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THE FINANCIAL REALITY OF A CAREER IN VETERINARY MEDICINE FOR
KENTUCKY RESIDENTS

A Capstone Experience/Thesis Project Presented in Partial Fulfillment
of the Requirements for the Degree Bachelor of Science
with Mahurin Honors College Graduate Distinction
at Western Kentucky University

By:
Shelby Ackermann
May 2021

CE/T Committee:
Dr. Michael Stokes, Chair
Dr. Fred DeGraves
Ms. Cheryl Kirby-Stokes

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ABSTRACT

The financial burden of a veterinary medical education continues to increase with rising tuition prices. According to the American Veterinary Medical Association, the average educational debt of a veterinary student graduating in 2020 was approximately \$157,000 (Bain, 2020). Studies published by the Journal of the American Veterinary Medical Association suggest that suicide rates among veterinarians are higher than that of the general population and list debt as a primary contributing factor. The purpose of this project is to expose students to the financial reality of veterinary medicine, increase awareness of financial and career opportunities, and compile information gathered from interviews to assist Kentucky residents in making informed and financially sound decisions about a career in veterinary medicine. This project consists of interviews with admissions representatives and students from an institution offering reciprocity to Kentucky residents (Auburn University), a stateside school without reciprocity (University of California, Davis), an international veterinary school (St. George's University), and a private school without its own teaching hospital (Lincoln Memorial University). The types of veterinarians interviewed include a general practice owner, veterinary specialist, rural veterinarian, and a government-employed veterinarian. Although the debt resulting from veterinary school is daunting, it is not insurmountable and can be minimized.

I dedicate this study to Judy Morley, DVM, a trusted mentor who inspired a combined passion for veterinary medicine and helping others and who, even after passing, continues to open doors and introduce me to the most delightful, willing, and helpful veterinarians.

“We must grow our next generation of veterinarians.”

- Frank Vice, DVM

ACKNOWLEDGMENTS

I would like to thank my pre-veterinary advisor and first-reader, Dr. Michael Stokes, for his guidance and patience both with this project and throughout my four years at WKU.

This project would not have been possible without the help of the veterinarians, veterinary school representatives, and current students who took time out of their busy schedules to participate in this study. Your insights will help educate the next generation of veterinarians.

I would also like to thank the Mahurin Honors College for encouraging my curiosity, supporting my big dreams, and providing an opportunity to research and explore a topic about which I am truly passionate.

VITA

EDUCATION

Western Kentucky University, Bowling Green, KY May 2021
B.S. in Biology – Mahurin Honors College Graduate
Honors CE/T: *The Financial Reality of a Career in Veterinary
Medicine for Kentucky Residents*

Gallatin County High School, Warsaw, KY May 2017

PROFESSIONAL EXPERIENCE

Florence Veterinary Hospital Dec. 2017 –
Student Worker Present

WKU Department of Biology Jan. 2019 –
Lab Animal Caretaker May 2019

HONORS & AWARDS

Summa Cum Laude, WKU, May 2021
Biology Department Scholarship, WKU, June 2020
World Topper Scholarship, WKU, Oct. 2019
Cherry Presidential Scholar Finalist, WKU, May 2017

PROFESSIONAL MEMBERSHIPS

Kentucky Rural Health Association (KRHA)

INTERNATIONAL EXPERIENCES

Study Abroad Madrid, Spain Jan. 2020-
Council on International Educational Exchange Feb. 2020

Study Abroad Rome, Italy Feb. 2020-
Council on International Educational Exchange Mar. 2020

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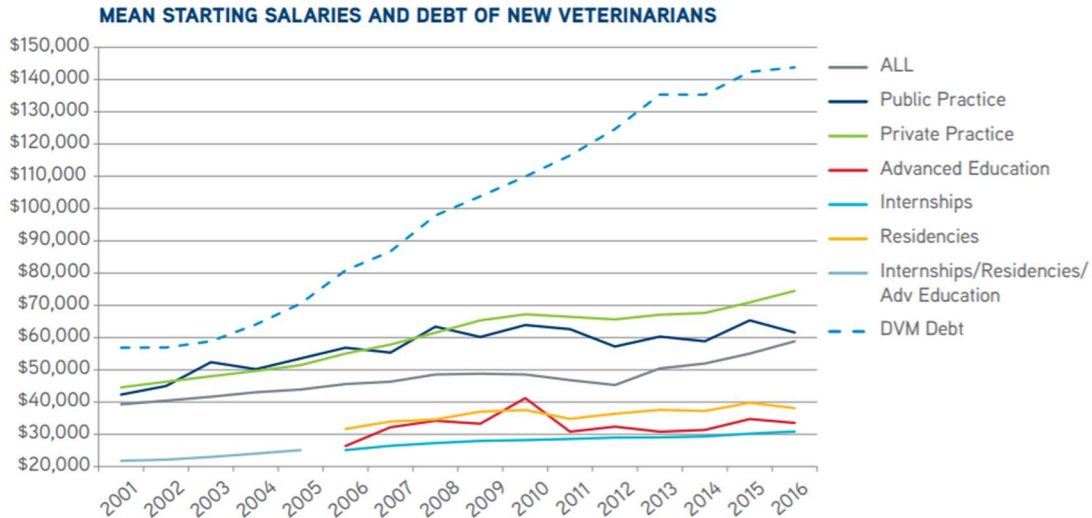
INTRODUCTION

The cost of obtaining a masters-level education or professional degree continues to increase, and with rising costs comes an increase in student debt as individuals seek methods for financing their education. In February 2021, the Federal Reserve Bank of St. Louis reported that the level of student loan debt in the United States exceeded \$1.7 trillion dollars (Federal Reserve, 2021). The financial burden of obtaining a professional degree has become particularly evident in the field of veterinary medicine. According to Bridgette Bain, PhD, Associate Director of Analytics at the American Veterinary Medical Association (AVMA), the average educational debt of a veterinary student graduating in 2020 was \$157,146; however, this value includes those students who graduated with zero student debt. The average amount of debt possessed by only those students who graduated with some level of financial debt exceeded \$180,000, with 20% of graduates' debt surpassing \$200,000 (Bain, 2020).

Paying off this student debt has become increasingly challenging for veterinary students due to increasing tuition costs, decreased state funding for higher education, and starting salaries that have not kept pace with the rising tuition costs (Larkin, 2012). According to the *2017 AVMA & AAVMC Report on the Market for Veterinary Education*, the debt generated from obtaining a DVM degree has increased by an average of \$5,400 per year for all students and \$6,200 for students reporting non-zero debt over the past sixteen years. During that same time period, the mean starting salary of new graduates increased by only \$1,220 per year (Dick et al., 2017). Figure 1 illustrates the difference

among the average debt of new veterinarians compared to starting salaries in a variety of veterinary career fields.

Figure 1. Mean Starting Salaries and Debt of New Veterinarians



From Dick, M. R., Bain, B., Knippenberg, R., Dutton, B., Ouedraogo, & F., Hansen, C. (2017). 2017 AVMA & AAVMC Report on the Market for Veterinary Education. American Veterinary Medical Association Veterinary Economics Division. [Annual Report], p. 36.

Students pursuing an advanced education, residency, or internship have reported the lowest starting salaries and highest debt load, while those transitioning directly to private practice tend to have the highest starting salaries. However, even the highest starting salaries do not keep pace with the increasing debt load. This trend is unsustainable and a source of additional issues within the field of veterinary medicine including negative effects on mental health (Tomasi, 2019).

According to Suzanne Tomasi DVM, MPH (2019) and the Epidemic Intelligence Service Center for Surveillance in conjunction with the National Institute for Occupational Safety and Health and the National Center for Injury Prevention and Control, suicide rates among veterinarians are higher than those of the general U.S. population. Death from suicide is 2.1 times more likely for male veterinarians when

compared to the general U.S. population and 3.5 times more likely for female veterinarians when compared to the general U.S. population (Tomasi, 2019). Results of a survey inquiring about veterinarian mental health, suicide risk factors, and practice-related stressors presented by the CDC Office of Public Health Preparedness revealed that approximately 1 in 11 veterinarians have experienced serious psychological distress and 1 in 6 have experienced suicidal ideation since graduating from veterinary school (Nett et. al., 2015). Additionally, veterinarians experience higher levels of anxiety, depression, and compassion fatigue (Tomasi, 2019). While there are several factors influencing this concern, student debt is listed as a primary contributing factor.

To reduce the financial burden in veterinary medicine, financial literacy and planning need to be discussed and developed earlier in an aspiring veterinarian's career. Thus, my project aims to be part of the conversation to provide students considering a career in veterinary medicine with relevant information pertaining to the financial implications of this field, with the hope that they will think about and proactively plan for their future financial requirements. By promoting financial health, we can support mental health, stimulate economic growth, and enhance the overall profession.

LITERATURE REVIEW

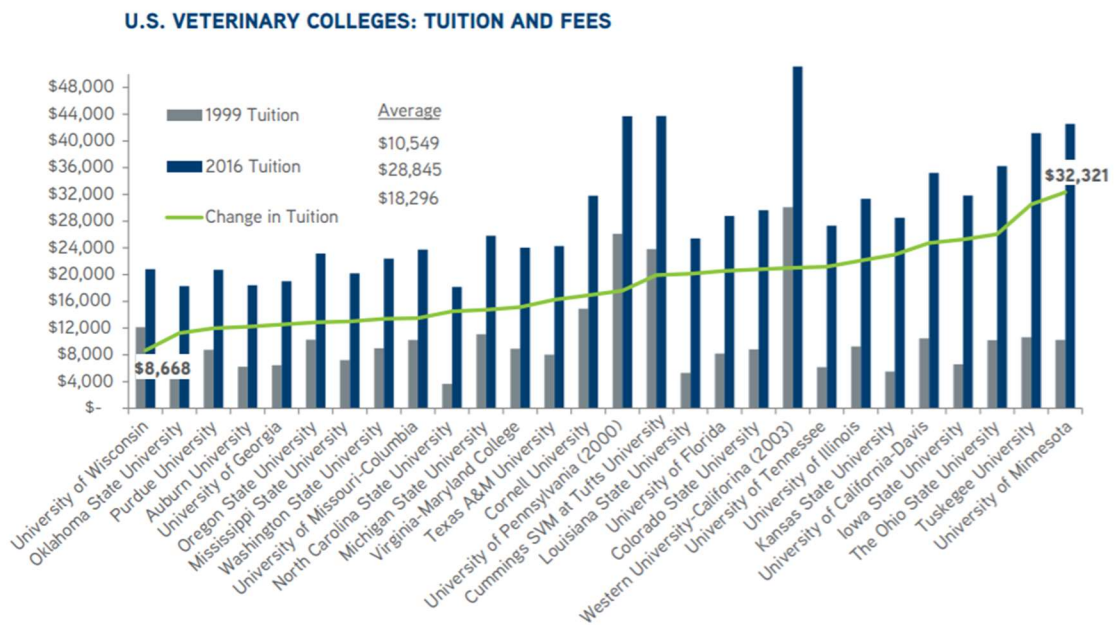
The AVMA Veterinary Economics Division and the Association of American Veterinary Medical Colleges Student Debt Initiative were established to combat the increasing educational debt and improve the economic standing of the veterinary medical field as a whole. These programs identified several “key performance indicators” that offer insight into the current economic status as well as future trends in the profession (Dick et al., 2017). One such indicator is the debt-to-income ratio which compares the cost of obtaining a Doctor of Veterinary Medicine degree to the subsequent income earned by a veterinarian. The goal of the Veterinary Economics Division is to decrease the debt-to-income ratio as a means of decreasing financial hardships for veterinary graduates and improving financial health in the profession.

The financial debt of obtaining a veterinary education can be reduced by educating students about the true cost of a DVM program, as well as practices and behaviors that will allow them to mitigate debt. The Association of American Veterinary Medical Colleges (AAVMC) conducts an annual survey of veterinary school applicants following the completion of the Veterinary Medical College Application Service (VMCAS) cycle to collect information about applicants, their experience with the application process, and their financial behaviors. The results of this survey suggest that there is a disconnect between applicants’ estimates of student debt and the reality of the debt they are about to assume. The average amount of debt estimated by applicants prior

to admission was nearly \$12,000 below the actual debt reported by the 2016 graduating class (Carr & Greenhill, 2015).

There are numerous factors contributing to the increased debt load assumed by veterinary students. The AVMA Veterinary Economics Division cites the increasing cost of tuition and fees as the primary cause (Dick et al., 2017). Figure 2 shows the changes in tuition prices from 1999 to 2016 for 28 of the 33 accredited veterinary schools in the United States.

Figure 2. Changes in Tuition from 1999 – 2016



From Dick, M. R., Bain, B., Knippenberg, R., Dutton, B., Ouedraogo, & F., Hansen, C. (2017). 2017 AVMA & AAVMC Report on the Market for Veterinary Education. American Veterinary Medical Association Veterinary Economics Division. [Annual Report], pg 37.

Lincoln Memorial University and Midwestern University are not listed in this diagram as the inaugural classes of these programs did not graduate until 2018. In more recent years, tuition increases have slowed as institutions have recognized the unsustainability of the current trend. Some universities are working to slow the rising

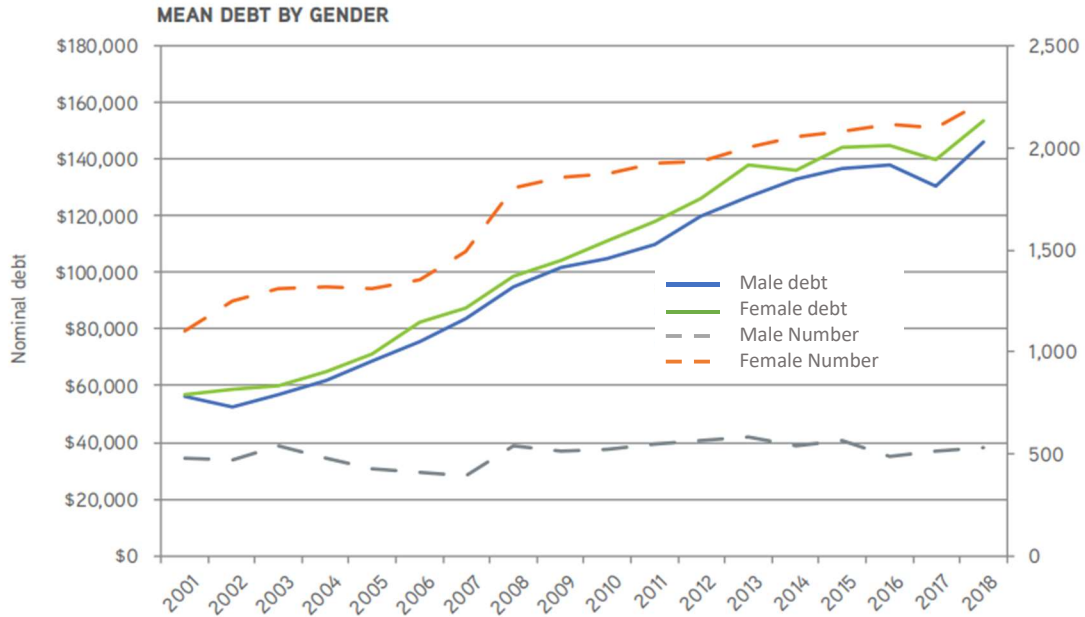
debt through the implementation of tuition freezes, securing scholarship dollars from outside sources, and increasing financial literacy among students.

Financial literacy programs that target specific populations and focus on specific topics with tangible results have been more effective in producing positive behavioral changes than broad programs focusing on general financial literacy (Carr & Greenhill, 2015). Such programs may include modules regarding retirement saving, borrowing and loan repayment, and home buying. The Department of Emergency Medicine at Harbor University of California, Los Angeles Medical Center tested the efficacy of four-hour educational modules pertaining to specific aspects of financial planning and real estate management on medical students. The results suggested that students were more confident in their abilities to manage these topics due to the specific training (Coates et al., 2012).

According to Dr. Lisa Greenhill (2015), Senior Director for Institutional Research and Diversity at the AAVMC, first-generation applicants and members of racial or ethnic groups recognized as underrepresented in veterinary medicine (URVM) report a significantly higher frequency of certain negative financial behaviors. These include failing to pay credit card payments in full which results in higher interest payments, receiving late fee charges, and not meeting with a financial advisor as reported in a survey inquiring about the financial behaviors of veterinary school applicants (Carr & Greenhill 2015). Additionally, female graduates experience higher debt and lower starting salaries than their male counterparts. In 2018, the mean debt of female graduates was approximately \$7,500 more than that of male graduates (Bain, 2019). Figure 3 compares the average debt of male and female graduates. Financial literacy programs

designed for each of these groups may encourage positive financial behaviors that could lead to a reduction in student debt.

Figure 3. Mean Debt by Gender



Modified from citation. Bain, B, Hansen, C. H., Ouedraogo, F., & Salois, M. (2019). 2019 AVMA Report on Economic State of the Veterinary Profession. American Veterinary Medical Association Veterinary Economics Division. [Annual Report], p. 19.

Because there is not a veterinary school in the Commonwealth of Kentucky, students pursuing a career in veterinary medicine must seek a Doctor of Veterinary Medicine degree from an out-of-state, AVMA-accredited veterinary school. This presents additional financial criteria that must be considered when selecting a college of veterinary medicine. There are 33 AVMA-accredited colleges of veterinary medicine in the United States and 21 AVMA-accredited international programs (Dick et al., 2017). The four veterinary schools selected for this study were chosen based on unique criteria as they relate to Kentucky resident applicants.

Located in Auburn, Alabama, Auburn University College of Veterinary Medicine (AUCVM) is considered the oldest veterinary school in the American South and has produced more than 7,000 veterinarians, nearly 2,000 of which have been Kentucky residents (Auburn representative 2021, pers. comm. 26 March). It is the only veterinary education program offering a reciprocity agreement with the Commonwealth of Kentucky which allows Kentucky students to pay in-state tuition for their veterinary education. The contract, established through the Southern Regional Education Board, reserves 38 seats in each class subsidized by the Kentucky Legislature for Kentucky students with the hope that graduates will return to the state of Kentucky to practice (Auburn, 2020). The University of California, Davis (UCD) was selected as a domestic, publicly funded veterinary school that does not have a contractual agreement with the state of Kentucky; however, it does allow students to establish residency after their first year in the program. UCD has been recognized as the number one veterinary science program in the United States by *U.S. News & World Report* (2020), as well as the international ranking agencies, *Academic Ranking of World Universities* and *QS World University Rankings* (Wood, 2019).

St. George's University School of Veterinary Medicine (SGU), located on the island of Grenada, was selected as an international, privately funded veterinary school. Of the 21 nondomestic colleges of veterinary medicine accredited by the AVMA Council on Education, SGU is one of the top two producers of U.S. veterinarians (Bain, 2020). Students who attend SGU do not complete clinical rotations on SGU's campus but instead complete clinicals at other universities contracted by SGU. Lincoln Memorial University College of Veterinary Medicine (LMU) was selected as a domestic, privately

funded school in which students also complete clinical rotations at off-campus locations. LMU has contracted clinics across the United States where students can complete their clinical rotations (Anonymous 2021, pers. comm. 28 January).

METHODOLOGY

The purpose of this study was to inform Kentucky students about the financial aspects of veterinary medicine through first-hand accounts from individuals with various perspectives – veterinary programs, current students, and practicing professionals – related to the field of veterinary medicine. Information was collected through a combination of research and interviews. The study was approached from the perspective of a Kentucky resident, and the majority of students and veterinarians interviewed were Kentucky residents at the time of their application to veterinary school, with two exceptions. There were no current Kentucky resident students attending the University of California Davis School of Veterinary Medicine. Therefore, an out-of-state student from a different state was interviewed for their perspective as a non-resident student attending UCD. Additionally, an out-of-state student from South Carolina, another state without a veterinary medical program, was interviewed for their perspective as an SGU student. Students selected for this project were primarily fourth-year students in the clinical rotations segment of their education; however, one was a first-year student at LMU.

The specific types of veterinarians interviewed for this study include a mixed animal general practice owner, a dermatology specialist, a rural Kentucky veterinarian, and a veterinary medical officer employed by the State of Kentucky. The veterinary programs selected for this study were chosen based on a Kentucky resident's perception of each program.

Interview questions were developed for each group of interview subjects. These questions were approved by the Western Kentucky University Institutional Review Board (WKU IRB) and are listed in Appendices A, B, and C. Questions directed to veterinary school representatives (Appendix A) were designed to gather information about the specific programs and financial resources available to students. The interview questions developed for current veterinary students (Appendix B) primarily focused on students' awareness of their own financial situations, their plans for repaying loans if they have any, and how finances have affected their educational decisions. Questions for veterinarians (Appendix C) were intended to explore the role finances have had in their professional careers. Interviews were conducted using Zoom Video Communication Software from January to April 2021.

RESULTS

I anticipated that Auburn CVM would be the most cost-efficient school of veterinary medicine for a Kentucky resident given its contract granting Kentucky students in-state tuition. UCD was anticipated to be the most expensive program under study based on previous comparisons of veterinary program total costs of attendance. The total cost of attendance for non-resident students at Davis is estimated as \$343,750 (Cost Comparison, 2021). Both LMU and SGU are private institutions and do not differentiate between resident and non-resident tuition. Both programs contract other universities or local clinics for student rotations, so I anticipated that the necessity to complete clinical rotations off campus would increase the overall cost of obtaining a veterinary degree from these schools.

Table 1 shows the total tuition and total cost of attendance of the four schools in this study (AAVMC *Cost Comparison*, 2020). These figures are based on information regarding tuition, fees, and costs of living collected by the AAVMC in the fall of 2019. The total tuition and total cost of attendance values for Auburn reflect the in-state tuition rates available to Kentucky residents. The UCD figures have been adjusted to reflect the potential to establish residency after the first year in the program. SGU and LMU do not differentiate between resident and non-resident students, so figures listed for these programs can be anticipated by Kentucky residents, as well as students from other states.

Table 1. Cost Comparison and Scholarship Availability of Four Programs Under Study

| | Auburn University | University of California - Davis | St. George's University | Lincoln Memorial University |
|---|--------------------------|---|--------------------------------|------------------------------------|
| Total tuition | \$89,893 | \$180,268 | \$185,134 | \$184,743 |
| Total cost of attendance | \$207,482 | \$343,750 | \$349,134 | \$325,129 |
| 2016-20 Tuition Change | 10.1% | 2.6% | 4.0% | 7.4% |
| First year students receiving scholarships | 8.1% | 100% | 11.8% | 8.3% |
| Average first year student scholarship award | \$4,669 | \$18,535 | \$6,815 | \$4,636 |
| Students receiving scholarships | 42.8% | 100% | 41.4% | 13.1% |
| 2019 Indebted graduates | 85.1% | 66.2% | 77.6% | 89.2% |
| Median debt of 2019 indebted graduates | \$151,737 | \$150,000 | \$291,421 | \$253,578 |

From the AAVMC *Cost Comparison Tool*, by the American Association of Veterinary Medical Colleges (2020), AVMA & AAVMC.

Auburn presents the lowest tuition and cost of attendance for Kentucky residents, but UCD is comparable to Auburn in terms of indebtedness. While the tuition costs of SGU and LMU are similar to that of UCD, the overall indebtedness of these two programs is more than \$100,000 greater than that of Auburn and UCD. This could be due to increased costs of living particularly at SGU where students live on an island, possible costs associated with relocating for clinical rotations, or decreased institutional financial support in the form of grants and scholarships. The increased tuition might require students to accept larger amounts in loans, thus accruing increased interest earlier in their education. It is also possible that some students who did not receive as much scholarship support during undergraduate studies may select these schools if they are not accepted to

their first-choice or in-state program. A lack of scholarships in undergrad may mean increased undergraduate debt prior to entering veterinary school.

INTERVIEW RESULTS

Veterinary Program Representative Interview Responses

Program representatives were asked a series of questions regarding the atmosphere, demographics, and financial statistics of their programs. Table 2 through Table 8 summarize representatives' responses to these questions which are listed in Appendix A.

Table 2

| What particular aspects differentiate your college of veterinary medicine from others? What makes it unique? | |
|---|---|
| Auburn | One of the oldest veterinary programs in the southern U.S. Upgraded facilities with first class research and faculty |
| UCD | One of the busiest teaching hospitals in the country that treats over 60,000 patients per year Students paired with a fourth year and exposed to clinicals during first year \$7,000 return-to-aid grant for all students Can establish California residency and pay in-state tuition after first year |
| SGU | Early hands-on curricular approach during first three years 31 affiliated universities in 5 countries for clinical rotations Dual accreditation through AVMA and RCVS Professional development and financial awareness integrated in curriculum |
| LMU | Contract clinics across the country allow flexibility in choosing location of clinical rotations Hands-on approach centered around building student confidence |

Table 3

| What do you believe attracts student to your school? | |
|---|--|
| Auburn | Facilities 98% NAVLE pass rate Hands-on experience |
| UCD | Block schedule (1-2 classes for 7-8 week periods) Large alumni and opportunity network Location close to Sacramento and San Francisco One of highest median starting salaries |
| SGU | 92% NAVLE pass rate Marine research lab Dual degree opportunities International program approach |
| LMU | Flexibility and options of selecting rotational clinics in fourth year Hands-on curricular approach |

Table 4

| Aspects contributing most to overall atmosphere of program | |
|---|--|
| Auburn | Collaboration and comradery among faculty and students |
| UCD | Comradery, faculty presence, community service focus |
| SGU | Friendly, strong community |
| LMU | Hospitality, "student centric" |

The purpose of questions inquiring about the atmosphere and attractive factors of each program served as a comparison between what program representatives believe attract students to each program and the factors that students report as responsible for their program decisions.

Table 5. Approximate number of Kentucky residents attending each program and factors affecting this statistic

| Program | Total number KY residents | Contributing factors |
|----------------|----------------------------------|--|
| Auburn | ~ 152 | In-state tuition |
| UCD | 0 | Programs offering in-state tuition more financially attractive |
| SGU | 6 | International approach |
| LMU | 46 | Proximity to Kentucky |

There were no current Kentucky residents attending UCD in the four current classes. UCD may not be the first program considered by Kentucky residents, particularly because Auburn offers in-state tuition to Kentucky residents. However, it is possible that Kentucky students may have established residency in California prior to applying to the program, thus their state of residency would no longer be listed as Kentucky.

Table 6. Approximate Number of Yearly Debt-Free Graduates as Reported by Program Representatives

| Program | Number of graduates | Percent of Class |
|----------------|----------------------------|-------------------------|
| Auburn | 10-12 | 10% |
| UCD | 25-37 | 17-25% |
| SGU | 34 | 19% |
| LMU | 9 | 7% |

Program representatives were asked to compare the debt of their program graduates to that of other schools of veterinary medicine. In response, the Auburn representative reported that the amount of student debt possessed by their graduates was below the national average (Auburn representative 2021, pers. comm. 26 March). UCD’s representative cited an AVMA report that listed UCD with the second least median debt out of the U.S. veterinary schools (Anonymous 2021, pers. comm. 18 February). SGU’s representatives suggested their debt level is above the national average according to the AVMA. LMU did not have data pertaining to this statistic but listed the U.S. Army

Veterinary Scholarship Program as an opportunity utilized by numerous LMU students to reduce their debt (Anonymous 2021, pers. comm. 28 January).

Figure 4 from the *2019 AVMA Report on Economic State of the Veterinary Profession* compares the median debt and median incomes of the 2018 graduating class by veterinary college. This figure only includes programs located in the United States, so SGU is not listed. A comparison of the indebtedness of graduates from the four programs in this study are listed in Table 1 under Median Debt of Indebted Graduates.

Figure 4. Median Debt & Median Income of 2018 Graduates by College

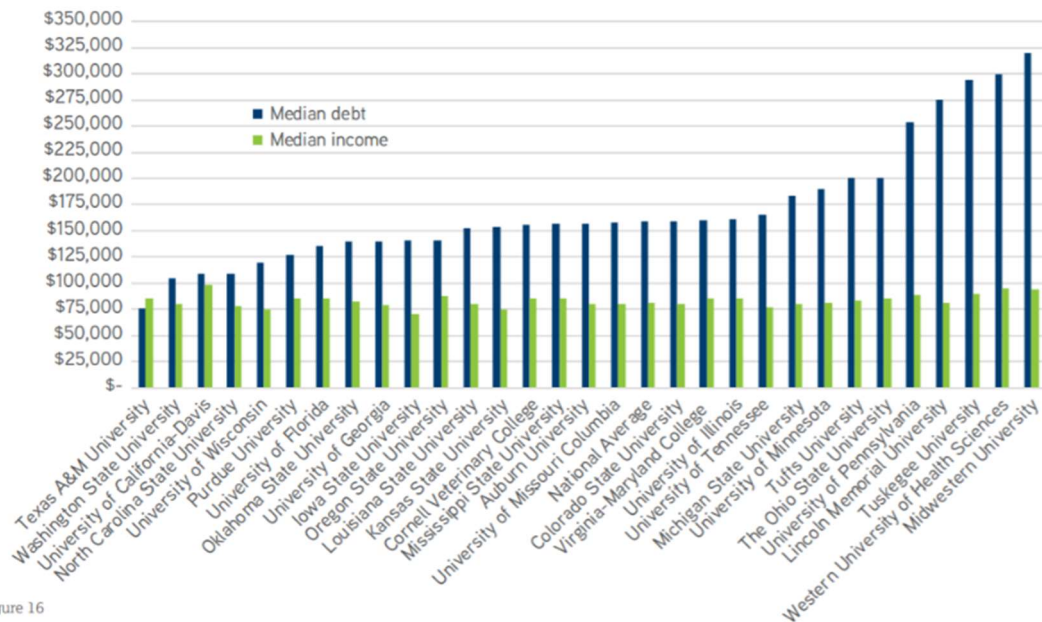


Figure 16

From Bain, B, Hansen, C. H., Ouedraogo, F., & Salois, M. (2019). *2019 AVMA Report on Economic State of the Veterinary Profession*. American Veterinary Medical Association Veterinary Economics Division. [Annual Report] p. 19.

Table 7

| Starting salary estimates of most recent graduating class for which data is available as reported by representatives | |
|---|---|
| Auburn | \$93,000 with contract value of \$104,000 |
| UCD | \$80,000-\$100,000 |
| SGU | No data |
| LMU | \$6,500 greater than national average (\$65,000-\$70,000) |

Auburn’s representative estimated the average base salaries of the Auburn class of 2021 to be approximately \$93,000 with a contract value of \$104,000. They credit the program’s contract negotiation preparation as a key factor in helping students secure contract benefits in addition to their starting base salary. UCD’s representative presented a \$80,000-\$100,000 range of starting salaries for graduates. SGU did not have data available for this statistic. Starting salaries for LMU graduates were presented as \$6,500 above the national average which was \$65,000-\$70,000 as of November 2020, and they credited this value to the early development of hands-on skills in their program.

Each program under study provides varying types of financial preparatory resources. First-year students at Auburn complete a mandatory business fundamentals course. Students have access to a financial advisor throughout their four years in the program, and alumni receive continued support as they purchase or start practices. UCD also offers courses related to practice and loan management, as well as additional financial resources free to students. The *Aggie Blue to Gold Financial Wellness Program* provides resources related to budgeting, debt management, and student loans (UC Davis 2021). UCD also utilizes the online financial education platform from Drip Learning Technologies, LLC, *Drip.Vet*, to educate students on financial wellness, budget development, and paying for veterinary school. SGU incorporates a six-course

professional development series that includes modules on business and personal financial literacy to be completed during the first three years of their program. These courses are designed to teach business and loan management, as well as budgeting. In addition to a financial advisor and professional skills courses interwoven with financial literacy, LMU partners with Doctors Without Quarters, a company that specializes in helping graduate students manage their debt and hosts a financial planning event prior to commencement to ensure students have a financial plan outlined as they graduate.

When asked how important it is for pre-veterinary students to complete business related courses during their undergraduate coursework prior to entering veterinary school, representatives of Auburn, SGU, and LMU each stated that it is extremely important. SGU's representative discussed the difference between undergraduate students' ability to typically only borrow money for tuition; whereas graduate students can borrow larger principals to cover additional expenses (SGU representative 2021, pers. comm. 5 March). While UCD's representative suggested that previous business coursework was not extremely necessary, it would be beneficial to have a foundation in financial terminology upon entering veterinary school.

To mitigate student debt, program representatives strongly emphasized the importance of developing and implementing a budget. Additional advice included only borrowing what you need rather than accepting the full amount of funds available, apply to all possible scholarships, and consider a gap year to increase savings prior to entering veterinary school. Some representatives encouraged working during the semester if needed and if it could be managed in addition to coursework. However, some programs such as SGU do not typically permit student employment during the semester.

Each program begins preparing students for the financial requirements prior to admissions to increase transparency about the cost of veterinary school. Though students are made aware of the costs prior to entering, there are some expenses that students may fail to include in their budget. Such expenses may vary by program and may include extracurricular club dues, parking passes, costs of relocating to complete clinical rotations, or prior credit card debt.

Students at Auburn and UCD complete the majority of clinical rotations at the campus teaching hospitals, but also have opportunities to complete rotations elsewhere if they choose. LMU contracts clinics across the United States, but students also have the option to complete clinicals locally. Completing clinicals locally could reduce expenses if students wish to remain in their current housing. SGU contracts universities in the United States, Canada, Ireland, Australia, and the United Kingdom for student clinical opportunities. Though the SGU representatives did not have data supporting whether or not completing rotations at a location other than the SGU campus affected students' overall costs, they noted that students who complete their clinical year outside the United States are not eligible for federal loans (SGU representatives, 2021, pers. comm. 5 March). The SGU student interviewed in this study discussed the increase in their educational debt as a result of travel expenses and transitioning from life on the Island of Grenada to Auburn, Alabama where they are completing their clinical rotations. These expenses vary on an individual basis depending on the frequency of travel to and from the United States. Some students return home for summers and holidays while others remain on the island (SGU student 2021, pers. comm. 29 March).

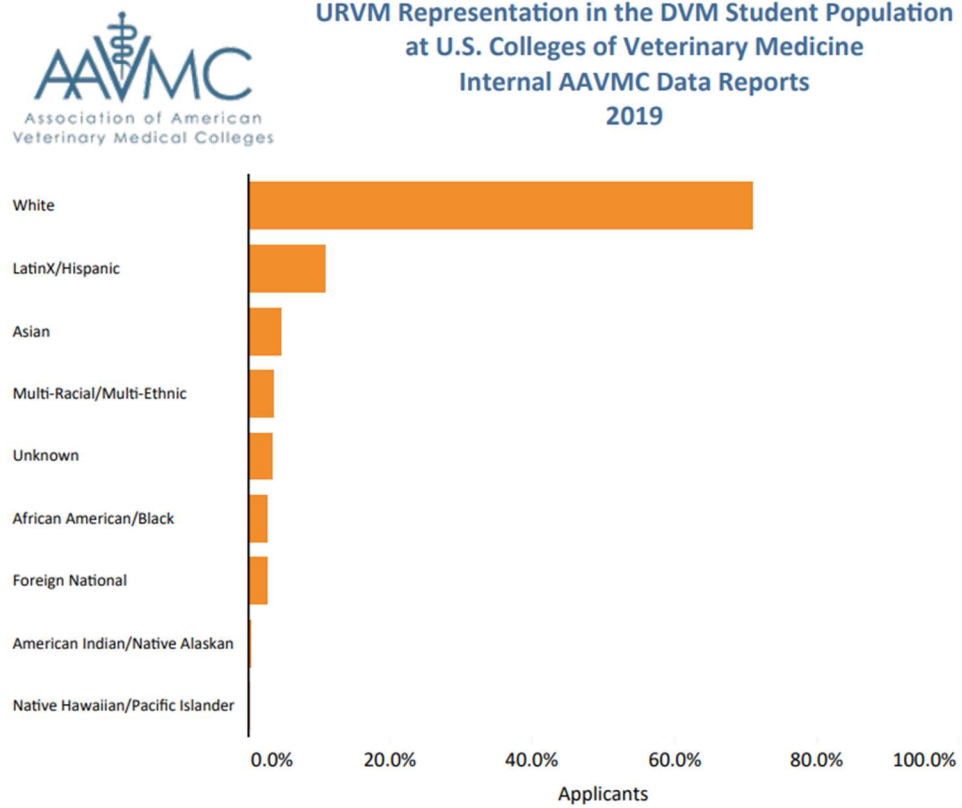
Table 8. Demographic Composition of Veterinary Programs

| | |
|---------------|---|
| Auburn | 80% female, 20% male “Students from all over the U.S.” |
| UCD | Female (82%), male (18%) Caucasian (82), Asian/Other Asian (31), Hispanic/Mexican American/Other Spanish (8), Mixed Race/Multi-Ethnic (28), African American/Black (1) |
| SGU | Female (82%), male (18%) U.S. (91%), Canada (4%), Grenada (2%), UK (1%), other (2%) |
| LMU | Female (76%), male (24%) 39% of students in Class of 2024 from Appalachian region |

Table 8 illustrates various aspects of the demographic composition of each program as presented by program representatives. In response to how program costs affect the demographic composition of the student body, Auburn’s representative suggested that it does not seem to have an effect as everyone can get student loans (Auburn representative 2021, pers. comm. 26 March). UCD’s representative believed that cost likely plays a small role, but they could not be certain to what extent. They believe that the admissions process has a greater impact than cost on the demographics of their program (Anonymous 2021, pers. comm. 18 February). SGU’s representatives, discussed the possible cost implications marriage could have on students’ expenses and suggested that students who move to the island with their families likely have increased expenses. They had not noticed other correlations between cost and demographics (SGU representative 2021, pers. comm. 5 March). LMU had the second largest applicant pool during the 2019-2020 VMCAS application cycle, which administration credits to increased recruitment, particularly in the Appalachian region and a desire to make their program “as diverse and as much of a melting pot as possible” (Anonymous 2021, pers. comm., 28 January). For this reason, LMU’s representative also did not believe that cost has a significant impact on the demographic composition of the LMU student body.

While many of the representatives seemed to think that the overall cost was not a major factor in determining the demographics of their program, the cost of simply applying to veterinary school should also be considered. Figure 5 shows the percentage of the veterinary student body composed of populations considered underrepresented in veterinary medicine. The AAVMC defines Underrepresented in Veterinary Medicine (URVM) populations as those "whose advancement in veterinary medicine has been impacted due to legal, cultural, or social climate impediments in the U.S., specifically by gender, race, ethnicity, geographic, socioeconomic, and educational disadvantages" (AAVMC Position Statements, 2018).

Figure 5

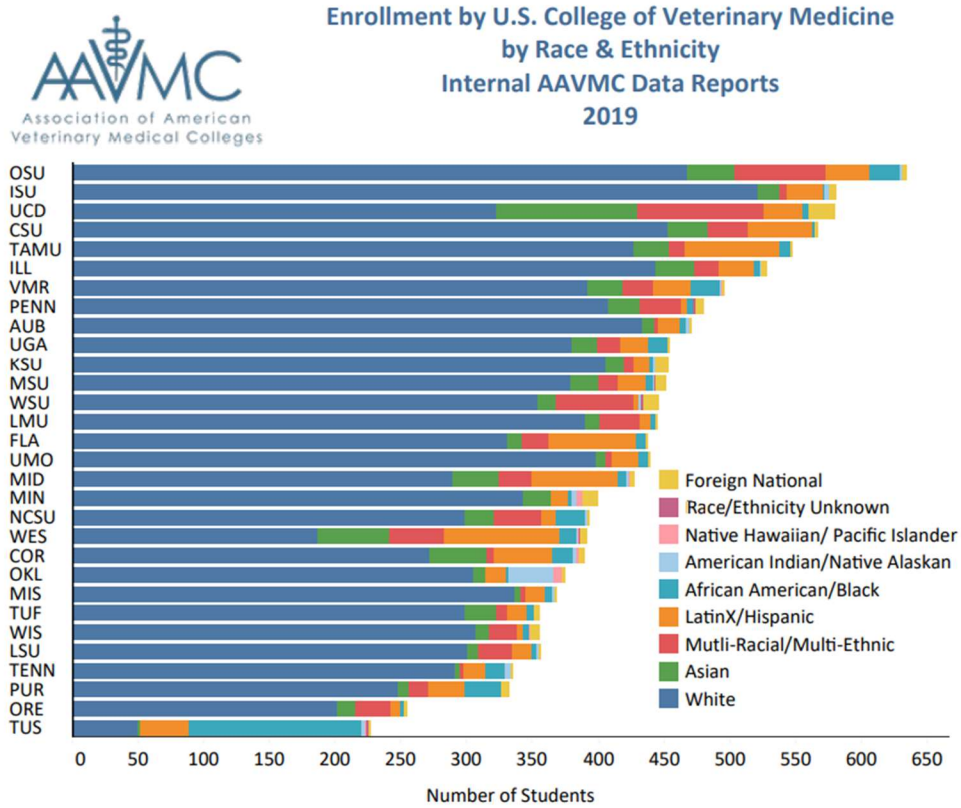


URVM: Underrepresented in Veterinary Medicine

From Greenhill, L. (2019). Annual Data Report 2018-2019. *Association of American Veterinary Medical Colleges*. 1-59.

Figure 6 illustrates enrollment by race and ethnicity at 30 of the U.S. colleges of veterinary medicine.

Figure 6



From Greenhill, L. (2019). Annual Data Report 2018-2019. *Association of American Veterinary Medical Colleges*. 1-59.

Veterinary Student Interview Responses

Current veterinary students from each program were asked a series of questions regarding their level of financial literacy, financial situation as it relates to veterinary school, and the effect finances have had on their career decisions. These questions are listed in Appendix B.

The fourth-year student from Auburn interviewed in this study selected Auburn’s program largely based on the in-state tuition opportunity established through the

Southern Regional Education Board. They discussed their interest in LMU prior to accepting their seat at Auburn, but the cost difference between the two programs was too much to ignore given their prior undergraduate debt (Auburn student 2021, pers. comm. 18 March).

The fourth-year UCD student selected the UCD School of Veterinary Medicine partially because it was less expensive than the veterinary program in their home state (UCD student 2021, pers. comm. 19 February). The SGU student interviewed was from South Carolina and is currently completing their clinical rotations at Auburn University CVM. Like Kentucky, South Carolina does not have an in-state veterinary school and does have contracts with other veterinary programs, but seats are limited. Because SGU's tuition was comparable to out-of-state tuition prices, the SGU student in this study chose to attend SGU (SGU student 2021, pers. comm. 29 March). The first-year student at LMU who participated in this study, selected this program after completing a gap year and discovering that LMU's program was one of the few they really liked (LMU student 2021, pers. comm. 25 March).

Students were asked to estimate the amount of debt they would owe upon completion of their veterinary medical education, the amount of debt accrued from undergraduate studies, and whether or not they were employed during veterinary school. The results are listed in Table 9.

Table 9. Estimated Student Debt

| Student | Estimated debt upon graduation | Estimated undergraduate debt | Employment during vet school |
|----------------|---------------------------------------|-------------------------------------|---|
| Auburn | \$200,000 | \$40,000 | Only summers |
| UCD | \$65,000-\$75,000 | \$0 | Dog walking, Summer research internship |
| SGU | \$300,000 | \$0 | Only summers |
| LMU | \$240,000 | Repaid during gap year | Only during breaks |

Factors Affecting Debt and How to Mitigate It

The student from Auburn reported undergraduate debt of approximately \$40,000 which has significantly contributed to their overall student debt. The student from UCD graduated a semester early from their undergraduate institution and used this additional semester to work and save money for veterinary school. They worked small jobs such as pet sitting or dog walking while in school and worked at clinics or participated in research internships over summer breaks. They noted that it is not uncommon for students at UCD to hold positions of employment during the semester. Students are often able to find employment opportunities tutoring, pet sitting, or working as technicians in the teaching hospital (UCD student 2021, pers. comm. 19 February).

While the price of tuition at SGU may be comparable to that of out-of-state rates for students in the United States, the cost of living on the Island of Grenada significantly increased the amount of student loans the SGU student required even with sharing inexpensive housing with a roommate (SGU student 2021, pers. comm. 29 March). In addition to cost of living, travel expenses are another factor that have intensified their

student loan debt. While this expense, varies on an individual basis, it is a factor that must be accounted for when considering an international veterinary program. The LMU student completed a gap year and worked at a local practice prior to entering veterinary school. This experience allowed them to settle their loan debt from undergrad and save money for veterinary school (LMU student 2021, pers. comm. 25 March).

Table 10. Types of Financial Assistance Received

| Auburn student | UCD student | SGU student | LMU student |
|-----------------------|-------------------------|--------------------|--------------------|
| Scholarships | UCD return-to-aid grant | Student loans | Student loans |
| Student Loans | External scholarships | Grants | |
| | Student loans | | |
| | Parental support | | |

Few scholarships are offered to first-year students at Auburn and LMU, and those available at SGU are extremely competitive. UCD offers an annual \$7,000 Return-to-Aid grant to all students, a \$28,000 value over four years. UCD's student also discussed the value of scholarships from external sources such as Zoetis and Merck, two veterinary pharmaceutical companies, as well as the AVMA and the California Veterinary Medical Association.

Table 11. Type of Medicine Pursued

| Student | Initial Interest | Type Pursued |
|----------------|-------------------------|-------------------------------|
| Auburn | Dermatology | Mixed animal practice |
| UCD | Research | Emergency/ General practice |
| SGU | Farm animal | Small animal private practice |
| LMU | Pathology | Mixed animal |

As illustrated in Table 11, the types of medicine students were initially interested in pursuing vary from the field they are currently pursuing. After considering a specialty in veterinary dermatology, the Auburn student is pursuing a near-future career in mixed animal practice, a decision that was largely due to the financial implications of pursuing an advanced education program. Students pursuing a master's degree, internship, or residency earn an average of \$30,000-\$50,000 less than new veterinarians entering the companion animal practice sector (Bain, 2019). The UCD student's previous interests were in research and possibly equine medicine, but during their time at UCD decided they would prefer the lifestyle and salary associated with small animal medicine (UCD student 2021, pers. comm. 19 February).

The SGU student is primarily interested in farm animal medicine, but due to their student debt from SGU and because "money isn't in large animal," accepted the job offer with the largest signing bonus in small animal practice (SGU student 2021, pers. comm 29 March). After considering a pathology specialty and realizing that it would greatly increase their level of student debt, the LMU student is pursuing mixed animal practice (LMU student 2021, pers. comm., 25 March).

Financial Resources Offered to Students

Auburn now requires students to complete a first-year business course, which the Auburn student says would have been very beneficial as a first-year student as they knew very little about loan management (2021, pers. comm. 18 March). UCD incorporates business and communication classes into the first through third year curriculum. These sessions cover topics including loan management, contract negotiations, interview skill development, and business literacy. The UCD student suggested this aspect of the curriculum made them feel more prepared and confident when negotiating job offers

(2021, pers. comm. 19 February). SGU offers students financial preparatory courses during the first and sixth terms of their program. The first emphasizes the cost of tuition, loan borrowing, and general financial literacy, while the second course focuses primarily on loan management and repayment strategies (SGU student 2021, pers. comm. 29 March). At LMU, a financial advisor educates students about expected student debt and strategies for saving (LMU student 2021, pers. comm. 25 March). This advisor meets with students to develop individualized financial plans throughout students' time at LMU.

Repaying Student Loans

Keeping expenses low and paying off as much debt as quickly as possible was a general consensus strategy among the students interviewed. Specific strategies discussed included federal income-based repayment strategies such as Pay As You Earn (PAYE) and Revised Pay As You Earn (REPAYE). These strategies limit payments to 10% of monthly income and forgive the remaining balance after 20 or 25 years but have different qualifying requirements and implications with regard to marriage status, repayment period, and interest subsidies (Nykiel, 2019).

Three of the four students interviewed stated they would not change their decisions to attend the undergraduate and veterinary programs they selected but would look for more opportunities to minimize their debt early. Methods for reducing debt discussed by students included undergraduate employment during the school year, purchasing a house during veterinary school rather than renting, and completing financial literacy courses. (2021, pers. comm. March). The SGU student interviewed suggested they would consider taking a gap year and moving to the state of a domestic veterinary

program to establish residency to decrease living expenses and increase savings prior to beginning veterinary school (SGU student 2021, pers. comm. 29 March).

Veterinarian Interview Responses

Four veterinarians from different professions within the field were asked a series of questions regarding the role finances have had in their professional careers. The specific types of veterinarians interviewed include a mixed animal general practice owner, a dermatology specialist, a rural Kentucky veterinarian, and a veterinary medical officer employed by the State of Kentucky. These questions are listed in Appendix C.

Table 12. Undergraduate and Veterinary School Attended

| Veterinarian | Undergraduate School | Veterinary School |
|-----------------------------|---------------------------------------|--------------------------|
| Mixed animal practice owner | Western Kentucky University | Auburn University CVM |
| Dermatology specialist | Vanderbilt University | Auburn University CVM |
| Rural practice owner | Western Kentucky University | Auburn University CVM |
| Government employed | Massachusetts Institute of Technology | Tuskegee University CVM |

The mixed animal general practice owner attended Western Kentucky University (WKU) for the full-ride scholarship they had been offered before receiving in-state tuition at Auburn CVM. Both choices were a result of the financial opportunities presented by each institution. The veterinary dermatologist attended Vanderbilt University as it is a prestigious school; however, given the choice, they would select a different undergraduate program that was less expensive and offered better veterinary school preparation (Anonymous 2021, pers. comm. 25 March). The rural Kentucky veterinarian works in a Type II Shortage Private Practice and Rural Area Food Animal Medicine region as designated by the United States Department of Agriculture National

Institute of Food and Agriculture (National Institute, 2021). They selected Western Kentucky University as their undergraduate program of study based on the scholarship opportunities and pre-veterinary program offered (2021, pers. comm. 2 April). The government employed veterinarian selected for this study is a veterinary medical officer with the Animal and Plant Health Inspection Service, and they selected Tuskegee University's CVM as it was one of the few schools graduating minority students at that time (2021, pers. comm. 25 February).

Three of the four veterinarians interviewed said they knew very little about the financial implications (cost and earnings) of a veterinary education prior to entering veterinary school. The rural veterinarian felt confident in their financial knowledge; however, this was the result of self-education rather than institutionally provided resources (2021, pers. comm. 2 April).

Table 13. Student Debt

| Veterinarian | Approximate Debt Amount | Number of Years to Repay |
|-----------------------------|--------------------------------|---------------------------------|
| Mixed animal practice owner | \$10,000 | 1 |
| Dermatology specialist | \$200,000 | 25-30 |
| Rural practice owner | \$35,000 | 1 |
| Government employed | \$50,000 | 25 |

Note: The year in which the veterinarians graduated from veterinary school and the interest rates of that time are not accounted for in this table.

Three of the veterinarians reported that the cost of veterinary school had little to no impact on the type of medicine they pursued; however, the dermatology specialist chose to specialize for the higher anticipated future salary after four years of earning \$25,000-\$30,000 as an intern and resident (Anonymous 2021, pers. comm. 25 March).

Table 14. Effect of Finances on Mental Health

| Veterinarian | During veterinary school | Current |
|-----------------------------|---|---|
| Mixed animal practice owner | Little to no effect | Little to no effect |
| Dermatology specialist | Finances are stressful | Think about them everyday |
| Rural practice owner | No | Business management is hardest on mental and emotional health |
| Government employed | No, it was a shared experience among students | - |

Table 14 illustrates veterinarians’ responses to the effect of finances on mental health and individual career decisions. Based on data reported by the AVMA, one would expect that veterinarians’ student debt and finances would have a significant effect on professionals’ mental health. Only one veterinarian reported that they considered their finances frequently, and that it had a strong influence in determining the type of medicine they pursued. The veterinarian with the largest amount of debt reported the greatest influence of finances. However, this study explored only a small subset of veterinarians, several of which graduated veterinary school without the amount of debt commonly possessed today. A larger population of veterinarians may yield different results. Each veterinarian affirmed that they would not change anything about their chosen career paths.

Two questions asked veterinarians to rank the importance of finance in veterinary medicine and the value of their veterinary education on a scale of 1-10, and the results are listed in Table 15 and Table 16.

Table 15

On a scale of 1-10 (1 being finances are not relevant to veterinary medicine and 10 being finances are crucial to success in veterinary medicine), how important do you believe finance is in the field of veterinary medicine?

| Veterinarian | Score | Comments |
|-----------------------------|--------------|---|
| Mixed animal practice owner | 9 | “High debt load weighs on the jobs you take, where you live, what you do, and emotionally.” |
| Dermatology specialist | 10 | “Don’t do it if you don’t love it because money is not an easy part of the profession.” |
| Rural practice owner | 7 | “Finances are everything.” “From a business standpoint, if the clinic doesn’t get paid, our workers can’t get paid.” |
| Government employed | 10 | - |

Table 16

On a scale of 1-10 (1 being “the education was not at all worth it” and 10 being “it was worth every penny”), do you feel the value of your education was worth the cost?

| Veterinarian | Score | Comments |
|-----------------------------|--------------|---|
| Mixed animal practice owner | 7 | “Couldn’t have the career without the education.” |
| Dermatology specialist | 10 | “Yes, for sure.” |
| Rural practice owner | 10 | “Absolutely every penny.” |
| Government employed | 10 | “Got me the job I have today.” “It’s how I paid for school.” |

When asked about the length of time each veterinarian would have to be employed before having the option to retire, there was a general sense of uncertainty. The mixed animal practice owner responded with, “No idea,” but estimated that they would work into their 60s full-time before then decreasing to part-time work (Mixed animal practice owner 2021, pers. comm., 17 March). The dermatologist was also unsure, guessing they would work through their 50s but not beyond the age of 60 (Anonymous 2021, pers. comm. 25 March). The rural veterinarian stated that they would likely never

retire but possibly shift their responsibilities into more business management rather than active practice as they age (Rural veterinarian 2021, pers. comm., 2 April). The government-employed veterinarian was also uncertain about the length of time before they would retire but discussed some of the benefits associated with their position. These included a 401k retirement plan, paid holidays, and separate sick and annual leave (Government employed veterinarian 2021, pers. comm., 25 February).

The rural veterinarian and the government-employed veterinarian each discussed the shortage of large animal veterinarians in specific rural areas. The USDA has created incentive programs for veterinarians who are willing to work for three years in these areas. Veterinarians who qualify receive a \$25,000 repayment towards their student loans for each of the three years they serve in these areas (Rural veterinarian 2021, pers. comm., 2 April).

Loan Repayment and Incentive Programs

Below is a list of loan repayment and incentive programs available to veterinarians. More information on these opportunities can be found on the *AVMA Scholarship, Loan Repayment and Forgiveness for Veterinary Medical Student Loans* website and *U.S. Army Medicine Benefits* website.

Veterinary Medicine Loan Repayment Program (VMLRP)

- Pays up to \$25,000 per year for 3 years towards qualified educational loans to eligible veterinarians who serve in National Institute of Food and Agriculture designated veterinary shortage regions (Veterinary Medicine Loan Repayment, 2021).

Public Service Loan Forgiveness Program (PSLF)

- This program forgives any debt remaining after 10 years of full-time employment in public service. Public service jobs include teachers, first responders, those working for tax-exempt charitable organizations, and government and military employment.

Federal Faculty Loan Repayment Program (AVMA Scholarship, 2021)

- Administered by the U.S. Department of Health and Human Services
- Repays up to \$40,000 in student loans for qualifying health professions faculty including veterinary medical college faculty
- Recipients must serve at an accredited health professions college or university for a 2 year minimum
- Matching funds should be dispersed from the educational institution of employment

U.S. Army Programs

The U.S. Army offers several financial incentive programs for veterinary students who are willing to serve in active-duty military or the army reserve. These are listed below.

Armed Forces F. Edward Hébert Armed Forces Health Professions Scholarship Program (HPSP)

- Students selected for this program receive full tuition at any AVMA accredited veterinary program plus a \$2,000 monthly stipend. Students participating in this program must fulfill an active-duty service obligation of one year for every year they receive the scholarship.

Army Active-Duty Health Professions Loan Repayment Program (ADHPLRP)

- Repays a maximum of \$120,000 over three years towards veterinary school student loans and requires military service after completion of the veterinary education program.

Army Specialty Pay

- Veterinarians who have earned board certification recognized by the AVMA can receive \$2,000 - \$5,000 through the Diplomate Board Certified Pay program.

Scholarship Opportunities

The American Veterinary Medical Foundation provides information pertaining to scholarship opportunities for veterinary students. Scholarships that students should consider are listed below, and more specific information pertaining to these awards can be found on the American Veterinary Medical Foundation website.

- Merck Animal Health Veterinary Student Scholarship Program
- Auxiliary to the AVMA Legacy Endowed Scholarship Program
- Harold Wetterberg Foundation Scholarship Program
- AVMA/AVMF 2nd Opportunity Summer Research Scholarship
- AVMA/AVMF Scholarship for Veterans
- AVMF/EveryCat Health Foundation Scholarship
- The Michael and Gail Ames Scholarship and The Panzero Family Scholarship
- Mildred Sylvester Scholarship
- Dr. Elinor McGrath Scholarship

Students should consider all possible available scholarship and grant opportunities available to help minimize student debt. Program representatives recommended searching for scholarship opportunities external to programs of interest, and the student who reported the least amount of student debt in this study also listed the highest number of scholarships and grants received.

DISCUSSION AND CONCLUSIONS

The current trend in which the amount of debt acquired for a veterinary medical education grows significantly faster than the starting salary of a career in veterinary medicine is unsustainable. The increased debt is largely due to increases in the costs of tuition and attendance coupled with decreased state and federal funding. It is not uncommon for students to graduate from veterinary school owing \$200,000 in student loan debt.

The purpose of this study was to gather information from a combination of primary and secondary sources and synthesize this information into a resource that will help students begin considering the financial requirements of a career in veterinary medicine. Veterinary program representatives, current students, and practicing professionals were interviewed to explore the role finances play in various aspects of the veterinary medical field.

Figures generated by the *AAVMC Cost Comparison Tool* revealed that, of the four programs included in this study, Auburn University CVM presents the lowest tuition and total cost of attendance for Kentucky residents. This was as expected because Auburn is the only program in this study offering in-state tuition to Kentucky residents. However, UCD is comparable to Auburn in terms of indebtedness, which may be a result of the ability to establish California residency after completing the first year of the program. While the tuition costs of SGU and LMU are similar to that of UCD, the overall

indebtedness of graduates of these programs is more than \$100,000 greater. The percent of indebted graduates listed by the *Cost Comparison Tool* differed slightly from those values reported by program representatives; however, this could be the result of drawing data from different classes.

Program representatives were asked a series of questions regarding the atmosphere, demographics, and financial statistics of their programs. Representatives were asked to list the factors they believe attract students to their program, and these were compared to the reasons why students selected the program they are attending. None of the program representatives believed the cost of their program has a significant impact on the demographic composition of their student body; however, veterinary programs and the field as a whole are primarily composed of individuals identifying as Caucasian/white and female. Future research could be done to explore the relationship between cost and diversity in the veterinary medical profession. If the costs of veterinary programs themselves are not an influencing factor, it is possible that the cost of simply applying could play a role.

Most AVMA schools use the Veterinary Medical College Application Service (VMCAS) as their primary application. The cost of applying to one veterinary program is \$220 with an additional cost for every subsequent school added. Students typically apply to more than one school to increase their chances of gaining acceptance to at least one, and the cost of applying to four programs is \$580 (AAVMC Application Fees, 2021). In addition to VMCAS fees, programs often require a supplemental application fee which may range from \$50-\$100. Most schools require the Graduate Record Examination (GRE) as a baseline entrance exam which adds an additional \$205 for students in the U.S.

Students should also consider fees associated with ordering official transcripts, as well as additional GRE fees charged for reporting GRE scores to schools. VMCAS has instituted a fee waiver program which covers the initial application fee of \$220; however, the number of waivers is limited and only available to qualified individuals (AAVMC Application Fees, 2021). The cost associated with applying to veterinary school adds up quickly and may limit students' opportunities.

The results of student interviews suggested that each student's program and career decisions were influenced by finances. The SGU student reported the largest estimated debt which has resulted largely from living expenses. They noted that the tuition at SGU is comparable to many out-of-state program tuition rates; however, the cost of living on an island significantly increased the amount of loans they required. The UCD student reported the lowest estimated debt which they credit to graduating a semester early from undergrad, parental financial support, and financial support from UC Davis. Students' initial career goals shifted in response to the financial implications and outlook of their intended fields. Students considering advanced education decided to pursue mixed animal practice due to the increased debt associated with internships and residency programs, while those considering careers related to large animal medicine accepted positions in small animal medicine primarily for an increased salary and more desirable lifestyle.

Only the SGU student suggested that they would possibly select a different veterinary program simply to decrease their student loan debt. It was hypothesized that costs associated with completing clinical rotations at locations other than the veterinary school campus would increase students' costs; however, the SGU and LMU representatives did not have data pertaining to this. The SGU student said that living

expenses on the island and travel costs significantly increased their overall expenses. To minimize their debt, students would have considered different housing options while in veterinary school, working during the semesters if possible, and a possible gap year to increase savings and establish residency in the state of their desired veterinary school. However, establishing residency in another state prior to gaining acceptance to a particular veterinary program could be a difficult decision when acceptance is uncertain.

Veterinarians recommended selecting an undergraduate program and veterinary school that would allow students to minimize debt. Three of the veterinarians reported that finances had little effect on the type of medicine they chose to pursue, as well as their mental and emotional health. However, business owners discussed the stress of managing a business and employing individuals. Based on AVMA data, one might expect finances to have a greater impact on veterinarian mental and emotional health; however, this study included only a small subset of veterinarians several of which graduated veterinary school without the amount of debt commonly possessed today. It would have been beneficial to inquire about the mental and emotional health of the students interviewed as well.

Students can mitigate their debt by first understanding the costs of veterinary school and then designing and implementing a plan to reduce their debt. When selecting a veterinary school, students should first consider programs where they can receive in-state tuition rates or establish residency after the first year. Students should only borrow what they need and account for living expenses, the cost of completing the VMCAS application, and current interest rates for the loans they plan to accept. It is also important to increase awareness of personal financial behaviors and thoroughly research careers of

interest, their debt and salary relationships, and programs that may be offered to subsidize expenses in particular career fields. While a veterinary medical education is expensive, the financial requirements are not insurmountable. With a more comprehensive understanding of the financial aspects of veterinary medicine, we can educate aspiring veterinarians and work to enhance the economic state of the veterinary profession.

LIMITATIONS

The diversity of paths in the veterinary medical field make it impossible to fully explore and compare every veterinary school and potential career path. Specific institutions and career paths intended to encompass a diverse sample of opportunities in veterinary medicine were chosen for this project. However, there are currently 33 AVMA accredited veterinary schools in the United States and 21 international institutions. A more thorough analysis would compare all of these institutions. Additionally, this study only included interviews with four veterinarians in specific careers. There are numerous paths within veterinary medicine that an individual could pursue. The intention of this study was to select specific careers that could encompass a wide range of opportunities.

The majority of the current veterinary school students interviewed were individuals in their fourth year of veterinary school. Interviewing first-year students to gauge the differences between financial literacy upon entering veterinary school as compared to those nearing completion of their veterinary education could be beneficial to future studies. Furthermore, it must be noted that the information presented here by veterinarians, program representatives, and students represents single individuals' experiences and opinions.

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APPENDIX A

Questions for Veterinary Program Representatives

1. What particular aspects differentiate your college of veterinary medicine from others? What makes it unique?
2. What do you believe attracts students to your school?
3. Describe the atmosphere or general attitude of your campus and its students.
 - a. What one or two aspects of your veterinary school contributes most to the overall atmosphere of your school?
4. What is the demographic composition of your college of veterinary medicine?
5. Approximately how many students from the state of Kentucky attend your veterinary school?
 - a. What factors do you believe affect this statistic?
6. On average, how many students graduate from your college of veterinary medicine debt free per year?
7. How does the student debt of your graduates compare to graduates of other schools of veterinary medicine?
8. What is the average and median starting salary of the most recent graduating class for which you have data?
9. Does your college of veterinary medicine offer financial preparatory courses to help students successfully manage their finances both during veterinary school and during their future veterinary career?

- a. If courses are offered, is there data supporting the effectiveness of these courses?
 - b. Is there an evident difference in the financial preparedness or success of students who utilize these courses as compared to those who do not?
10. How important do you think it is for pre-veterinary students to have completed a business course (finance, entrepreneurship, etc.) during their undergraduate coursework or prior to entering veterinary school?
11. What methods or practices would you recommend to help students avoid or mitigate student debt?
12. Have you noticed there being any additional required costs (Examples: necessary vaccines, cost of living, transportation, etc.) that students are typically unaware of or fail to consider upon entering veterinary school?
13. Do students complete clinical rotations on your institution's veterinary medical campus or are they required to complete rotations elsewhere?
- a. How does this aspect of their veterinary education affect students financially?
14. What effect does cost have on the demographic composition of your student body?
- a. Age, sex, ethnicity, race
15. Is there any other information which may be pertinent to this study that you would like to share?

APPENDIX B

Current Veterinary School Student Interview Questions

1. Why did you choose the vet school you are attending?
2. What type of medicine are you studying? What influenced this decision and what role if any did finances play in this decision?
3. Did you have student debt from your undergraduate education?
4. Will you have student debt upon graduating vet school? If so, what do you estimate your debt will be upon graduation with your veterinary degree?
5. Are you receiving any financial assistance (scholarships, loans, other)?
6. What financial resources if any (financial literacy classes, advisors, tools) does your school offer students?
7. Do/did you work during vet school?
8. How do you plan to pay off your student debt?
9. Based on finances, if you could go back in time, would you choose a different undergraduate or vet school? Please explain why or why not.
10. What are your career goals in 5 years? 10 years? Where do you want to be at retirement?
11. Advice and any additional information relevant to this study that you would like to share?

Appendix C

Veterinarian Interview Questions

1. Was there a single or few specific event(s) that made you decide to become a veterinarian? If so, what was it?
2. What veterinary school did you attend, and why did you choose that school?
3. Looking back, how much did you know about the financial implications (cost and earnings) of veterinary medicine when you decided to become a veterinarian?
4. What do you believe is the greatest issue in veterinary medicine currently?
 - a. What do you believe is the greatest challenge to becoming a veterinarian?
5. If you were choosing a career or particular direction in vet medicine now, what would it be and why?
6. Based on finances, would you choose a different undergraduate college or veterinary school?
7. Did you have any financial assistance during your undergraduate studies or vet school?
8. Did you graduate from veterinary school with student debt?
9. How many years did/will it take to pay off that debt?
10. How did the cost of vet school affect your career decisions upon graduation?
11. Describe your quality of life during vet school as compared to now?
12. Do you believe the cost of vet school affected you mentally or emotionally? What about your current financial situation as it pertains to veterinary medicine?

13. What financial advice do you have for students who are considering a career in veterinary medicine? For students applying to vet school or students who are currently in vet school?
14. On a scale of 1-10 (1 being finances are not relevant to veterinary medicine and 10 being finances are crucial to success in veterinary medicine), how important do you believe finance is in the field of veterinary medicine?
15. What do you think the biggest change in veterinary medicine will be in 10 or 20 years?
16. How many years will you have to work as a veterinarian before you have the option to retire? When did you begin saving for retirement?
17. On a scale of 1-10 (1 being “the education was not at all worth it” and 10 being “it was worth every penny”), do you feel the value of your education was worth the cost?

Practice Owner

1. Describe your responsibilities as a practice owner.
2. What is it like to start a practice from scratch?
3. When did you purchase your practice? Do you wish you had purchased it sooner or later?
4. What are the financial implications of owning a practice? (Cost vs. financial benefits)
 - a. What is the most significant financial impediment to owning a practice?
5. Describe a typical workday and workload.

Government Employed Veterinarian

1. Describe your typical workday or the routine tasks expected of your position.
2. What are the benefits, financial and other, of working for the government?
3. Are you familiar with the loan repayment programs for government employed veterinarians? Do you participate in any of these programs?

Specialist

1. At which school did you complete your residency?
2. What is the cost to income ratio of being a specialist? If you possessed student debt upon graduation, how does it compare to the pay of your current position?
3. How much more did your education cost as a result of specializing than it would have cost if you had not specialized?
4. Describe a typical workday/workload.
 - a. On average, how many patients do you see in a day?

Rural Kentucky Veterinarian

1. What is the cost to income ratio of being a rural Kentucky vet?
2. What programs are available to offset the financial burden of being a food animal vet?