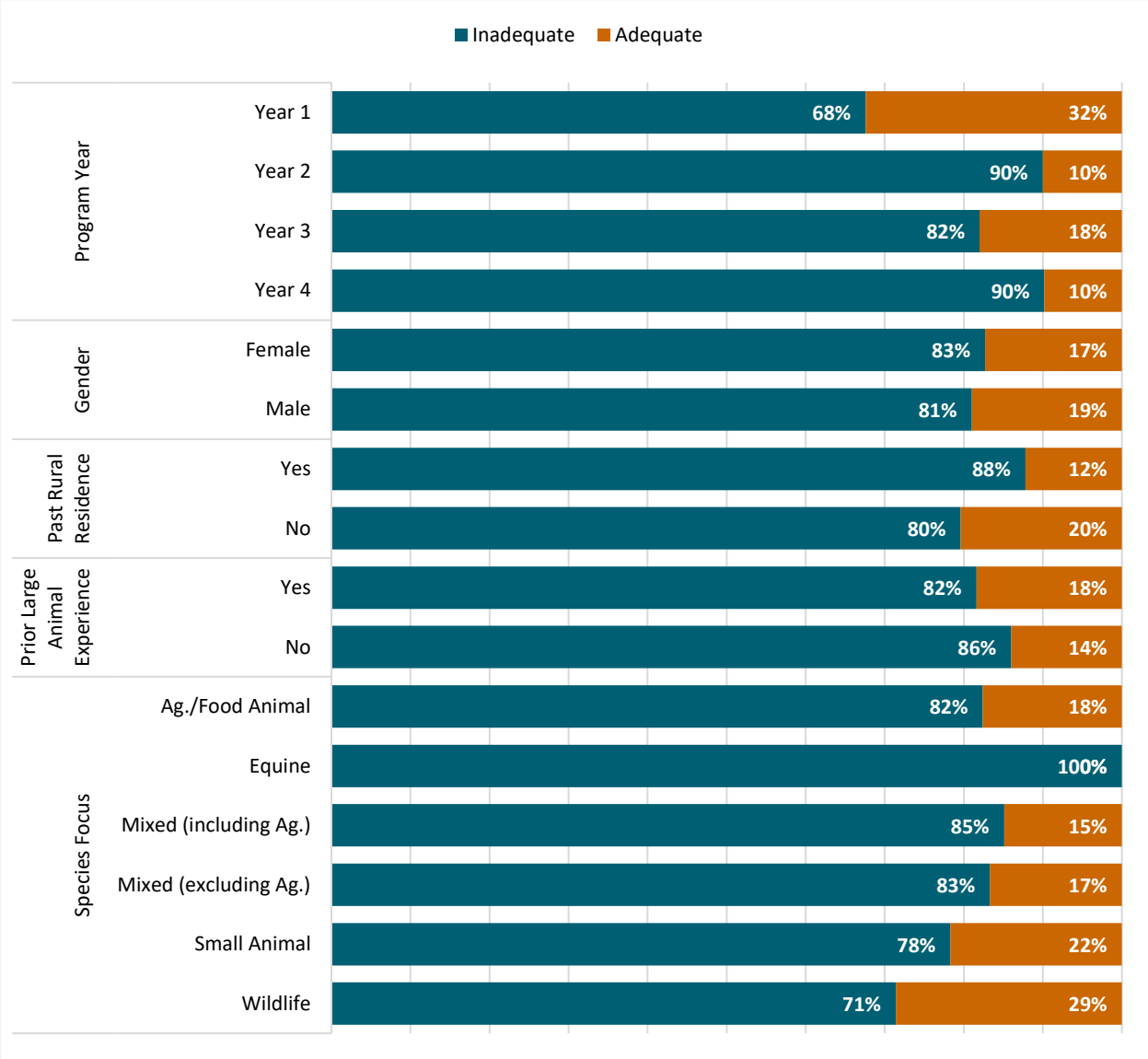


Figure 22 presents the distribution of training adequacy, disaggregated by academic year, gender, past rural residence, prior large animal exposure, and species focus. Perceptions of inadequate training were prevalent across demographic categories. Two-thirds of first year student participants assessed their training as inadequate (*n* = 25, 67.6%), and this increased among second-year participants (*n* = 36, 90%)

and remained high among third-year (*n* = 41, 82%) and fourth-year participants (*n* = 37, 90.2%).

Figure 22: Perceptions of Large Animal Training Adequacy by Participant Characteristics (n = 168)



A comparison of responses across species-focus categories demonstrated similar perceptions of inadequacy, with some variation in participants' assessments. All equine-focused participants rated their training as inadequate (*n* = 11, 100%), followed by those with primary focus on mixed (including agriculture animals) (*n* = 57, 85.1%), mixed (excluding agriculture animals) (*n* = 5, 83.3%), and agricultural/food animals (*n* = 14, 82.4%). Participants with a species focus on small animals (*n* = 47, 78.3%) and wildlife (*n* = 5, 71.4%) expressed perceptions of training inadequacy that were somewhat lower than their counterparts who focused on other species.

Qualitative Feedback Contextualizing Inadequate Large Animal Training

Among 139 participants who rated their large animal training as "inadequate," 133 provided open-ended responses explaining why. Results from an abductive content analysis of these 133 responses revealed

consistent patterns in terms of participant perceptions. These patterns are grouped into eight interrelated categories—all of which concentrate on the lack of exposure to and training with agriculture/food animals and current deficits in faculty capacity and instructional quality.

Table 11 presents the distribution of survey participants whose text responses contained explicit mention of main qualitative themes extracted from the data and these are presented in order of frequency. While there are some objectively positive sentiments about select facets of their educational training, collectively, participants highlighted limitations, shortcomings, and deficits in their experiences pertaining to agriculture/food animal education.

Table 11: Qualitative Themes Explaining Students' Perceptions of Inadequate Large Animal Training

Qualitative Themes	***n***
Lack of hands-on experience/opportunities and limited exposure to large animals, including handling	70
Course deficits (content and coverage, access, labs, elective offerings, cancellations)	60
Poor agriculture curriculum as a general sentiment	29
VTH's closure of the large animal service and the decline of the agricultural animal department	27
Clinical training and rotations	22
Necessity to go off-site and/or rely on student-led clubs for large animal experience	22
Faculty capacity (lack of clinical specialists, faculty departures, class coverage) and quality concerns (poor/subpar instruction)	20
First year students/early in the DVM program	13

Limited Hands-On Experience. Half of the survey participants who reported their training as inadequate (*n* = 70, 50.4%) used language to describe 1) not getting "hands-on" experience working with these animals (or only getting "minimal" experience), 2) not having sufficient opportunities with "handling" agriculture/food animals, and concerns that what exposure they do receive is limited in its practicality (e.g., "concentrated at the referral level and not a practice setting," "limited real-life application"), 3) the scope of topic coverage (e.g., "no production medicine"), or 4) the exclusion of critical animal groups (e.g., " zero hands on swine opportunities (sic)," "no sheep, pigs, or goats"). According to one participant:

> "All of our training has come from a classroom and as things currently stand, there are very very limited rotation options during 4th year for us to get real hands on (sic) experience applying what we've learned."

One offered:

> "…I have not had nearly enough experience working in agriculture animals, especially small ruminants. I have had to purposely try to take rotations outside of the hospital in order to try and gain experience."

Often when participants discussed their lack of hands-on experience, they also simultaneously referred to how these gaps in training negatively impacted their confidence in working with agriculture/food animals. As an example:

> "There is so little hands on experience at WSU for large animal (sic). I do not feel remotely comfortable leaving WSU and going straight into food animal practice."

When comparing their hands-on training with large animals at another university, one participant expressed disappointment and highlighted how this has created a potential barrier for their professional trajectory after they graduate from WSU's DVM program:

> "I had a lot more opportunity to work with food animals at [redacted]…Since being at WSU there have been very few opportunities to work on food animals…I have only been in 2 short labs that covered basic things we had already learned/done at [redacted]. This has honestly made me very uncomfortable to work on large animals post graduation (besides horses) because I have had very little veterinary experience with them and

> its unlikely I will receive any further education during my 4th year due to the ag animal service being shut down."

Course Deficits. The next largest proportion of feedback concentrated on shortcomings in coursework (*n* = 60, 45.1%), including the content of didactic learning, depth of coverage across a range of relevant topics as they pertain to large animals in lecture and laboratory settings, access to classes and labs due to sparse offerings, and "competition" with students whose general species interests are in arenas other than large animals. Nine participants described what they perceived as courses, instructional content, and classroom learning that was disproportionately focused on small animals and one participant reported feeling that "LA [large animal] lectures are not a priority for the CVM." Participants connected gaps in learning with concerns associated with the transition to veterinary practice, as can be seen in the following quotes from three participants:

> "labs have been brief and focused on exposing small animal focused students to the absolute minimum amount of time needed to handle agricultural animals. As a mixed animal, focused, veterinary student (sic) I feel unprepared at this point in my career to enter the workforce."

> "I have had essentially no experience in my didactic years working with ag animals and I believe that our classes on those species were lacking. I overall do not feel that I have a comfort working with these animals and do not feel confident in my knowledge of ag animal diseases/medicine/etc (sic)."

> "The third year classroom education was poor and the case load overall in the area is very low which does not result in adequate comfort when entering the workforce."

Related to limited seat capacity and competition among students for access, one person described:

> "…small animal focused students are allowed to take the large animal rotations and electives taking the seats of large animal/Ag students. I personally missed out on so many opportunities to practice Ag related medicine due to there not being any spots available in the rotations or classes (sic)."

Frustrations associated with course access were not limited to large animal-focused students:

> "It is hard to get into large animal hands on labs due to demand. Students interested in SA [small animal] species or shelter work are discouraged from taking LA [large animal] classes in order to leave cap space for large animal focused students."

Qualitative responses citing course-related concerns also noted a dissatisfaction with class cancellations in general, and seven participants explicitly discussed their frustration and discontent with the recent cancellation of the agriculture/food animal surgery class during the 2025-2026 academic year:

> "…I am disappointed about the loss of large animal surgery courses. How am I to serve a rural community if I've never done a horse surgery? I am worried that I will be ill prepared (sic) to be what my community needs."

General Agricultural Curriculum Shortcomings. Nearly 22 percent of participants expressed negative assessments about the agriculture/food animal "curriculum" as a general sentiment (*n* = 29, 21.8%). Ten participants noted the agriculture animal curriculum as "struggling" and/or "limited" and several offered relatively scathing commentary; one participant described the "agriculture curriculum" as "terrible." Participants described substantive gaps in content:

> "Most of what we learn is centered around dogs. We have been learning about large animals as well, but not in the same frequency in which we learn about dogs."

Similar to their concerns with course-related shortcomings, many participants who noted curriculum gaps also connected these to their apprehension about being appropriately prepared for veterinary practice:

> "While we've had some exposure to performing physical exams on horses and cattle (some/little), the curriculum has been somewhat limited in providing the depth of experience needed to feel confident working with these species in a clinical setting."

Often these statements were embedded in a larger response that contextualized frustrations by citing the VTH's agriculture/large animal service, gaps in clinical training opportunities/rotations, and too few faculty with agricultural/food animal expertise:

> "…class load is primarily small animal, along with hands-on opportunities…I am especially sad looking at the quality/lack of rotation opportunities as I prepare for fourth year. There is some availability for student initiative in seeking things out, but not much freedom and the rotations offered at the university are slim"

Veterinary Teaching Hospital's Food Animal Program and Gaps in Clinical Training. Participants emphasized the decline of the VTH's agriculture animal service and how this had a direct impact on limiting their clinical training and rotation opportunities (n = 22). Approximately 1 in 5 participant responses referenced the "closure" of the VTH agricultural/food animal service and/or the "shut down" of the agriculture animal department (n = 27, 20%). One participant noted,

> "a HUGE limiting factor to my ability to go straight into animal agriculture practice confidently is the lack of agricultural animals in the WSU teaching hospital, and the ag animal medicine service becoming obsolete during my fourth year. I need strong mentorship after graduation, so I won't go directly into a rural mixed-animal practice where there is limited mentorship availability. I need to be in an environment with experienced doctors who can teach me the skills I need to be proficient on my own. This has been a huge shortcoming on WSUs (sic) veterinary school, and I am concerned that there is not enough priority being put on hiring agriculture animal doctors and technicians."

Another stated:

> "WSU has dissolved their agriculture department. There is no longer staff and they are not accepting cases in the clinic at the moment. This means that 4th year students have had to squeeze in the very few spots of equine or therio departments or find ag experiences outside of WSU with no support from the school. There was no warning that this would occur and WSU did not have a plan in place to help the current class to gain ag experience."

According to one participant,

> "Lack of a food animal hospital makes it challenging to gain meaningful experience in clinical case management. Students are left to find their own food animal externships during summers and in their clinical year…However, opportunities with FDIU have provided experience within the school that fosters learning with food animals."

External, Off-Site Options and Student-Led Clubs for Agricultural Animal Training. According to participant feedback, consequences associated with the VTH's agricultural/food animal service and limited caseload have subsequently necessitated that DVM students exert considerable effort in seeking off-site, external opportunities for exposure to agriculture/food animals or rely on student-led clubs for these experiences (n = 22). Many participants cited the benefits gleaned from participating in clubs, including opportunities to work with large animals, but participants also simultaneously noted the effort required to locate and engage in these opportunities, citing scheduling conflicts, financial constraints, and limited "spots" available to participate.

> "Unless a student actively pursues involvement through agricultural clubs or elective opportunities, there appears to be minimal structured emphasis on developing practical skills in large animal medicine."

> "I had to search for large animal experience, and it was challenging to get ag experience while on campus because of all the changes"

> "If I had not sought external opportunities outside of the WSU DVM program, I would not feel comfortable practicing on food animals, even with my previous experience. There were very minimal opportunities throughout the DVM curriculum to participate with live animals, with extremely limited rotations in fourth year."
>
> "Much of my large animal experience and hands on training has been outside of the wsu curriculum (sic). This is very disappointing because I feel that if more students had the exposure in a controlled learning environment then potentially more students would feel comfortable to pursue a career in large animal medicine.
>
> "…It feels like a majority of any preparation for a career in food animal medicine needs to happen outside of the school or you needed to come into veterinary school with the right connections or lived experiences to feel confident in that area"

Faculty Capacity and Quality. Concerns associated with faculty capacity to offer relevant classes and provide clinical mentorship, and faculty quality in terms of course instruction/lectures were raised in 15% of participant responses (*n* = 20). Commonly, participants raised the issue of high faculty turnover and the implications for those DVM students with a species interest in agriculture/large animals:

> "our professors keep quitting, we're told conflicting information between classes in the same day. You are taking away our surgery electives."
>
> "Currently there is no one on staff to teach agricultural animal medicine and the large animal department in the hospital does not have the caseload/there is not much interested in bringing large animals to the hospital."
>
> "…I've been really dissatisfied with the quality/lack of agricultural animal specialists to work alongside and learn under."

The following demonstrates nexus of multiple, related negative experiences among those DVM survey participants who rated their training as inadequate and the consequential impact of these experiences in discouraging an agricultural/food animal veterinary career:

> "The professors struggled to teach material [redacted] and it seemed like anything large animal related is an after thought (sic) of the DVM program at WSU. In addition, the clinical section of Ag medicine for the fourth year students has essentially dissolved leaving hardly any worthwhile opportunities for those who want to practice Ag medicine.-I was excited to be a large animal vet before coming to WSU, and now I feel like it is the area of medicine that I know the least about and am the most uncomfortable doing. I am considering other areas of vet med because I know I will not get any worthwhile experience from this program (WSU)."

Students Who were Early in the DVM Program. Approximately 10% of participants referenced being early in their DVM program of study (*n* = 13) and among this subsample of responses, 10 expressed the need, expectation, and hope that there will be more agriculture/food animal-focused training as they progress. Nine participants also provided the separate caveat that, while early in the program, their perception was they have not had enough agriculture/food animal training thus far. Additional remarks characterized these statements, including that their training to date has been "too SA [small animal] focused," that they have "only learned basics," they are "not comfortable around large animals," are "worried," or feel as if they are "not adequately prepared."

Qualitative Feedback Contextualizing Adequate Large Animal Training

Twenty-six of the 29 participants provided additional qualitative feedback explaining why they rated their DVM training for working with agricultural/food animals as adequate. These participants often qualified their positive assessments by briefly noting their early status in the program, explaining their prior large animal experiences and background, or by discussing clubs and other off-site training opportunities. Content themes are presented in Table 12. Exposure to food animals in classroom lecture settings was

cited seven times. One participant offered, "I have had a few classes that have made me more comfortable to practice medicine in a large animal." In citing the benefits of coursework, another participant noted: "I feel we were offered plenty of opportunities to explore the Ag world though (sic) labs and lectures. I do wish we had a bit more hands on (sic) activities planned into the courses to build confidence."

Table 12: Qualitative Themes Explaining Students' Perceptions of Adequate Large Animal Training (*n* = 26)

Qualitative Themes	***n***
Hands-on, experiential learning is helpful (includes off-site, labs, clubs, clinical rotations)	10
Classroom instructional learning	7
First year/early in the program and anticipate/expect more training	6
Opportunities are available if you are interested and seek them out	4
No plans/interest in food animal; other species interests (e.g., small animal)	3
Prior experiences (e.g., agricultural background, pre-DVM academics)	2

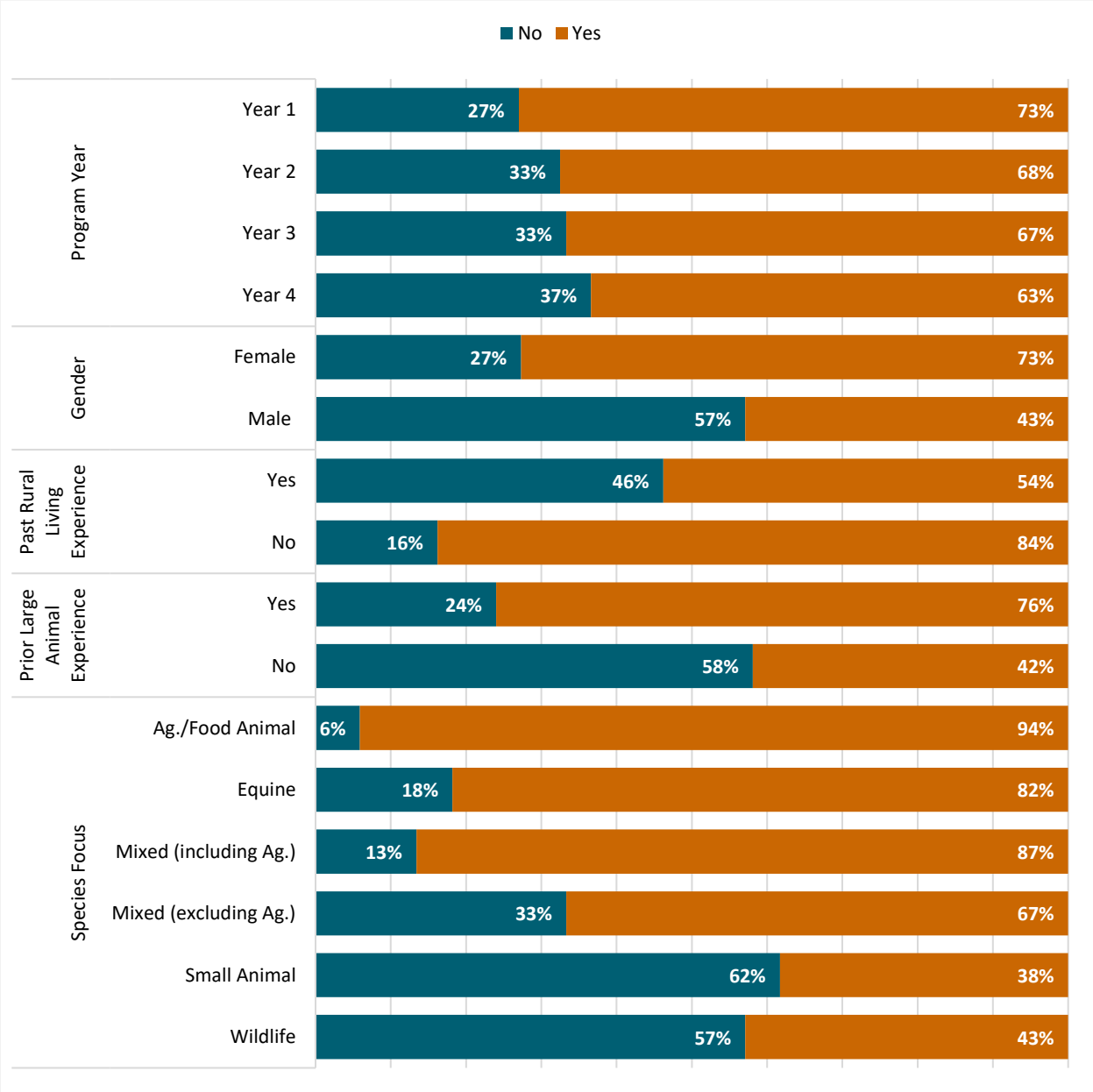
Six participants reported being early in their program development and expressed an interest in additional experiential learning, a desire for continued training, and an expectation for more exposure to food animals to ensure sufficient preparedness after graduation. One participant reflected on their experience to date, "for where I am in my veterinary education I feel like I have had lots of exposure to large animals," while another expressed some concerns that their training would appropriately prepare them, "So far yes, but much more is needed before graduation for someone who came in with minimal experience."

Participants mentioned the adequacy of the DVM program's laboratory offerings (*n* = 4) and noted the availability of "additional opportunities" for "those interested in seeking them out" (*n* = 4). One person offered, "I appreciate the hands-on laboratory opportunities we've been given to practice important skills for a day one veterinarian." According to another participant, "I think WSU gives plenty of opportunities to learn within whichever line of work you choose to go." Three participants gave specific examples of their off-site experiences, including externships, preceptorships, and elective off-site rotations. The benefit of "clubs" to garner large animal experience was emphasized by three participants. One specifically stated, "I feel a little biased since I have grown up with agriculture animals, however, I feel like the animal handling labs as well as club opportunities allows access to lots of students to get hands on experience with agriculture animals." A lack of interest in food animals was cited by three participants offering information about their assessment of food animal training in the DVM program, "To me, it has felt adequate since I do not plan to work [with] food animals."

Interest in Agricultural/Food Animal Certificate Training

Figure 23 reports on DVM survey participant interest in "earning a certificate (concurrently with [their] DVM degree) that provided training and experiential opportunities for learning to work with agricultural/food animals in a rural environment," disaggregated by key student characteristics. Overall, interest in a certificate program was high, with approximately two thirds of participants responding affirmatively (*n* = 113, 67.3%). Moreover, this pattern was relatively consistent across student year. Interest was notably higher among participants who lacked prior rural residential living experience (*n* = 62, 83.8%); whose primary species focus was agricultural/food animal (*n* = 16, 94.1%), equine (*n* = 9, 81.8%), or mixed animal (including ag.) (*n* = 58, 86.6%); and who had prior large animal experience (*n* = 96, 76.0%). Although interest levels were lowest among participants whose primary species focus was small animal (*n* = 23), the proportion remained non-trivial at 38.3%.

Figure 23: DVM Student Survey Participant Interest in a Food Animal Certificate (n = 168)



Focus Group Findings on the Veterinary School Experience

Focus group participants identified several challenges associated with the veterinary school experience that may affect students' preparation for large animal and rural veterinary practice. Discussions centered on three primary themes: 1) insufficient hands-on large animal training, 2) concerns regarding the current capacity of agricultural animal veterinary education, and 3) the need for expanded experiential learning opportunities. Together, these themes reflect focus group members' concerns about whether students are receiving the practical experiences and institutional support necessary to prepare them for successful careers in large animal practice. Table 13 provides a list of these themes and their summary content.

Table 13: Focus Group Findings on the Veterinary School Experience

Focus Group Content Themes
Insufficient Hands-On Large Animal Training • Animal handling • Routine procedures • Live animal experiences • Confidence development
Concerns Regarding Current Capacity of Agricultural Animal Veterinary Education • Faculty reductions • Infrastructure concerns • Agricultural animal program resources • Comparisons with peer veterinary medical school peer institutions
Need for Expanded Experiential Learning Opportunities • Externships • Summer placements • Community partnerships • Satellite training sites

Insufficient Hands-On Large Animal Training

The level of hands-on large animal experience available to veterinary students was prominent during focus group discussions. Participants frequently noted the importance of practical experience in developing both the skills and confidence necessary to enter large animal and mixed animal practice. Several practitioners indicated that recent graduates often begin their careers with limited experience handling large animals and performing routine procedures, making the transition into practice more challenging.

Participants emphasized that exposure to animal handling, live tissue experiences, and day-to-day clinical work is essential for preparing students to work effectively with agricultural animals. According to focus group participants, these experiences help students develop confidence and competence prior to graduation, particularly when entering practice settings where veterinarians are expected to work independently soon after employment. Participants expressed concern that insufficient opportunities for hands-on training may leave graduates feeling unprepared for the daily and practical realities of large animal veterinary medicine and may contribute to apprehension in pursuing these career paths following graduation.

Concerns about Institutional Capacity

Focus group participants emphasized their concerns regarding the current capacity of agricultural/food animal veterinary education in the DVM program at WSU and the potential implications this has for DVM student training. Discussions highlighted reductions in faculty positions, declining program infrastructure, and broader concerns about the resources available to support agricultural/food animal instruction. Several participants characterized the overall agricultural/food animal training as diminished, relative to prior years and questioned whether current resources are sufficient to meet workforce needs.

According to these discussions, rebuilding a strong large animal training environment would require sustained institutional commitment from WSU and the state, including investment in faculty, facilities, and program resources. Comparisons were frequently drawn to DVM programs in other states that have invested more heavily in rural and agricultural veterinary education. Practitioners emphasized that maintaining a robust agricultural animal training program is critical for educational quality and for supporting Washington State's future large animal veterinary workforce.

Need for Expanded Experiential Learning Opportunities

A third major theme focused on the need to expand experiential learning opportunities beyond traditional classroom instruction. Participants consistently highlighted the value of partnerships between the veterinary program and private practitioners, rural clinics, and community veterinarians in providing students with meaningful exposure to large animal practice. Several participants expressed a willingness to host students, provide externship opportunities, and support hands-on learning experiences, but noted that stronger coordination and earlier engagement would be necessary to maximize these opportunities. Suggested strategies included expanding externships, developing summer placements and paid internships, increasing scholarship support, and creating more structured pathways for students to gain experience in rural practice settings. Participants also discussed the potential value of satellite training or teaching centers, particularly in areas like Moses Lake, WA, to increase student exposure to agricultural animal medicine and rural veterinary practice.

Practitioners emphasized that experiential learning opportunities provide students with valuable practical experience while also helping them build professional connections and confidence in large animal practice settings. Participants suggested that earlier and more sustained exposure to these environments could strengthen student preparedness and increase interest in pursuing rural and agricultural veterinary careers following graduation.

Key Takeaways about WSU's Veterinary School Experience

Based on the collective findings from the work group, the analysis of DVM student survey data, and focus groups conducted with practicing rural, large animal veterinarians, below is a summary of key takeaways regarding the veterinary school experience at WSU.

- DVM student survey participants overwhelmingly reported that, so far in the DVM program, they did not believe they had adequate training for working with agricultural/food animals. This perception was widespread and cut across gender, year in the program, state residency, prior experience with large animals, and species of focus.
- DVM student survey participants explained their perceptions of inadequate training for working with agricultural/food animals as rooted in several factors:
    - Lack of hands-on experience
    - Curriculum gaps and faculty shortages
    - Emphasis on small animals rather than large animals
    - The closure of the Large Animal Internal Medicine service at WSU's teaching hospital
    - The overall decline of the agricultural component of WSU's DVM program
- DVM students indicated a strong interest in learning about large animal medicine; approximately 2/3^{rds} of participants reported interest in earning a certificate (concurrently with their DVM degree) that provided training and experiential opportunities for learning to work with agricultural/food animals in a rural environment.
- Work group meetings identified several ways WSU's DVM program could be strengthened to better address student needs surrounding large animal medicine:
    - Develop a strategic plan for delivering agricultural animal education across all four years of the DVM program
    - With funding support from the Legislature, reinvigorate the Field Disease Investigation Unit (FDIU) to provide increased opportunities for field experience with agricultural animals
    - Consider the possibility of a future certificate program focused on large animal medicine as part of a longer-term solution and contingent on strategic planning

    - Identify livestock concentrated areas of Washington for the establishment of additional externship opportunities and the potential development of a satellite location to increase hands-on training and experience with large animals
- Work group meetings also identified the need for the Legislature to fund the expansion of available seats for Washington residents in WSU's DVM program to help address Washington's large animal veterinarian shortage.

Transition from Veterinary School to Large Animal Practice

Once DVM students complete their educational experience at Washington State University, there are several challenges that may inhibit successful transition to a rural or large animal clinical veterinary practice. The work group identified a series of factors that may act as roadblocks or hindrances to a successful transition. These include, at minimum, the following factors:

1. New veterinarians are typically faced with substantial student loan debt upon graduation, and rural and large animal veterinary practices typically yield substantially less income as compared to non-rural practices that focus on companion animals.
2. New veterinarians typically prefer not to practice alone when they begin their careers, which is more typical of large animal practice as compared to companion animal practice.
3. Large animal veterinarian culture may be a detractor for new veterinarians, where expectations surrounding work-life balance have undergone generational shifts.
4. Existing rural veterinary practices often lack resources for modern equipment and facilities to attract newly graduated veterinarians.
5. Rural and large animal veterinary practice, which has been historically dominated by male veterinarians, is not always welcoming to women, who currently constitute a large majority of veterinary students. Likewise, rural and large animal veterinary practice is largely white, which can result in challenges for veterinarians of color.

Work Group Findings on the Transition to Large Animal Practice

When students complete veterinary school with an interest in rural or large animal practice, the transition into that work presents its own significant barriers. Work group discussions identified a consistent set of challenges at this stage, including financial pressures, workforce isolation, inadequate mentorship, and insufficient institutional and legislative support, alongside several promising models and mechanisms for improvement.

Financial Barriers and Student Loan Debt

The high cost of veterinary education and the resulting student debt burden were discussed repeatedly by the work group as central obstacles to entering rural and large animal practice. Work group members noted that loan repayment in large animal practice is considerably more difficult than in companion animal practice due to lower average salaries, making the financial calculus unfavorable for many new graduates considering rural careers.

While federal loan repayment programs for veterinarians exist to help address this shortcoming, work group members noted that the application and reporting processes are cumbersome and time-consuming, which ultimately discourages many potential applicants from even attempting loan forgiveness. New DVM graduates often lack the grant-writing experience that would assist them with loan forgiveness applications, while established veterinarians typically do not have time to prepare applications, leaving many to avoid pursuing available support programs to relieve debt burden.

The work group reviewed legislative responses to resolve debt burden adopted by other states, finding that loan repayment programs tied to service in underserved rural areas are the most common approach.

However, members raised concerns about long-term effectiveness, noting that veterinarians may frequently fulfill their service obligations and then relocate or leave the field. The work group concluded that financial incentives in the form of loan forgiveness alone are not sufficient to ensure retention and a lasting solution to rural veterinary shortages, especially as small animal practices also support signing bonuses and some loan forgiveness without the administrative overhead.

While loan forgiveness programs still require DVM students to take on large debt burdens without reasonable guarantees of forgiveness, scholarship programs can serve as another way to reduce or eliminate debt burden altogether while still requiring recipients to serve in rural areas for several years after graduation. The work group explored this approach, identifying the Food Animal Veterinarian Conditional Scholarship Program, which was created by the Washington State Legislature in 2008 but never funded. A guest closely tied to the creation of this program was invited to speak to the work group and provided historical context, explaining that the program was designed to place veterinarians in rural Washington and was broadly supported by industry from the outset. Its framework was intentionally flexible, allowing funds to support tuition, books, room and board, or partial costs. Despite this, the program remained unfunded and unused due to limited prioritization by both the state and WSU and insufficient advocacy, particularly from the university, to pursue legislative or donor funding. Work group members expressed concern about the enthusiasm gap fort this program between industry stakeholders and the university, questioning whether administrative inertia, limited advocacy, or broader legislative challenges were responsible for the program languishing for nearly two decades.

Professional Isolation and the Need for Mentorship

Work group members emphasized that new graduates from the DVM program increasingly prefer supportive, team-based environments over solo practice and may feel unprepared for this kind of work without adequate hands-on experience and mentorship. The absence of these collaborative conditions in rural settings can deter new graduates from pursuing work in these areas. Structured mentorship, early exposure to large animal practice, and cohort development (through scholarship programs or certificate program models) were identified as potential solutions, alongside opportunities to integrate business and practice management training into veterinary education, which could prepare students for solo practice in rural areas.

Limited Coordination and Alignment Among Key Stakeholders

A recurring theme in work group meetings was the misalignment among WSU's College of Veterinary Medicine, state legislators, and the agricultural industry. Industry support, through advocacy, for addressing rural veterinary workforce shortages remains strong, although financial support has been lacking. Members noted that progress has been slowed by limited coordination, shifting institutional priorities at WSU, and insufficient legislative advocacy and financial support over time. Work group members called for stronger collaboration across all parties, including increased engagement with legislators by industry, clearer pathways for advocacy, and a more intentional relationship between the college and industry stakeholders.

Funding the Food Animal Veterinarian Conditional Scholarship Program

Among the financial strategies that were discussed by the work group, the Food Animal Veterinarian Conditional Scholarship Program emerged as one of the most immediately actionable mechanisms for reducing financial barriers to rural practice. Several participants noted that even partial funding for the 2008 Food Animal Veterinary Conditional Scholarship Program could provide meaningful support to students and help retain graduates in Washington through service commitments in rural areas. The work group discussed administrative mechanisms for implementing such a program, including scholarship distribution, tracking service obligations, and repayment processes for those who do not fulfill requirements. Critically, the group noted that systems to manage similar programs already exist at the

university, which suggests that reviving the scholarship program could require little administrative effort from WSU. Because the legislation creating this program is still in effect, reviving this scholarship program as it is already defined in law through WSU buy-in and at least initial financial support from the legislature could provide a simple and highly effective mechanism to immediately begin addressing the shortage. Within four years of the scholarship program being activated, two new veterinarians could be placed in shortage areas in the state, and each year the program remains active, another two new veterinarians will be ready for placement.

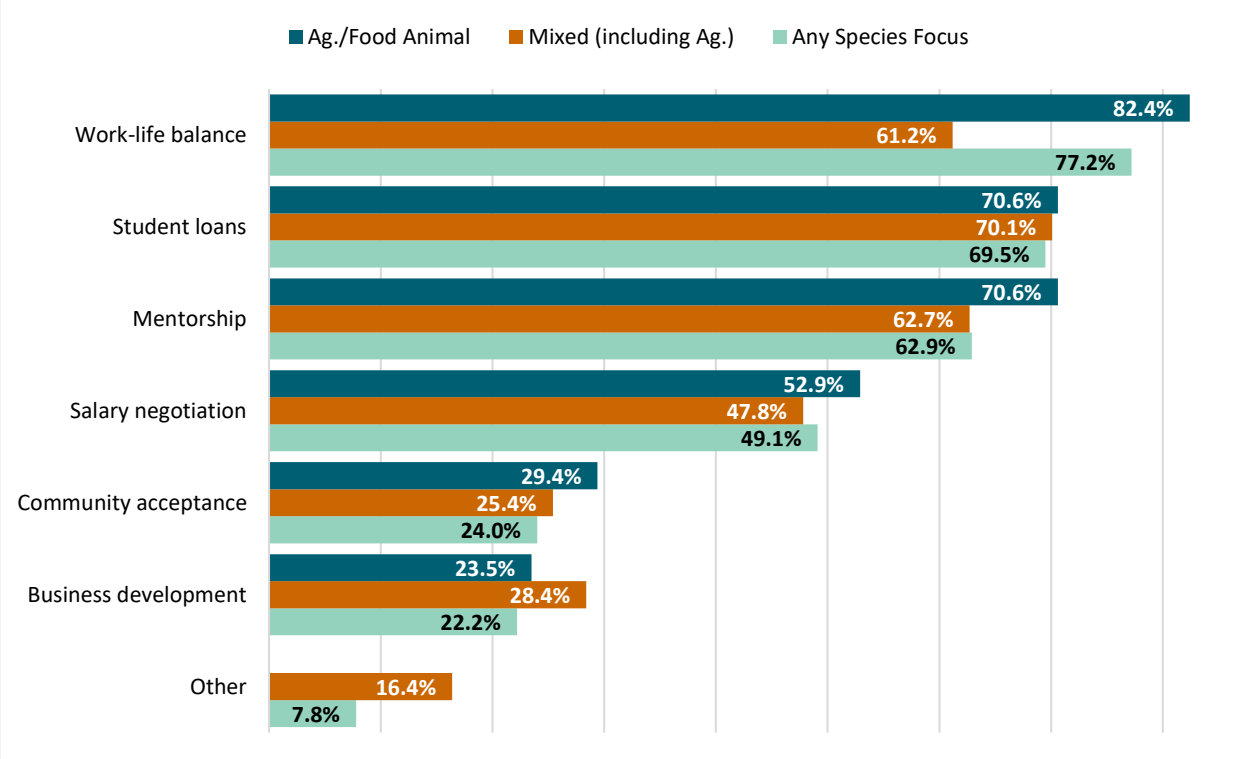
DVM Self-Report Survey Findings on the Transition to Large Animal Practice

To further understand the challenges that may arise in the post-DVM period when new graduates are entering veterinary practice, survey participants were asked a series of relevant questions pertaining to their perceptions of and concerns with this transition. Items focused on the challenges they anticipated after graduation, their community preferences for practicing veterinary medicine, and the possibility of incentives that could encourage rural/small town living and working with large animals.

Anticipated Challenges to Practicing Veterinary Medicine

Figure 24 presents participant responses to an item that asked about the primary challenges they anticipate "as you start your career." Findings are reported for all participants who reported at least one challenge, and they are also disaggregated and reported for those with mixed animal (including agricultural animal) and agricultural/food animal primary species interests. First, more than three-quarters (*n* = 129, 77.2%) of the full sample reported concerns about achieving work-life balance, followed by 69.5% (*n* = 116) who identified concerns about repaying student loans; the need for mentorship was a close third (*n* = 105; 62.9%). In addition, approximately 50% (*n* = 82) of participants identified salary negotiation as a challenge in their transition to veterinary practice.

Figure 24: DVM Participants' Anticipated Challenges Transitioning to Veterinary Practice (n = 167)

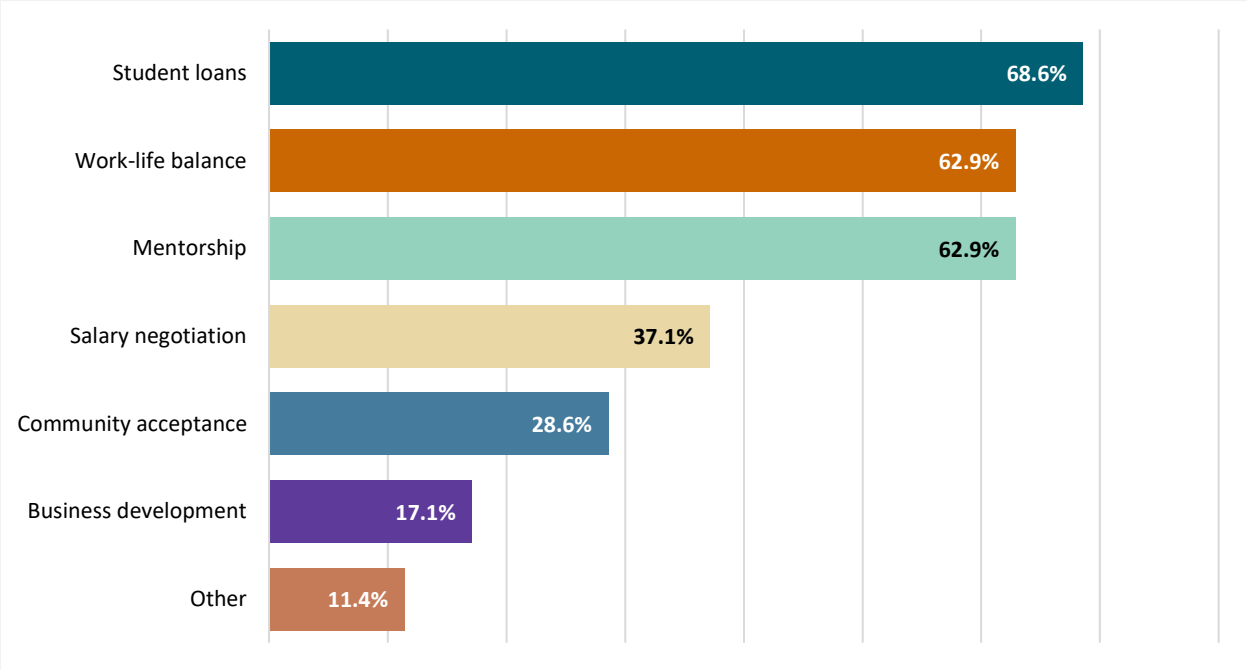


Among participants whose focus was mixed animals (including agricultural animals) and whose interest was primarily agricultural/food animals, the patterns were similar, with a few notable exceptions. First, a greater proportion of agricultural/food animal participants reported concerns on all but one of the categories, compared to mixed animal (including agricultural animals) participants. Differences were most pronounced for anticipated challenges with work-life balance and mentorship between those with mixed animal interest (61.2%) and those with agricultural/food animal interest (82.4%).

Participants who selected "other" challenges were afforded the opportunity to explain their response. Of note, 73% of the mixed animal (including agricultural animals) participants who selected this option noted concerns associated with limited hands-on skills and experience with large animals, lack of comfort working with large animals, and/or worry about resource deficits. These findings suggested their concerns were primarily directed at servicing large animals as opposed to small animals when working in a mixed practice environment.

Figure 25 narrowed the focus from all DVM survey participants to those who indicated they had plans to work in Washington (or Washington and another state) and to work with large animals. Among this smaller subset of participants (*n* = 35), the pattern of findings was similar. The three most prevalent anticipated challenges remained student loans (*n* = 24, 68.6%), work-life balance (*n* = 22, 62.9%), and mentorship (*n* = 22, 62.9%).

Figure 25: Anticipated Challenges Transitioning to Veterinary Practice Among Washington-Bound, Mixed Animal/Ag Participants (n = 35)



Post-Graduation Community Preference

Given the overlap between large animal veterinarian shortages and rural regions, participants' post-graduation community preferences were examined. Table 14 reports these findings. Collectively, just over half the respondents indicated a preference for living in a rural area (*n* = 36, 20.8%) or small town (*n* = 52, 30.1%). The other half of the respondents reported a preference for living in a large town (*n* = 29, 16.8%), a

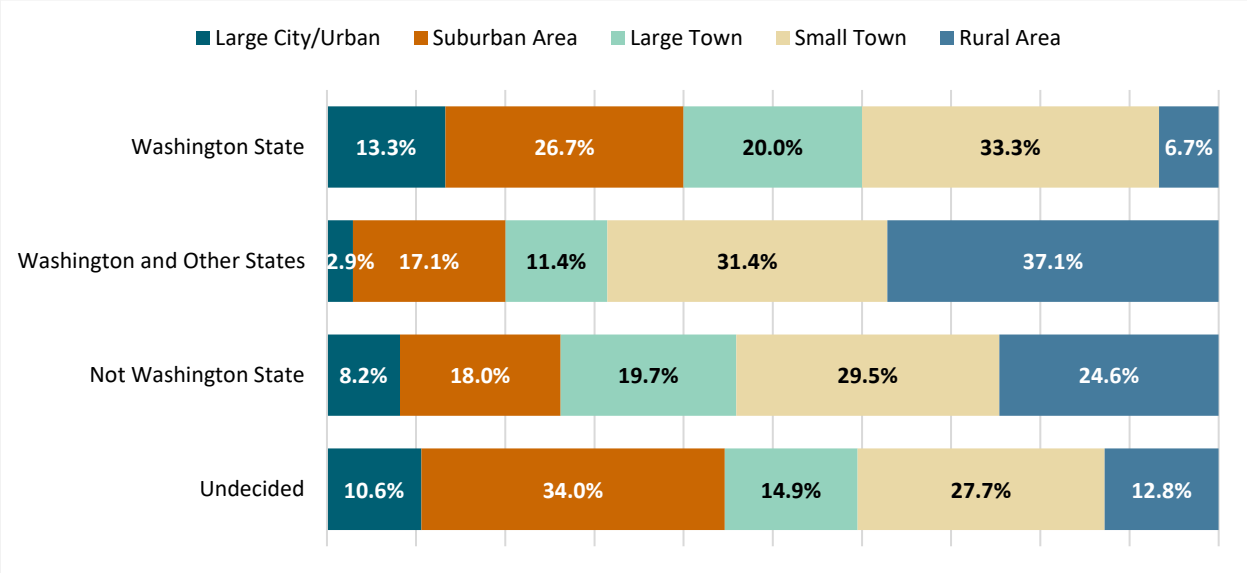
suburb (*n* = 41, 23.7%), or a large city (*n* = 15, 8.7%).

Table 14: Community Preference Among DVM Student Survey Participants (n = 173)

Category	Frequency	Percentage
Large City/Urban Area	15	8.7%
Suburb Near Large City/Urban Area	41	23.7%
Large Town	29	16.8%
Small Town	52	30.1%
Rural Area	36	20.8%

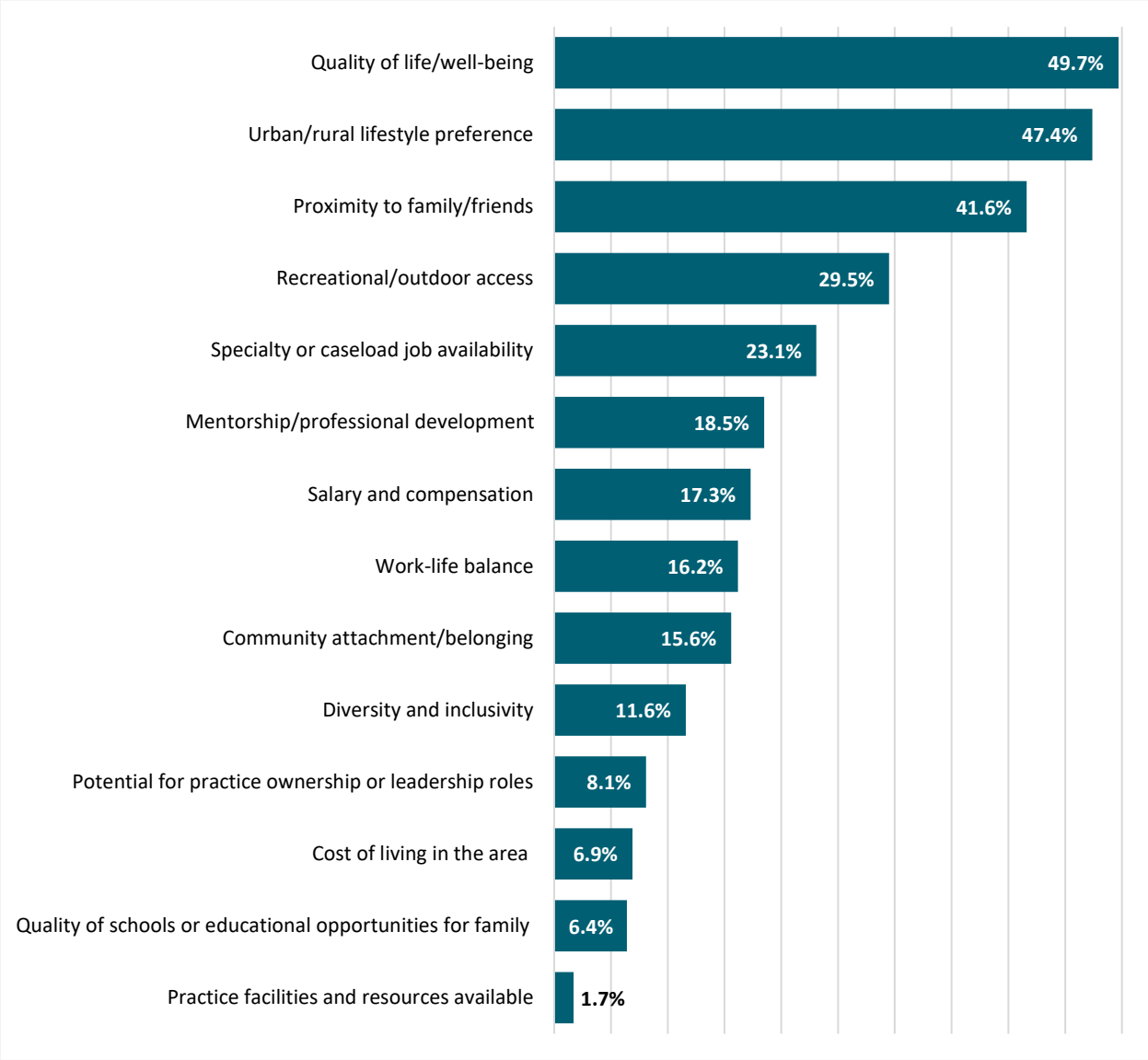
To examine community preferences for veterinary practice among Washington-bound participants, Figure 26 reports preferences broken down by planned state of employment. Among those with plans to work only in Washington State, 40% indicated a preference for living in a small town or rural area. This proportion grew significantly to 68.5% among those planning to work in Washington and at least one other state (typically the bordering states of Idaho or Oregon). The higher percentage likely reflects the rural nature of Washington's border regions where large animal veterinarians may service both Washington and neighboring or boundary states.

Figure 26: Community Preference by Planned Geographic Area of Professional Practice Among DVM Participants



Survey participants were also asked to indicate the primary three reasons for their community preference and in doing so, were given a series of set response options. Findings are presented in Figure 27. Participants' preferences were most frequently affected by concerns for quality of life and well-being, general lifestyles associated with their community preference, and proximity to family and friends.

Figure 27: Distribution of DVM Survey Participant Responses Explaining Community Preference (n = 173)



Potential Factors to Incentivize Rural/Small Town Veterinary Practice

Participants who reported a preference for living in a large town, suburban area, or a large/urban city were asked if there was "anything that might incentivize [them] to work in a small town (2,500 to 9,999 people) or rural area (fewer than 2,500 people). Figure 28 shows that 61% of these participants could be incentivized to live and work in small town or rural area. Those who indicated their willingness to being incentivized were asked to provide additional information in an open-ended response. This yielded fifty-one responses which were assessed using a directed content analysis; 11 main qualitative themes were identified.

Figure 28: Urban-Bound DVM Survey Participants' Willingness to be Incentivized (n = 83)[23]

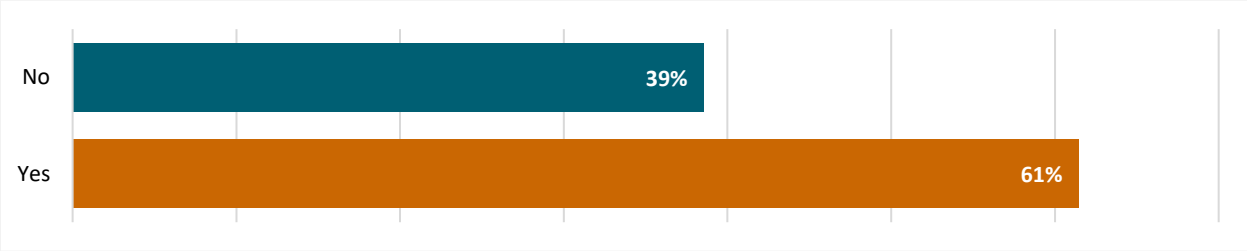
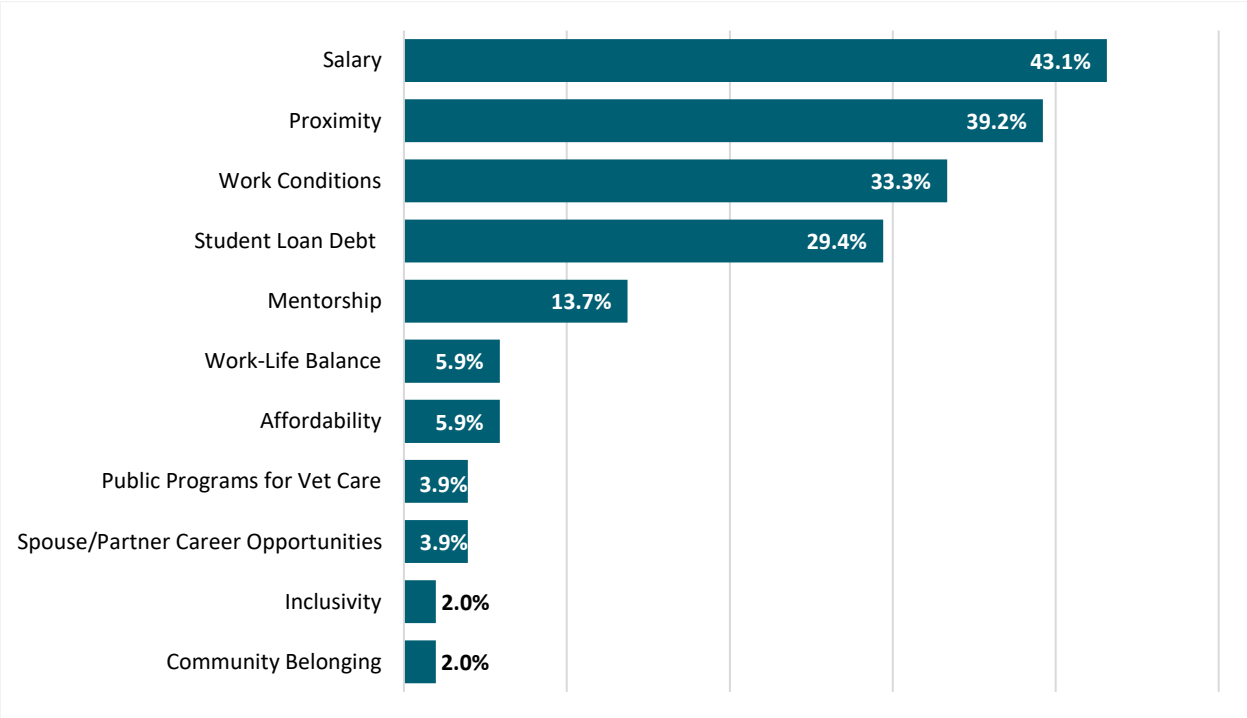


Figure 29 presents the distribution of these themes based on the frequency that they were discussed among participants. Salary, proximity, and work conditions were the three incentives cited by the largest percentage of participants. Almost half reported the desire for a competitive or high salary, and approximately 40% reported that proximity to an urban center, activities, amenities, and other desirable features could incentivize them to work in a rural or small-town setting. One-third of participants cited workplace conditions, nearly 30% indicated assistance with student loan debt, and approximately 14% named "mentorship" in their discussion of incentives.

Figure 29: Qualitative Themes for Incentivizing Rural/Small Town Veterinary Practice (n = 51)



[23] In total, 85 participants reported a preference for an urban/large city, suburban, or large town community setting for post-graduation veterinary practice. Among those, 83 responded to the item that asked if they could be incentivized to work in a rural area or small town. A line-by-line qualitative review and analysis of open-ended responses revealed that 7 of the 58 participant who affirmed a willingness to be incentivized, provided qualitative information indicating there was no incentive at all or no actionable, realistic incentive that could motivate them to work in a rural setting or small town. These 7 participants were re-categorized as "no" responses to this question in the text, tables, and figures presented in this report.

Among participants who indicated that they could be incentivized to work in a small town or rural area, proximity to a larger city or urban location was cited the most frequently; one participant said they wanted to be "within a 30-minute drive" and another noted that distance "less than 3 hours" was sufficiently close (see Table 15). Several participants explicitly noted the need for proximity to activities such as entertainment, restaurants, retail, and arts/culture, while others expressed the importance of proximity to amenities, including public transportation, quality schools, and access to healthcare. Case type, workplace climate and culture, and a sufficient caseload were the top three most prevalent work conditions discussed among participants to incentivizing a rural setting or small-town veterinary practice. Finally, 8 participants noted the relevance of student loan "repayment" while 6 explicitly stated that "forgiveness" would incentivize working in a rural or small-town community setting.

Table 15: Proximity, Work Conditions, and Student Debt Incentives for Rural/Small Town Veterinary Practice Subthemes

Qualitative Themes/Subthemes	***n***
Proximity (*n* = 20)	
Large city/urban location	6
Activities (e.g. entertainment, restaurants, and retail)	5
Amenities[24] (e.g., quality schools, public transportation, healthcare)	4
"My desired location"	4
Outdoor recreation	3
Family	2
Work Conditions (*n* = 17)	
Case type	5
Workplace climate and culture	4
Caseload/enough work	3
Facilities and equipment	2
Colleagues	2
Board Specialists	1
Safety	1
Hours	1
Client culture	1
Student Loan Debt (*n* = 16)	
Repayment program	8
Forgiveness	6
Payment assistance	1

*Case type includes challenging cases = 1, small animals/exotics = 1, variety of species = 1, species interest = 1, shelter medicine = 1

Student Loan Forgiveness to Incentivize Rural, Large Animal Veterinary Practice

Participants were asked whether they would practice in a rural area and commit half or more of their time to large animal care in exchange for student loan forgiveness. Figure 30 indicates that most participants were willing to do so (*n* = 109, 64.9%). Only 22.6% (*n* = 38) said no, and 12.5% (*n* = 21) were uncertain.

[24] One participant explicitly noted proximity to "resources," but this was not elaborated on in any detail and has been included in the "amenities" subtheme.

Figure 30: DVM Participant Interest in Student Loan Forgiveness for Rural, Large Animal Practice (n = 168)

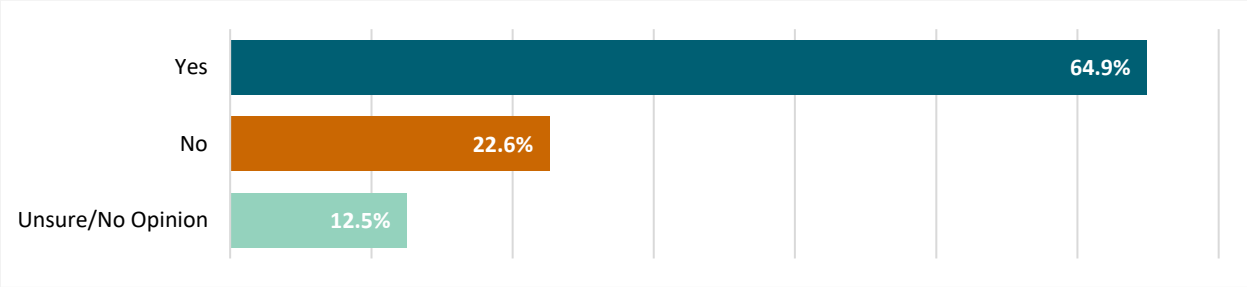
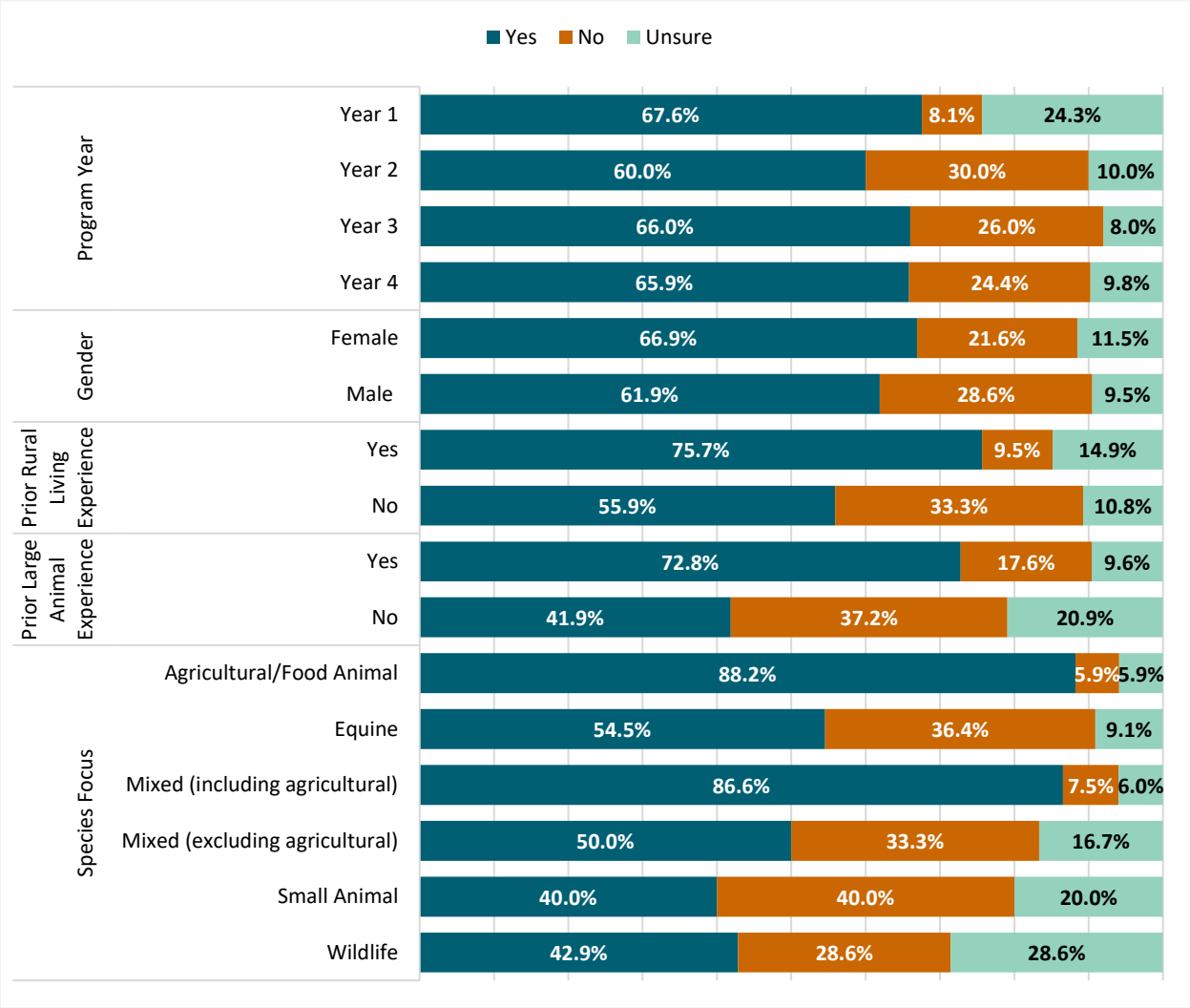


Figure 31 shows participant interest in student loan forgiveness by key characteristics. Overall, participants indicated a high level of interest in debt mitigation. Of particular importance, the highest levels of interest were reported among participants whose primary species focus was agricultural/food animals (*n* = 15, 88.2%) and mixed animals (which included agricultural animals) (*n* = 58, 86.6%).

Figure 31: Interest in Student Loan Forgiveness for Rural, Large Animal Practice (n = 168)



Focus Group Findings on the Transition to Large Animal Practice

Focus group participants identified several challenges associated with the transition from veterinary school to large animal practice. Three primary themes emerged: 1) new graduates entering practice without sufficient confidence and practical experience, 2) financial pressures that influence this initial career decision, and 3) a lack of structured support and mentorship during the transition into practice. Collectively, participants suggested that these challenges can discourage new veterinarians from pursuing or remaining in large animal and rural practice settings. Table 16 provides a list of these themes and their summary content.

Table 16: Focus Group Findings on the Transition to Large Animal Practice

Focus Group Content Themes
New Graduates often Enter Practice without Sufficient Confidence • Handling experience • Procedural competence • Readiness for independent practice
Financial Pressures Influence Initial Career Decisions • Student debt burden • Compensation expectations • Financial viability of rural practice • Career choice constraints
Mentorship and Supported Entry Pathways are Lacking • Clinical and professional mentorship • Early-career support • Externships and internship pathways • School-practice partnerships

New Graduates Often Enter Practice Without Sufficient Confidence

Participants expressed concern about the readiness of new graduates entering large animal practice, noting that many recent graduates begin their professional careers without sufficient experience in handling large animals or performing routine procedures that are commonly encountered in agricultural and mixed animal practice. As a result, new graduates may feel uncertain in their ability to work independently and apprehensive about their skills/ability to perform in these practice settings where veterinarians are expected to make clinical decisions and practice medical procedures with limited supervision.

Focus group participants emphasized how confidence is developed through repeated exposure to animal handling, routine experience and training with clinical procedures, and day-to-day practice experiences. Several practitioners suggested that new graduates often demonstrate strong academic knowledge but lack the hands-on exposure necessary to feel fully prepared for the realities of large animal practice. This gap between classroom learning and clinical practice can undermine their confidence and present critical challenges during the transition into the workforce. Collectively, this can contribute to reluctance among some graduates to pursue large animal practice. Participants further noted that preparedness for independent practice is particularly important in rural communities, where veterinarians may have fewer colleagues available for immediate consultation and support. Consequently, practitioners emphasized the importance of ensuring that students graduate with sufficient practical experience and confidence to successfully transition into these settings.

Financial Pressures Influence Initial Career Decisions

Financial considerations were also identified as a significant factor shaping career decisions immediately following graduation. Participants reported that educational debt often influences where graduates choose to practice, with many comparing opportunities in rural and large animal practice to higher paying positions in small animal medicine or metropolitan settings.

Practitioners noted that substantial student loan obligations, combined with salary differentials between practice types can make rural and mixed animal positions less attractive to new graduates. Several participants suggested that even students who enter a DVM program with a strong interest in large animal medicine may ultimately choose alternative career paths because of financial realities. Concerns regarding long-term financial stability, compensation expectations, and the economic viability of rural practice were frequently discussed as factors affecting employment decisions during the transition from veterinary school to practice.

Mentorship and Supported Entry Pathways Are Lacking

A third major theme focused on the need for stronger mentorship and support mechanisms during the transition into practice. Entering large animal practice can be particularly challenging for new graduates, especially when opportunities for guidance and professional support are limited. Several practitioners emphasized that confidence and competence continue to develop after graduation and that early-career veterinarians benefit from access to experienced mentors who can provide clinical guidance, professional advice, and support during difficult cases.

Support in the form of structured entry pathways to facilitate the transition from veterinary school to practice is also critical. Participants discussed externships, internships, and the salience of professional relationships that can be developed through experiential learning opportunities in terms of their value for connecting students with future employers and in easing the transition to practice settings. Some participants suggested that stronger partnerships between veterinary education programs and practicing veterinarians could provide new graduates with additional support as they enter the workforce.

Key Takeaways about the Transition to Rural, Large Animal Practice

Based on the collective findings from the work group, the analysis of DVM student survey data, and focus groups conducted with practicing rural, large animal veterinarians, below is a summary of key takeaways regarding the transition from veterinary school to rural, large animal practice.

- DVM student survey participants, and especially those interested in large animal medicine, indicated several barriers to working with agricultural/food animals in a rural setting. The most prevalent barriers included the following:
    - Achieving work-life balance
    - Paying student loans
    - Receiving needed mentorship for practicing with large animals
- The challenges noted above tended to drive students toward small animal practice where salaries are considerably higher, mentorship is more readily available, and work-life balance is more easily accomplished.
- Despite the above points, approximately 2/3^{rds} of survey participants (and 95% of fourth-year students interested in mixed animal practice) indicated a willingness to be redirected toward practicing veterinary medicine in rural areas and with large animals in exchange for student loan forgiveness.
- More than half of the urban- and suburban-bound survey participants indicated that higher salaries, proximity to amenities, and favorable work conditions could motivate them to live and practice in rural areas.

- These responses suggest that the shortage of rural veterinarians is not necessarily related to a lack of veterinarians interested in large animal care or unwilling to live in rural parts of the state. Instead, with robust incentive structures in place, it is likely that shortages could be resolved.
- Work group meetings indicated that Washington's Food Animal Veterinarian Conditional Scholarship program, authorized in 2008 but never funded, should be immediately funded by the Legislature to provide a financial incentive for drawing future veterinarians to rural areas of Washington.
- Even if incentives are implemented to draw new veterinarians into rural parts of Washington, many new veterinarians would likely have reservations about their ability to care for large animals effectively. These results from this section and prior sections of the report support the assertion that any effort in Washington to address the large animal veterinarian shortage must include both incentives to draw veterinarians into rural parts of the state alongside rebuilding efforts by WSU for their large animal training.

Sustaining Successful Rural, Large Animal Practices

Even when DVM students are successfully transitioned into Washington's rural and large animal veterinary practices, they often face considerable challenges that prevent them from remaining in these positions for the long term. Rather, many rural and large animal veterinarians relocate to larger metropolitan areas and/or transition to working primarily or exclusively with companion animals. The reasons for making such career changes are linked to numerous factors identified by the work group, to include the following:

1. On-the-job conditions for large animal veterinarians practicing in rural areas often involve considerable travel from farm to farm, long work hours, the requirement to remain on call around the clock, physically demanding labor, loneliness, and the stress of managing a rural practice. These conditions often prevent the work-life balance expected by newer generations of veterinarians.
2. Rural practices in Washington could face potential competition from large scale telemedicine practices which may operate outside Washington State, sometimes in ways that violate existing WACs.
3. There is no universal, successful model in place for integration of veterinary technicians into rural and large animal practices to help balance demanding workloads.
4. Rural communities often lack professional work opportunities for veterinarians' spouses/partners, creating challenges for long term veterinary careers in rural areas.

Work Group Findings on Long-Term Sustainability

While addressing the pipeline challenges, the veterinary school experience, and the transition of new graduates into veterinary practice are all critical elements of ensuring a steady supply of veterinarians to rural areas, sustaining the practices that anchor rural veterinary care requires its own set of interventions. Work group discussions on this topic examined regulatory environments, financial viability, workforce composition, and data infrastructure, which collectively determine whether rural and large animal practices can remain operational over time.

Telemedicine Without an Established Veterinary Client Patient Relationship (VCPR)

Telemedicine, which encompasses virtual care including phone consultations, video calls, and emergency counsel following an established in-person examination, emerged as an early and recurring concern among work group members. Several work group members expressed their opposition to the possibility of telemedicine being provided to clients in the state without an established Veterinary Client Patient Relationship (VCPR), which is defined in part by state law as requiring at least one in-person examination

per year. Some members are concerned that if the in-person component of the VCPR is eroded or eliminated, veterinarians located outside Washington could prescribe medications and mail them to clients following a remote video consultation without conducting a proper in-person assessment. This approach could generate risks to food safety and animal well-being, and broad access to consultations, drugs, and vaccines through telehealth channels could undermine the business model of rural veterinarians, further threatening the sustainability of their practices.

These members, however, emphasized that as long as the VCPR is established annually and strong enforcement mechanisms exist for violations, telemedicine may not pose a significant problem. Members noted that telemedicine may offer practical support in some rural settings while also raising concerns about oversight and unintended consequences of a weakened VCPR protocol for large animal practices.

The Absence of a Robust Veterinary Technician Workforce

The role of veterinary technicians in sustaining rural practices was a recurring theme among the work group. Work group members noted the absence of robust training models for technicians suited to large animal settings and raised concern about a technician-to-veterinarian ratio of roughly one to four, with many technicians not trained for large animal care. Confusion about the respective tasks of technicians and licensed practitioners was also raised, with members anticipating that updated board guidance would help clarify these boundaries. While members noted that rural and large animal practices face technician shortages, existing technicians are frequently underutilized due to practice culture, unclear role definitions, or limited opportunities to apply their skills.

A Lack of Succession Planning and Workforce Renewal Erodes Rural, Large Animal Practices

A recurring concern throughout work group discussions was the long-term sustainability of rural and large animal veterinary practices as many established practitioners approach retirement age. Members noted that in many rural communities, veterinary services are provided by a small number of veterinarians whose eventual retirement could significantly reduce or eliminate local access to care if successors are not identified and prepared in advance. While workforce shortages are often discussed in terms of recruiting new veterinarians into rural practice, work group members emphasized that sustaining veterinary services also requires deliberate planning for ownership transitions, workforce replacement, and continuity of care within existing practices.

These concerns were particularly evident in discussions of cooperative and shared-service practice models, where participants described successful arrangements that have improved work-life balance, emergency coverage, and professional support among rural veterinarians. Members noted, however, that several of these practitioners are nearing retirement and have struggled to identify younger veterinarians interested in assuming ownership, purchasing practices, or continuing services in the same communities. Participants expressed concern that decades of local knowledge, client relationships, and community trust could be lost if transition plans are not developed before practitioners leave the workforce. Several factors may complicate succession planning, and these included high student debt burdens among new DVM graduates, limited exposure to practice ownership and business management during veterinary training, and a preference among many early-career veterinarians for collaborative practice environments rather than independent ownership. Members suggested that efforts to strengthen mentorship, expand rural training experiences, and support cooperative practice models may also improve the long-term viability of succession planning by creating clearer pathways for new graduates to enter established practices and eventually assume leadership roles.

Tools to Strengthen the Financial Viability of Rural Practices

The work group considered a range of financial tools to help rural and large animal practices remain viable in the long term. These included tax incentives, low-interest loans, loan forgiveness, cost-share programs,

grants, and direct support for facilities, vehicles, and equipment. Members discussed how these mechanisms could help practices maintain financial sustainability, offer competitive salaries, and bring on new graduates. The group also emphasized the importance of using precise and consistent language when defining eligible practice areas in any legislative or programmatic context, noting that terms such as food animal, livestock, large animal, and production animal carry different connotations and may affect who qualifies for support. Members emphasized the need for clearer administrative processes, stronger institutional support, and alignment with legislative priorities. The role of external organizations in advocating for funding was also discussed, with members noting that industry groups and professional associations may be important partners in advancing these efforts.

Improving Data Infrastructure: Workforce Data, Shortage Mapping, and the "Find-A-Vet" Dashboard

The work group discussed the potential development of a statewide public dashboard modeled on Indiana's Find-A-Vet tool which would allow the public and policymakers to identify veterinary service gaps across the state and make it easier for livestock producers to find veterinary care nearby. Members saw potential value in improving transparency and informing resource allocation, but others raised concerns about data accuracy, ongoing maintenance, cost, and duplication of efforts already underway through other organizations. The group also discussed improving data collection through the licensing process, including adding targeted questions about hiring needs, practice capacity, and shortage designations. Members noted that current definitions of shortage areas are inconsistent across state and federal frameworks, and that more practical, regularly updated information is needed to guide policy decisions. Members considered whether annual licensing questions, accreditation data, membership directories, or other mechanisms could help identify where food animal, livestock, or rural veterinary services are available. Members acknowledged that data collection efforts may raise concerns about accuracy, privacy, and how information is ultimately used, and that any approach would need to account for these considerations.

Across these discussions, a clear consensus emerged that sustaining rural and large animal practices requires more than individual financial incentives. It demands a coordinated approach that addresses regulatory stability, practice-level financial support, technician workforce development, and improved data infrastructure. Members consistently emphasized that clearer processes, stronger institutional engagement, and meaningful collaboration among the veterinary college, industry stakeholders, and state legislators will be essential to making any of these efforts durable over time.

Veterinary Cooperative Models to Address Professional Isolation

The work group discussed examples of how cooperative models can help address the isolation that often accompanies rural large animal practice. Work group members shared information about the Yakima Valley dairy system, where five or six veterinarians developed a cooperative structure that allows them to maintain separate clinics while sharing emergency calls and covering for one another’s service areas as needed. This arrangement has reduced after-hours workloads and strengthened mentorship, networking, and community among practitioners. However, succession planning has become a growing concern as these veterinarians approach retirement with no clear replacements in the pipeline. Encouraging veterinary practices in rural areas to adopt this kind of cooperative model in concert with reinforcing the pipeline of veterinarians into these areas of the state could address immediate shortages in some areas and create the foundation for long-term sustainability of rural mixed or large animal practices.

Focus Group Findings on Long-Term Sustainability

Focus group participants identified several factors affecting the long-term sustainability of rural, large animal veterinary practice in Washington. Discussions concentrated on four primary themes: 1) burnout

and workload demands, 2) the economic viability of rural veterinary practice, 3) policy and regulatory barriers, and 4) the need for greater awareness and advocacy regarding the role of large animal veterinarians in supporting agricultural communities. Table 17 presents a list of these themes and their summary content.

Table 17: Focus Group Findings on Long-Term Sustainability

Focus Group Content Themes
Burnout and Workload Threaten Retention
• Emergency coverage • On-call demands • Work-life balance • Professional isolation
Economic Viability Remains a Long-Term Concern
• Keeping veterinarians in practice • Maintaining clinics • Sustaining service availability
Policy and Regulatory Barriers affect Practice Sustainability
• Telemedicine • Veterinary Client Patient Relationship (VCPR) requirements • Enforcement concerns • Regulatory environment
Greater Policy Awareness and Advocacy are Needed
• Educating legislators • Coordination among organizations • Agricultural sustainability

Burnout and Workload Conditions Threaten Retention

Participants expressed concern that the demands of rural, large animal practice can contribute to burnout and challenges with long-term retention. Practitioners described emergency coverage responsibilities, extensive on-call demands, and difficulties maintaining work-life balance as persistent challenges within rural practice settings. Moreover, veterinarians who work in some rural communities may be doubly burdened with professional isolation because they have few colleagues and limited access to support networks. Collectively, these factors contribute to attrition and challenge retaining large animal veterinarians in rural settings over time.

Economic Viability Remains a Long-Term Concern

The long-term economic sustainability of rural veterinary practice was also a noted concern. Participants, for example, talked about the difficulties associated with maintaining financially viable clinics in some agricultural communities because of fluctuating markets, operating costs, and the need to monitor that there is sufficient demand for veterinary services. The long-term viability of large animal, rural practices involves attracting new veterinarians to rural communities but also, requires conditions (including ensuring steady clientele) that allow practices to remain financial sustainable over time.

Policy and Regulatory Barriers affect Practice Sustainability

Several policy and regulatory issues were raised by focus group participants. These discussions centered on telemedicine policies, Veterinary Client Patient Relationship (VCPR) requirements, and the larger regulatory environment governing veterinary practice. Some participants expressed concern that existing regulations may limit flexibility in providing services to rural communities or create challenges when competing with veterinarians across state lines. Concerns about unlicensed individuals performing

veterinary work were also offered and the availability of reporting and enforcement mechanisms to address these situations were a point for discussion.

Greater Policy Awareness and Advocacy are Needed

A final theme focused on the need to increase awareness among policymakers and the general public regarding the importance of veterinary services to agricultural production, food systems, and rural communities. Participants emphasized the value of educating legislators and other decision-makers about workforce shortages and the challenges that face rural, large animal veterinary practice. Participant discussion in this area highlighted the importance of coordination among veterinary organizations, educational institutions, industry stakeholders, and other advocates to ensure that the needs of rural veterinary communities are effectively communicated and addressed.

Key Takeaways about the Sustainability of Washington's Rural, Large Animal Veterinarians

Based on the collective findings from the work group, as well as the focus groups conducted with practicing rural, large animal veterinarians, below is a summary of key takeaways regarding the sustainability of Washington's rural, large animal veterinarians.

- Large animal veterinarians servicing rural areas in Washington State often face difficult economic conditions and earn considerably less income than their small animal counterparts who practice in more populous urban and suburban areas; in some cases, these pressures cause rural veterinarians to shift emphasis to small animals and/or leave rural areas altogether.
- Telemedicine practices, both those located inside and outside Washington State, may further deteriorate the economic conditions needed to support rural veterinarians; these practices threaten to capture key revenue from rural veterinarians who often operate on small margins.
- Large animal veterinarians servicing Washington's rural areas often face difficult work conditions— long hours, physically demanding tasks, considerable travel, and the stress of managing a small business with limited financial resources. Collectively, these conditions negatively impact work-life-balance, leading to burnout and professional attrition.
- Veterinary technicians are underutilized by rural, large animal veterinarians and may serve as a viable mechanism for helping these veterinarians to achieve work-life balance and to sustain their practices in the long-term.
- Large animal practices in rural areas of Washington often face financial roadblocks for updating facilities and equipment, making it more difficult to support business improvements, adopt innovative veterinary practices, and recruit new DVM graduates.

SUMMARY OF FINDINGS AND RECOMMENDATIONS FOR ADDRESSING THE SHORTAGE

The sections that follow provide a summary of key findings pertaining to each of the four domains as discussed in the body of the report:

1. Pipeline of Washington's prospective DVM students
2. Veterinary school experience
3. Transition from veterinary school to rural, large animal practice
4. Sustainability of rural, large animal practices

The findings draw from multiple sources of data collected and analyzed over the life of the project: 1) content generated from work group meetings, 2) College of Veterinary Medicine DVM applicant data, 3) current DVM student self-report survey results, and 4) qualitative data from two focus groups with

practicing rural, large animal veterinarians. After key findings are summarized, work group recommendations are presented; these recommendations focus on concrete, actionable steps generated to remedy the multifaceted challenges contributing to the shortage of large animal veterinarians in rural Washington. Recommendations are divided into two categories— those for the Washington State Legislature and those for Washington State University— and *rank ordered according to priority*. Each recommendation is followed by guidance for implementation.

Summary of Key Study Findings

1. Pipeline of Washington's Prospective DVM Students

- WSU's DVM program received 10,393 applications between 2021 and 2025, during which time the number of applicants grew 89 percent.
- Long term trends, both nationally and in Washington, indicate reduced youth exposure to, and interest in, agricultural animals in rural environments.
- Among all applicants to Washington State University's (WSU) DVM program from 2021 to 2025, only 1 in 7 indicated agricultural/food animals as their primary species interest; instead, the large majority indicated small animals (companion animals), wildlife, equine, and exotic pets.
- Although primary interest in agricultural/food animals was limited, more than 1 in 3 applicants indicated a mixed animal interest, which included both small animals and agricultural/food animals.
- Across five years of data (2021-2025), in-state applicants to WSU's DVM program were predominantly from Washington's urban counties; the number of these applicants from Washington's more rural counties was limited.
- Prospective students from rural settings and who had prior experience working with agricultural animals were viewed by work group members and practicing rural veterinarians as strong candidates for becoming large animal veterinarians in rural areas of Washington.
- Work group discussions and focus groups identified considerable barriers to entering rural, large animal veterinary practice, including financial disincentives and limited early exposure through youth agricultural programs. These barriers may negatively impact the pipeline of prospective DVM students.
- WSU's Animal Science program, which has served as a primary feeder program to the College of Veterinary Medicine's DVM program, offers limited hands-on experience with agricultural animals, both generally and in herd settings.
- WSU's DVM program has limited presence at external events involving large/agricultural animals, such as judging competitions that take place across the state.

2. Veterinary School Experience

- Washington State University's (WSU) College of Veterinary Medicine has not received an increase in state funding to support the expansion of DVM program seats reserved specifically for Washington State resident applicants in more than 20 years.
- WSU's College of Veterinary Medicine has recently lost key faculty that have historically supported agricultural animal education.
- Approximately 8 out of 10 DVM student survey participants rated their agricultural/food animal training as inadequate, and this was consistent across gender, year in the program, prior experience, and species interest.

- Among DVM students who reported they could be incentivized to shift their area of interest to agricultural/food animals, more hands-on training with, and exposure to, large animals was the second most prevalent factor they identified.
- More than 2/3^{rds} of all DVM student survey respondents would have liked a certificate program that provides training and experiential opportunities for learning to work with agricultural/food animals in a rural environment.
- Practicing rural/large animal veterinarians expressed concern that recent DVM graduates lack sufficient hands-on experience for working with large animals; survey responses supported this sentiment and also revealed students' lack of exposure has reduced their confidence and willingness to work with these animals.
- Many practicing rural/large animal veterinarians expressed a willingness to assist with providing large animal experiences for DVM students through their own practices.

3. Transition from Veterinary School to Large Animal Practice

- Nationally, new DVM graduates carry more than $200,000 in student loan debt.
- Large animal veterinarians currently practicing in Washington's rural areas described the transition from veterinary school to large animal practice as characterized by significant financial burden; this often propels new veterinarians to seek employment in more populated geographic locations and in settings that focus on small animals, where the earning potential is considerably higher.
- Educational debt and student loan repayment was the second most common barrier for starting a new career among DVM student survey participants. For those participants with plans for a career in mixed animal practice, student loan repayment was the primary concern.
- Approximately 65% of DVM student survey participants reported their willingness to work in a *rurally located*, mixed animal practice where about half or more of their time would be spent working with agricultural/food animals in exchange for student loan forgiveness. Among fourth-year students interested in mixed animal practice (but who were not necessarily interested in working/living in a rural area), this percentage rose to 95%.
- Washington's Food Animal Veterinarian Conditional Scholarship Program (RCW 28B.121) was enacted in 2008 but has never been funded and has never placed DVM graduates into rural, large animal practices.
- When asked what could incentivize a shift in their focus from small animals, wildlife, or equine to agricultural/food animals or mixed animals, current DVM student survey participants most frequently cited a higher salary.

4. Sustainability of Rural, Large Animal Practices

- Large animal veterinarians servicing rural areas in Washington State often face difficult economic conditions and earn considerably less income than their small animal counterparts who practice in more populous urban and suburban areas; in some cases, these pressures cause rural veterinarians to shift emphasis to small animals and/or leave rural areas altogether.
- Corporate telemedicine practices, both those located inside and outside Washington State, may further deteriorate the economic conditions needed to support rural veterinarians; these practices threaten to capture key revenue from rural veterinarians who often operate on small margins.
- Large animal veterinarians servicing Washington's rural areas often face difficult work conditions— long hours, physically demanding tasks, considerable travel, and the stress of managing a small business with limited financial resources. Collectively, these conditions negatively impact work-life-balance, leading to burnout and professional attrition.

- Veterinary technicians are underutilized by rural, large animal veterinarians and may serve as a viable mechanism for helping these veterinarians to achieve work-life balance and to sustain their practices in the long-term.
- Large animal practices in rural areas of Washington often face financial roadblocks for updating facilities and equipment, making it more difficult to support business improvements, adopt innovative veterinary practices, and recruit new DVM graduates.

Recommendations for the Washington State Legislature

Priority 1

Fund WSU's Food Animal Veterinarian Conditional Scholarship Program (Chapter 28B.121 RCW) — supplemented by industry partnerships sought by the College of Veterinary Medicine — to award two qualifying, Washington-resident students annually.

How this should be implemented

- Create a standing appropriation of $65,832 (average annual tuition and fees for two students to attend the four-year DVM program) during the first funding cycle, $131,664 during the second funding cycle, $197,496 during the third funding cycle, and $263,328 for each cycle thereafter. By the fourth funding cycle, the scholarship will simultaneously support 8 students dedicated to the large animal veterinarian profession in Washington State effectively creating a guaranteed pipeline of new DVM graduates practicing large animal veterinary medicine in the state's high-need, rural locations.

Priority 2

Provide a dedicated line item in the state's operating budget to fund and support the reinvigoration of the College of Veterinary Medicine's Field Disease Investigation Unit (FDIU).

How this should be implemented

- The Legislature should provide permanent funding to support one new faculty position in the College of Veterinary Medicine along with annual expenditures for materials and equipment as necessary to effectively run the FDIU.
- Estimated annual cost of implementation: $290,000 + benefits

Priority 3

Provide additional funding to WSU's College of Veterinary Medicine to expand seat capacity reserved for Washington resident DVM students for the purpose of addressing the state's large animal veterinarian shortage.

How this should be implemented

- Increase annual funding to the College of Veterinary Medicine to convert 20 non-resident seats (which currently generate higher tuition) into seats reserved for Washington residents who may be interested in serving rural areas of the state.
- Annual implementation costs are estimated in the range of $1.2 million per year (about $60,000 per seat x 20 seats), reaching approximately $5 million annually once fully subscribed across four cohort years.

Priority 4

Increase funding for the Washington Future Farmers of America Association (FFA) and Washington 4-H programs for the purpose of exposing Washington youth to the agricultural/large animal setting.

How this should be implemented

- Fund the creation of an *Urban Ag 4-H Faculty* Advisor position with statewide responsibility to increase urban 4-H programming and reach. The position should expand youth exposure to large animals beyond Washington's more rural areas where 4-H programming tends to be strongest. The legislature should also increase funding to Washington FFA for the purpose of increasing urban youth involvement in Supervised Agricultural Experiences (SAE).

Priority 5

Create and fund a task force, if deemed necessary by WSU, of relevant stakeholders to determine whether, where, and how a College of Veterinary Medicine satellite location may be established to further enhance agricultural animal education and services.

How this should be implemented

- Create and fund, in the form of a legislative budget proviso, a task force whose responsibilities will entail creating recommendations for the implementation of a satellite location. Members of the task force should include the Dean of the College of Veterinary Medicine (or designee), the Washington State Veterinarian (or designee), the President of the Washington State Veterinary Medical Association (or designee), and members representing organizations from the following groups (at minimum): practicing veterinarians, farmers and ranchers, livestock producers, and community members who may be affected by a satellite location.

Priority 6

Fund the development of high-quality veterinary technician programs in Eastern Washington to better serve the state's rural population.

How this should be implemented

- Fund the development of an accredited Veterinary Technician program in Eastern Washington that includes a strong focus on large animal clinical rotations.
- Avoid introducing a new mid-level practitioner for the purpose of solving the state's large animal veterinarian shortage.

Implementation Status: The CVM has initiated planning for a veterinary technician program to be embedded at the college, with budget and tuition structures currently under development. Estimated implementation costs are approximately $575,000. Legislative funding would be necessary to fully establish and sustain an accredited program.

Priority 7

Support policy that prevents unhealthy competition between the state's rural veterinarians and telemedicine practices that are operating in the state's jurisdictions.

How this should be implemented

- Do not adopt new policies that further widen the conditions under which a Veterinary Client Patient Relationship (VCPR) can be established virtually. Maintain policies that prevent out-of-state, tele-medicine operations from practicing telehealth within Washington State.

Priority 8

Facilitate increased access to business development capital for large animal veterinarians practicing in rural areas.

How this should be implemented

- Expand Washington's existing Linked Deposit program to include veterinarians who are practicing agricultural veterinary medicine in rural areas of the state, allowing them to qualify for reduced interest rate loans.
- Fund, via a budget proviso, a grant program for rural veterinarians to support the purchase of equipment and facilities. The grants should range between $25,000 to $100,000, and the program should be administered by the Washington State Department of Agriculture (WSDA).

Recommendations for Washington State University

Priority 1

WSU's College of Veterinary Medicine should develop a new strategic plan to enhance the delivery of large/agricultural animal education across all four years of its DVM program.

How this should be implemented

- The College of Veterinary Medicine should create an interim position for the purpose of developing a new strategic plan for delivering agricultural animal education to first- through fourth-year DVM students. Consider further partnership with Animal Sciences, a certificate program, and a range of hands-on experiences.
- Estimated annual cost of implementation: $150,000 + benefits
    - One faculty position dedicated half-time to strategic planning with the remaining half-time dedicated to fulfilling Recommendation 6.

Priority 2

WSU's College of Veterinary Medicine should take immediate steps to expand availability of externships and preceptorships in select livestock-concentrated areas in Washington State to enhance agricultural animal education.

How this should be implemented

- Identify and implement new opportunities for preceptorships and externships in the livestock-concentrated areas across Washington State to address current faculty shortages as well as decreased caseload in the veterinary teaching hospital.

Implementation Status: The CVM has already begun work on this recommendation. The Preceptor Director, the Associate Dean of Professional Programs, and the lead veterinary extension faculty are leading this effort, with plans to expand stakeholder involvement and improve communication with students to reduce barriers to preceptorship and externship opportunities.

Priority 3

WSU's Animal Science program should increase undergraduate student opportunities for hands-on, experiential learning with large animals, to include opportunities for herd experience and production-based medicine.

How this should be implemented

- Expand and develop collaborative relationships with livestock producers in the immediate surrounding regions.
- The College of Veterinary Medicine should coordinate with the Animal Science program to seek opportunities for its DVM students to participate, alongside Animal Science students, in these hands-on experiences.
- To support internal opportunities for hands-on experiences, WSU should prioritize increased faculty and updated facilities for its Animal Science program.

Priority 4

WSU's College of Veterinary Medicine should identify and implement new hands-on learning opportunities in the livestock concentrated areas across Washington State.

How this should be implemented

- Leverage existing relationships to collaborate with relevant stakeholders (including the Dean of the College of Veterinary Medicine, WSU [or their designees], the Washington State Veterinarian [or their designees], and other key actors) to identify potential sites.
- Site visits should be conducted to determine the most strategic locations for *focused clinical teaching experiences*.

Priority 5

WSU's College of Veterinary Medicine should expand and strengthen collaborations with the University's Animal Science undergraduate degree program to enhance its outreach and facilitate targeted recruitment into the DVM graduate degree program.

How this should be implemented

- Coordinate recruitment efforts with CAHNRS' Animal Science undergraduate degree program to create a direct feeder of interested and qualified pre-veterinary students from the Animal Science program into the DVM program.

Implementation Status: During the course of this study, the CVM hired a full-time staff member to focus on engagement and outreach as part of a college-wide strategic plan. This staff member is currently working with CAHNRS to advance the coordination efforts included in this recommendation at no additional cost to the state.

Priority 6

WSU's College of Veterinary Medicine should coordinate with WSU's Animal Science program to increase its presence at youth-focused, large animal events and competitions statewide to conduct targeted recruitment well before prospective college students select an undergraduate major.

How this should be implemented

- The College of Veterinary Medicine, in coordination with the Animal Science program, should ensure routine presence of at least one faculty/clinical staff member, whose expertise or area of interest is focused on large animal medicine, at relevant agricultural events around the state.
- Presence at events may include judging livestock competitions, delivering informational presentations and workshops, and engaging in public relations activities.

Priority 7

WSU's College of Veterinary Medicine should further develop, expand, and leverage its existing Veterinary Paraprofessional Certificate Program for introducing high school students to the large animal veterinary profession.

How this should be implemented

- Design a new paraprofessional certificate that introduces high school students to information and skills related to large animal medicine and rural practice. The certificate should be actively promoted in high schools with specific emphasis among those located in Washington's rural communities that may not have faculty available to teach pre-veterinary and agricultural animal sciences.

Implementation Status: The College of Veterinary Medicine has already begun work on this recommendation with probable implementation scheduled for Fall, 2027 at no additional cost to the state.

Priority 8

The College of Veterinary Medicine should establish and host quarterly virtual town hall meetings with practicing rural veterinarians across the state.

How this should be implemented

- The Dean of the College of Veterinary Medicine may designate a faculty member with large animal medicine expertise to host quarterly, virtual town hall meetings. Rural veterinarians from diverse regions across the state should be invited to attend. Emphasis on the inclusion of practicing veterinarians who are willing to provide support and hands-on experience to DVM students interested in large animal medicine should be prioritized. Recurring town hall meetings should seek to create a formalized communication channel between educators and practitioners to ensure an exchange of critical feedback that is beneficial to both the College and the larger food animal veterinary community.

Implementation Status: The College of Veterinary Medicine has already begun work on this recommendation with implementation scheduled for Fall, 2026 at no additional cost to the state.

APPENDICES

Appendix A: The College of Veterinary Medicine's DVM Student Survey

1. What is your current status in the DVM program?
    a. First year student
    b. Second year student
    c. Third year student
    d. Fourth year student (clinical training and rotations)

2. When you **first entered WSU's DVM program**, what was your preferred career path?
    a. Private Clinical Practice (general or specialty)
    b. Non-Profit Shelter Practice (e.g., shelter or zoo)
    c. Research, Government or Academic Practice
    d. Other, please specify _____

3. Has your preferred career path changed since entering the program?
    a. Yes
    b. No

4. ***If YES to Q3:** What is your **current** preferred career path?
    a. Private Clinical Practice (general or specialty)
    b. Non-Profit Shelter Practice (e.g., shelter or zoo)
    c. Research, Government, or Academic Practice
    d. Other, please specify _____

5. ***If YES to Q3:** What was the primary reason for changing your preferred career path?
    _____
    _____

6. When you **first entered the program**, what was your general area of interest? Please **select only one** and **briefly explain** why you chose this area of interest.
    a. Wildlife _____
    b. Equine _____
    c. Small Animal (dogs, cats, exotic pets) _____
    d. Mixed Animal (**excluding** agricultural/food animals) _____
    e. Mixed Animal (**including** agricultural/food animals) _____
    f. Agricultural/Food Animals _____

7. Has your preferred general area of interest changed since entering the program?
    a. Yes
    b. No

8. ***If Q7 = YES:** What is your **current** general area of interest?
    a. Wildlife
    b. Equine
    c. Small Animal (dogs, cats, exotic pets)
    d. Mixed Animal (**excluding** agriculture/food animals)
    e. Mixed Animal (**including** agriculture/food animals)
    f. Agricultural/Food Animals

9. ***If Q7 = YES:** What was the primary reason for changing your general area of interest?
    _____
    _____

10. ***If [[Q7 = NO] and [Q6 = a, b, c, or d]] or [[Q7 = YES] and [Q8 = a, b, c, or d]]:** Many states are currently experiencing shortages of veterinarians who work with agricultural/food animals. Is there anything that might incentivize you to change your general area of interest to agricultural/food animals or mixed animals (including agricultural/food animals)?
    _____
    _____

11. Where do you plan to practice veterinary medicine upon graduating from WSU?
    a. Only in Washington State
    b. Washington State **and** other states (please specify which other state or states), _____
    c. **Not** in Washington State (Please specify which state or other states), _____
    d. Undecided

12. ***If Q11 = b**: Approximately what percentage of your practice time do you expect to spend in Washington State?
    a. 75% or more
    b. 50% - 74%
    c. 25% - 49%
    d. Less than 25%
    e. Unsure

13. What type of community would you prefer to work?
    a. Large city/urban area (50,000 or more people)
    b. Suburb near large city/urban area
    c. Large town (10,000 to 49,999 people)
    d. Small town (approximately 2,500 to 9,999 people)
    e. Rural area (open countryside or town with fewer than 2,500 people)

14. **If Q13 = LARGE CITY/URBAN AREA or SUBURB NEAR LARGE CITY/URBAN AREA or LARGE TOWN:** Many states are currently experiencing shortages of veterinarians who practice in rural areas. Is there anything that might incentivize you to work in a small town (2,500 to 9,999 people) or a rural area (fewer than 2,500 people)?
    a. Yes, please explain_____
    b. No, please explain_____

15. From the choices below, please select **ONLY THREE** main reasons for choosing the type of community where you would prefer to work.
    a. Proximity to family and friends
    b. Preference for urban/rural lifestyle (e.g., pace of life, community size)
    c. Access to recreational or outdoor activities
    d. Quality of schools or educational opportunities for family
    e. Overall quality of life and wellbeing
    f. Availability of jobs in my desired specialty or caseload type
    g. Opportunities for mentorship and professional development
    h. Potential for practice ownership or leadership roles
    i. Work-life balance (e.g., manageable hours, on-call duties)
    j. Salary and compensation levels
    k. Cost of living in the area
    l. Practice facilities and resources available
    m. Sense of community attachment or belonging
    n. Diversity and inclusivity in the community or practice
    o. Other, please specify _____

16. Did you have hands-on experience with the care of any large animals or agricultural/food animals before entering the DVM program?
    a. Yes
    b. No

17. ***If YES to Q16:** What animals did you have experience with? Check all that apply.
    a. Equine (e.g., horses, donkeys, mules)
    b. Bovine (e.g., cattle, including beef and dairy)
    c. Small Ruminants (e.g., sheep, goats)
    d. Swine/Pigs
    e. Camelids (e.g., llamas, alpacas)
    f. Other (please specify) _____

18. Please indicate how comfortable or uncomfortable you would feel working with agricultural/food animals (e.g. cattle, pigs, swine, sheep, goats).
    a. Very uncomfortable
    b. Uncomfortable

c. Neither comfortable nor uncomfortable
d. Comfortable
e. Very comfortable

19. So far in the DVM program, do you believe you've had adequate training for working with agricultural/food animals?
    a. Yes, please explain _____
    b. No, please explain_____

20. **If Q19 = a:** Which components of the DVM program have best supported your understanding of agricultural/food animals?
    a. Course work
    b. Field Disease Investigation Unit
    c. Hospital cases
    d. Externships in practice
    e. Other, please explain _____

21. If it were offered by WSU's DVM program, would you be interested in earning a certificate (concurrently with your DVM degree) that provided training and experiential opportunities for learning to work with agricultural/food animals in a rural environment?
    a. Yes (please explain) _____
    b. No (please explain) _____
    c. No Opinion/Not sure

22. What are some of the primary challenges you envision facing as you start your career? Check all that apply.
    a. Negotiating a good salary
    b. Running/owning a small business
    c. Paying student loans
    d. Practicing veterinary medicine without mentorship
    e. Achieving work-life balance
    f. Community acceptance
    g. Other, please explain _____

23. In exchange for having your student loans forgiven, would you be willing to work in a rurally located, mixed animal practice where about half or more of your time was spent working with agricultural/food animals?
    a. Yes, please explain _____
    b. No, please explain _____
    c. Not sure

24. When determining geographic locations for pursuing your career, is the availability of employment and/or schools for **other family members** a consideration that impacts your choice?
    a. Yes
    b. No
    c. Not sure

25. Please select the category or categories that best describe your race/ethnicity.
    a. American Indian/Alaska Native
    b. Asian
    c. Black/African American
    d. Hispanic/Latino
    e. Middle Eastern/North African
    f. Native Hawaiian/Pacific Islander
    g. White
    h. My race/ethnicity is not listed, please specify _____
    i. Prefer not to say

26. Please indicate your gender.
    a. Female
    b. Male
    c. Non-binary
    d. Prefer to self-describe (please specify)_____
    e. Prefer not to say

27. What was your undergraduate major?
    a. Animal Sciences
    b. Other Science (e.g., microbiology, biochemistry, physiology, chemistry)
    c. Social Science (e.g., sociology, psychology, economics)
    d. Other (please identify)_____

28. Have you ever lived in a rural area (open countryside or town with approximately 2,500 or fewer people) prior to beginning your college career?
    a. Yes
    b. No

29. ***If YES to Q28:** Approximately how many years did you live in a rural area?
    a. Less than 1 year
    b. 1-5 years
    c. More than 5 years

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