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2014

## **AVMA Council on Education Self Study Report**

College of Veterinary Medicine

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AVMA COUNCIL ON EDUCATION

# Accreditation

## SELF-STUDY REPORT

Site Visit | March 1-5, 2015



**AVMA Council on Education Self Study Report**

**University of Tennessee  
College of Veterinary Medicine  
Site Visit: March 1-5, 2015**

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## Executive Summary

### Major Goals and Objectives of the College

The overarching college goal is to advance animal and human health. Strategies to achieve this goal focus primarily on advancing the professional DVM and graduate degree programs, increasing biomedical research efforts, delivering high quality patient care, and providing strong outreach to veterinarians and society.

**Teaching.** Educating veterinary students has long been a nationally recognized college strength. Each of the past six years (2009-14), our students out-performed the national population of graduating veterinary students on the national licensing examination. During these years, the national number of students who passed the NAVLE on their first attempt was 18,817 of 20,264 students, representing a passing percent of 92.9%. During these years, 95.7% of UT students passed the NAVLE on their first attempt.

We focus our teaching on delivering essential information aspiring veterinarians and graduate students need and build what we believe is a strong foundation of biomedical knowledge, preparing students for life-long learning. In response to outcomes assessment and feedback from our students, alumni, and employers of our graduates, the College created new clinical programs in Community Practice and Dentistry, Emergency and Critical Care Medicine, Integrative Medicine, Shelter Medicine, and Large Animal Emergency Relief Services, improving the quality of our graduates. The faculty and staff work hard to create unique learning opportunities. One program is the anesthesia crew. This 10-week summer program engages students in anesthetic and perioperative surgical care, ICU emergency and critical care, and in clinical research projects; the benefits of this program are broad reaching.

**Research.** Funds awarded through extramural grants and contracts for the past five fiscal years have totaled \$15.2M. Although total college expenditures have increased \$10.1M (26%) during this time, research expenditures have decreased \$1.4M (-31%). The college is concerned this decline jeopardizes future grant awards, the graduate program, and faculty recruitment. With essentially flat State appropriation support and declining federal grant support, the college has found itself diverting research personnel salaries into clinical programs where revenue flow remains good; the college must carefully balance its need to invest in people to advance research versus expanding clinical programs to support teaching and patient care missions. Although decreases in research funding have occurred, faculty scholarship is strong and student exposure to research is excellent. We are fortunate to have good access to informational resources, and likely one of the most dedicated and best veterinary librarians in the nation.

**Patient Care.** Patient care is at the center of our mission to advance animal and human health; delivering excellent care allows us the referral base to effectively teach students the art and science of veterinary medicine. Many would argue that teaching is our number one college priority, but patient care and service to veterinarians is the backbone which allows us the environment and resources to provide an exceptional teaching program. The recent completions of the Small and Large Animal Hospital construction projects, and the investment in new hospital equipment, have added to our ability to deliver exceptional patient care. Our caseload is strong with substantial primary, secondary, and tertiary healthcare issues presenting to the hospital. Two areas that need continuing attention are ways to improve hospital work efficiencies and ways to protect our student, staff, and faculty morale in a stressful and demanding work environment.

**Outreach.** The College provides valuable outreach to the State through its ambulatory field services, its regular consultations with the Commission of Agriculture and State Veterinarian, and its support of the State Diagnostic Laboratory. The College presents exceptional continuing education to veterinarians and animal owners. Three programs, HABIL (Human Animal Bond in Tennessee), CAIT (Companion Animal Initiative in Tennessee), and VSW (Veterinary Social Work) are important components of our outreach efforts. HABIL provides outreach to more than 250,000 individuals annually through its pet visitations to nursing homes, assisted-living residencies, retirement centers, mental health centers, residences for children with special needs, rehabilitation facilities, and hospitals; currently HABIL has over 250 volunteers involved in 70 programs. CAIT functions to reduce unwanted animals in Tennessee; through this program the college engages with animal shelters and homeless people to help protect animal welfare. The VSW program is an area of social work practice that attends to human needs arising in veterinary medicine. This program provides expertise in grief and pet loss, animal-assisted interactions, links between human and animal violence, and compassion fatigue management.

## Measures of Outcomes

Veterinary student performance is measured by individual faculty through objective testing instruments in the didactic curriculum and by direct observation during clinical assignments. Students are also assessed by cumulative grade point average, by performance on the NAVLE, and by position demand, placement, and success in obtaining competitive internships and graduate positions. In the last six years, 98.9% of graduates have passed the NAVLE by the time of graduation, nearly all on the first attempt. Consistently, scores are slightly above the mean for all veterinary discipline areas except for the theriogenology and swine medicine sections where they are slightly below the mean. The quality of teaching by our faculty is assessed by peer and student evaluations. Student evaluation data of faculty teaching are collected by the Director of Assessment and the Associate Dean for Academic and Student Affairs and are assessed and shared with relevant Department Heads as well as the faculty members.

## Strengths of the College

The greatest strength of the College is its professional education program; the College places high value on student teaching. We have numerous internationally recognized researchers, clinicians, and leaders in their specialty fields. The College has a good record of recruiting and retaining faculty and staff; it is remarkable how committed the faculty and staff are to each other, unified in their passion for teaching excellence and showing great respect and compassion for each other. Depth and breadth of faculty expertise exists in most core college areas. We believe our clinical program, with its diverse patient population, is of high quality. Technology for teaching is excellent and includes video microscopy, teleconferencing, computer support, lecture capture, and online course and instructor evaluations. The College enjoys strong support of its client base and has excellent relationships with many state legislators, the Tennessee Veterinary Medical Association, and the Tennessee Farm Bureau. We are benefited greatly from having an exceptionally engaged Board of Advisors and Alumni Council.

## Weaknesses of the College

State appropriated monies have not been sufficient to cover annual faculty and staff salary and promotional raises nor contribute significantly to DVM program growth. Satisfying the \$6.1M facility debt is a concern. Despite dedicated efforts, we still have limited diversity in our student, staff, and faculty populations. Student debt load continues to increase, primarily as a consequence of increased tuition costs. We have a need for more faculty with greater research assignments to expand our research enterprise. The clinical curriculum could use more flexibility; students have limited ability to access unique learning opportunities that extend beyond 3 weeks. Students would benefit from additional education in equine and small animal dentistry, equine podiatry, swine production, poultry production, and business/practice management. Expansion of non-technical skills to include broader finance and business management skills, wellness management, conflict management, and leadership skills are needed.

## Recommendations

1. Improve College recurring funds through legislative requests coordinated at the UT System level, increase advancement efforts, clinical service delivery, and intellectual property expansion.
2. Create a facility master plan to accommodate College growth, including construction and renovation of research and diagnostic laboratory space, creation of a Teaching and Learning Center, and renovation of the small animal hospital reception, community practice, and emergency medicine areas.
3. Commit resources to recruit tenure-track faculty with large research assignments; this will likely necessitate downsizing or dissolving some hospital services which are not education mission critical.
4. Give consideration to create unique educational opportunities for advanced DVM students to assist in pre-clinical course delivery; e.g., anatomy assistants from those interested in surgical or radiology residencies.
5. Add student wellness education. The DVM degree program is strenuous and despite a large degree of 'grit' among our students (similar to that of West Point Cadets) we need to better protect their wellness.
6. Create more opportunities for students to have 'hands-on' education; add simulation laboratories.
7. Further improve clinical year flexibility. Consider curriculum changes allowing more students within the hospital and more externship opportunities; our students can learn much from talented, veterinary practitioners.
8. Move to an entirely electronic medical record with 'cloud' access for referring veterinarians and clients.

## 12.1 Organization

### 12.1.1 Provide a college mission statement for the undergraduate, DVM, or equivalent program. The college mission statement must address: (1) the overall teaching, research, and service commitment, (2) the commitment to undergraduate education, (3) the commitment to provide instruction and clinical opportunities for students in a wide variety of domestic species, including food animal, equine, and companion animal, and the commitment to excellence in program delivery.

The mission of the University of Tennessee College of Veterinary Medicine is to educate students in the art and science of veterinary medicine and related biomedical sciences, to discover new knowledge, and to disseminate that knowledge to veterinarians and others to advance human and animal well-being. The College promotes a vision to be an empowered, diverse organization with a commitment to perform well in all mission areas, to graduate highly trained veterinarians and biomedical scientists, to provide quality patient and client services, and to advance medical science knowledge. Core college values include:

- **Quality.** We strive for continuous quality improvement, individually and collectively, in all that we do.
- **Creativity and Innovation.** We apply new concepts, ideas and creative approaches to improve teaching, service, research, and college operations.
- **Commitment.** Understanding the interdependence of our actions, we are therefore committed to the success of the college and each other.
- **Teamwork.** We acknowledge that everyone's contribution is important. Working together we place the mission of the college first and align our contributions, whether individually or in teams, toward that end.
- **Compassion.** Recognizing the role of veterinary medicine in society, we strive to reach our goals with compassion for our patients, clients, and one another.
- **Integrity.** We conduct ourselves with honesty and integrity, recognizing that upholding the public trust requires the highest moral and ethical conduct.
- **Diversity.** We promote racial, cultural, and gender diversity and equality to strengthen all programs and service areas of the college to ensure maximum integration with the community and world we serve.
- **Professionalism.** We honor our role in teaching, service, and research by valuing the principles and spirit of veterinary medical ethics.
- **Community.** We understand our role in supporting society, the human-animal bond, and agriculture in furtherance of the One Health concept.

### 12.1.2 Identify the body that accredits the university and the current status of accreditation.

Since 1897, the University of Tennessee Knoxville (UTK) has been continuously accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award bachelor, master, and doctoral degrees. The university is comprised of 11 colleges, offers some 170 undergraduate majors, concentrations, and areas of defined specialization, and administers roughly 300 undergraduate and graduate degree programs. The university was last reaccredited in 2005 and is scheduled for reaffirmation of accreditation in 2015.

### 12.1.3 Provide a flow chart indicating the position of the college of veterinary medicine in the university structure and show lines of authority and responsibility, and give the names and titles of principal university administrative officers related to the college.

See Appendix page A1; Organizational Chart, The University of Tennessee

The College of Veterinary Medicine (CVM) is one of four units within the University of Tennessee Institute of Agriculture (UTIA); the other 3 units include the College of Agricultural Sciences and Natural Resources, the Agricultural Experiment Station, and UT Extension. The CVM reports to the UTIA Chancellor on all academic and nonacademic matters. The UTIA Chancellor reports directly to the President of the University of Tennessee.

The CVM is also tightly integrated with The University of Tennessee Knoxville (UTK) programs and administration. The CVM Dean serves on the UTK Deans Council, representing the CVM. CVM students' financial aid needs are serviced by UTK's Financial Aid Office. The DVM degree is awarded through UTK, the CVM curriculum and curricular changes must be approved by the UTK Graduate Council Curriculum Committee, and student grievances, disciplinary actions, and appeals are under the direction of the UTK Judicial Council. CVM faculty also serve on the UTK Faculty Senate.

**12.1.4 Provide a flow chart of the organizational design of the college listing names, titles (deans, associate/assistant deans, directors, department heads, etc.), academic credentials, and assignments of the college administrators.**

See Appendix page A2; Organizational Chart, UT College of Veterinary Medicine

**12.1.5 Describe the role of faculty, staff, and students in the governance of the college and list the major committees of the college, and their appointment authority.**

The Dean serves as the chief executive and administrative officer of the College. The Dean is responsible for administration of the College and is the agent of the College Faculty for the execution of academic policy. The Dean, in consultation with the Faculty, may create administrative positions or change the title or role of existing administrative positions as deemed necessary for effective oversight and management of the College. Each academic department within the College is headed by a Department Head, who is appointed by the Dean with input by the college faculty. The Department Head serves as chief executive and administrative officer of the academic department, is responsible to the Dean for administration of the department, and is the agent of the department faculty for the organization and execution of academic policy. Department heads also serve as administrative officers for their respective hospitals and/or diagnostic laboratories.

The faculty and administrators of the College are committed to the concept of shared governance. Shared governance is made operational through various college and hospital committees as well as through general faculty assemblies. The college faculty meet in assemblies (1) to discuss rules and regulations of self-governance including the creation of various standing committees; (2) to make recommendations to the Dean regarding academic policies on student affairs, pre-doctoral education, advanced education, continuing education, and research; and (3) to disseminate and gather information of general and scientific nature.

The college has 22 committees or boards which are divided into administrative (1) standing college (8), special college (8), and hospital oversight (5) governance structures. Ad hoc committees and task forces are created and members appointed as needed. A list of the major committees and their appointment authority can be found within the appendix (see Appendix pages A3-7; Major College Committees).

Appointment to committees is the prerogative of the Dean and may be based on self-nomination by a faculty or staff member, nomination by the department head, or in consultation with assistant and associate deans. The college values committee input to college governance and strives to make broad use of faculty, staff, and student appointments to the committees. This current 2014-15 academic year shows 10 committees comprised of faculty only, faculty and staff together on 9 committees, faculty and students together on 1 committee, and faculty, staff, and students serving together on 2 committees. Committee meeting minutes are typically placed on the CVM IntraNet, which is available to all faculty, staff, and students, to give everyone the opportunity to be informed of CVM business. An open door policy of all administrators and most faculty and staff promote further opportunities for everyone to have input in CVM governance.

**12.1.6 If the college plans to change its current organization, provide a summary of those plans.**

There are no plans to change the current college organizational structure.



## 12.2 Finances

### 12.2.1 Complete Tables A and B for the past five years and analyze the trends for each category.

See Appendix page A8; Table A, Total Expenditures

See Appendix page A9; Table B, College Revenue

**Expenditure Trend Analysis.** College expenditures increased from \$39.4M to \$49.5M over the past 5 years. Expenses toward instruction, academic support, the teaching hospital, and diagnostic laboratories comprised the bulk of our college expenditures (82.3% to 87.3%) and have grown at average annual rates of 3.2%, 18.7%, 7.5%, and 4.5%, respectively. Sponsored research expenditures have decreased from \$4.5M to \$3.1M (-30.8% decline) over this same time period and the college is concerned that this trend, if it continues, will negatively impact future extramural grant awards, graduate programs, and faculty recruitment and retention.

Of the \$10.1M increase in college expenditures from FY10-14, the largest increases have occurred in academic support (\$4.6M) and the teaching hospital (\$4.4M). The \$4.6M expenditure increase in academic support was associated with \$1.6M devoted to facility debt service payments, \$1.8M targeted to hospital equipment upgrades, and \$1.2M invested in personnel salaries and benefits, operating, utilities, and maintenance increases. Teaching hospital expenditure increases were attributed to a \$3.0M investment in personnel salaries and benefits, and \$1.4M to support general operating and maintenance cost increases.

Sponsored research expenditures have decreased by \$1.4M (-30.8%) from FY10-14. In FY10 and FY11 the college expended \$314K and \$354K in NIH American Recovery and Reinvestment Act funding that became unavailable in succeeding years. Since FY10, the college has seen declines of \$0.4M in expenditures against NIH funded projects, \$0.4M in industry funded grant expenditures, and \$0.2M in state supported Center of Excellence grants.

**Revenue Trend Analysis.** The overall college revenue has grown from roughly \$44.7M to \$55.3M over the 5 years from July 1, 2009 through June 30, 2014. State appropriations and tuition & fees have increased at an average yearly growth rate of 1.3% and 8.0%, respectively. It is noteworthy that the annual increase in tuition & fees (8.0%) has outpaced the annual increase in state appropriations (1.3%) with a resultant shrinkage of the proportion of state funds contributing to the college's overall revenue from 36.3% to 30.4%. Regrettably, the increases in state appropriated monies have not been sufficient to cover annual faculty and staff salary and promotional raises nor contribute significantly to DVM program growth; the college has had to seek revenue sources beyond state appropriation dollars to accomplish investments in our people and programs. One of these sources has been hospital and diagnostic laboratory revenue which has shown good growth over the past 5 years from roughly \$9.9M to \$12.6M (6.3% annual growth). Endowment income has also shown good annual growth at 8.3%, but the total contribution to the college budget is small at less than \$0.7M per year. Gifts for current use and sponsored program income have declined significantly, likely as a result of the economic recession and slow local and national recovery; both of these revenue sources showed negative growth (-74.1% and -22.4%, respectively) from FY10 through FY14, with a total combined income loss of roughly \$2.2M. The decrease in sponsored program income and cost recovery follows the completion of three large FDA Homeland Security grants which provided full funding of our facilities and administrative rate.

Growth in the college reserves and transfers account from FY10 to FY14 (\$6.4M) has contributed markedly to the rise in annual college income. A conscious effort has been made to build this account to position the college to satisfy an existing \$9.7M debt from renovated and newly constructed hospital facilities and to create a college-wide equipment reserve fund. Since FY10, \$3.6M in college reserve funds has been used to reduce the facility debt to \$6.1M and to increase the college-wide equipment fund from \$0.1M to \$2.1M.

### 12.2.2 Comment on the strengths and weaknesses in revenues over the past five years.

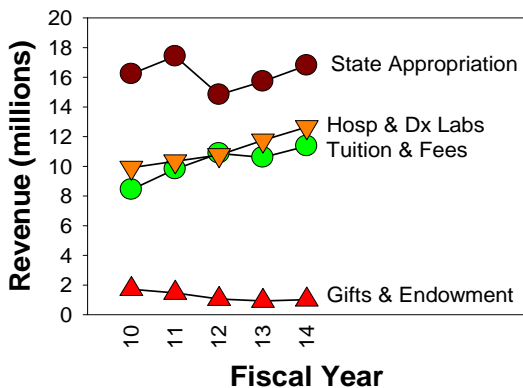
College revenue has increased some \$10.6M. Revenue growth has occurred in reserves and transfers (\$6.4M), tuition and fees (\$2.9M), sales and services (\$2.7M), and state appropriations (\$0.6M). The college has heavily



relied on tuition and clinic service fees to bridge revenue gaps caused by inflation, faculty and staff salary increases, needed start-up and bridging funds to support new and existing clinic services, and facility operational needs including maintenance and utilities expenditure increases. Personnel salaries and benefits have increased by \$5.5M, facility maintenance costs have increased by \$0.5M, utilities expenditures have increased by \$0.4M, and general operating costs have increased by \$0.8M. Combined with a need to satisfy an existing facility debt burden (\$6.1M), these rising expenses have placed significant challenges on our college revenue streams.

Although in-state residency tuition costs are below the national mean, our out-of-state tuition is the 12th highest among US veterinary colleges. This position gives us great concern regarding the potential for further increases in out-of-state tuition. We rely heavily on tuition revenue and do not want to deter students from attending our veterinary college, nor do we wish to balance our budget by further increasing their debt burden, which is already nearing \$158K per student. However, our ability to stabilize tuition and fee costs correlates directly with the amount of state appropriations designated to the college. Although State of Tennessee revenue collections have shown significant increases over the past 18 months, the rising cost of required healthcare has created a strangle hold on potentially new uncommitted funds; we do not anticipate significant new recurring college appropriations (nor new appropriations for higher education in general for that matter) from the State in the near future.

**12.2.3 Provide a comprehensive trend analysis of revenue sources that have supported the professional teaching program over the past five years (graphs or other visual presentations would be helpful).**



Four main revenue sources support the teaching program. These include state appropriations, teaching hospital & diagnostic laboratory income, tuition & fees, and gifts & endowments. State appropriations have remained essentially flat, increasing by only \$0.6M (4%) over the past 5 fiscal years. The five year period included a 7% increase in state appropriations in FY11 of \$2.9M in non-recurring stabilization funds to help transition the college to a recurring cut in FY12. Tuition and fees increased 35% (\$2.9M) and teaching hospital and diagnostic lab income increased 28% (\$2.7M). Gifts and endowment income declined 11% (-\$0.7M). These revenue streams have served to support (1) new and recurring teaching program needs, (2) merit and equity salary

funding for three of the five fiscal years, (3) faculty and staff salary promotional increases, (4) start-up and bridging funds to support new and existing clinic services, and (5) building infrastructure maintenance needs and annual utilities increases.

**12.2.4 Describe how revenues over the past five years have impacted the college's ability to provide a contemporary professional teaching program and ancillary support services.**

Over the past five years, we have paid \$3.6M toward satisfying our building debt; we completed the small animal and large animal hospital renovation and expansion projects in 2008 and 2013, respectively. These building expansions have provided space for new and enhanced services along with state-of-the-art equipment having a direct benefit to student education. Educational program enhancements which have occurred over this time frame have included (1) the creation of a 3-week core clerkship in Community Practice and Dentistry where students learn primary care medicine focused on patient wellness and client communication, (2) the creation of an elective Emergency Medicine and Critical Care clerkship, (3) the expansion of clinical externships to allow junior students an opportunity to enroll in two 4-week, structured externships following the conclusion of their sophomore year studies, (4) the creation of a team-building and leadership experience for entering freshmen students and a communication training program for sophomore students, (5) the addition of a journeymen farrier to the equine hospital to provide enhanced opportunities to educate students in hoof care, (6) the creation of an elective Integrative Medicine clerkship, (7) the construction of an interventional radiology suite to allow expanded patient healthcare, (8) the creation of a Shelter Medicine clerkship to educate students in shelter medicine and reproductive soft tissue surgery skills, (9) the expansion of faculty personnel in equine and food animal field services, behavior

medicine, cardiology, oncology, ophthalmology, and radiation oncology, (10) the addition of an electronic software package (One45) to allow better tracking of student competencies and feedback regarding student clinical performance, (11) the creation of a large animal emergency relief service to enhance student education in field emergency management skills, and (12) the creation of an elective course in equine performance and rehabilitation.

### **12.2.5 Compare the percentage of hospital income to total hospital operational costs.**

Hospital income has typically supported between 64-67% of hospital operational costs over the past 5 fiscal years. State appropriations, tuition, and fees have been used to support the remaining 33-36% of direct operational costs. During the last two fiscal years (FY13 and FY14) hospital income comprised roughly 65% of hospital operational costs (\$10.3-\$11.1M) with roughly 35% (\$5.4-\$6.3M) derived from state appropriations, tuition, and fees to satisfy remaining direct expenditures.

### **12.2.6 Describe anticipated trends in future revenues and expenditures.**

Due to state revenue projection concerns, no recurring salary or operating fund increases were provided for the 2014-15 fiscal year. Despite the absence of state salary support, the college plans to distribute a self-funded, one-time \$300 salary bonus for each faculty and staff member in January 2015. It is noteworthy, that state appropriations have consistently dropped as a percent of our revenue budget over the life of our college, starting with state appropriations at 88% of our total budget in 1978 to 30% of our total budget in FY14. We do not expect state appropriations to climb significantly in the near future nor do we expect increases in state appropriations to make a material difference in our budget.

Student enrollment, tuition, and fee increases have allowed the college to compensate for deficiencies in state appropriations. We are, however, sensitive to the debt burden of our students. Tuition for FY15 is set to increase by 5% for Tennessee residents and to not increase for out-of-state residents. Tuition and fees beyond FY15 will likely vary between 2-7% each year for both resident and non-resident students. We are not currently considering an enrollment increase, but depending on future levels of state appropriation and veterinary workforce needs, an enrollment increase could occur.

We began FY15 with \$4.0M in reserve funding, an approximate 40% decrease over FY14. We expect to realize another \$0.7M in non-recurring funds from salary savings on unfilled positions in FY15. All available funding other than departmental carry forward will be reserved to address our clinic debt burden which is currently at \$6.1M for the large and small animal building expansions. We expect to have the building debt satisfied by FY21. Relief of this debt burden through the University of Tennessee would greatly and positively impact the College's ability to weather current financial strains.

## 12.3 Physical Facilities and Equipment

### 12.3.1 Provide a brief description of the major functions of, or activities that take place in the facilities used by the college in fulfilling its mission.

The distribution of space in the college buildings between administrative units is listed in Table 1 below.

Table 1. Space† assigned to Biomedical and Diagnostic Sciences (BDS), Large Animal Clinical Sciences (LACS), Small Animal Clinical Sciences (SACS), Veterinary Medical Center (VMC), and Administration and Teaching (College).

Facilities Area and Buildings	BDS	LACS	SACS	VMC	College	Total
Veterinary Campus						
CVM Building	34,927	7,165	9,134	105,867	31,479	188,572
Equine Performance & Rehabilitation				32,225		32,225
Publication Services					2,400	2,400
Institute of Agriculture						
Hollingsworth					4,823	4,823
Ellington Plant Sciences					1,608	1,608
Plant Biotech					2,382	2,382
Morgan Hall (Sponsored Prgms Office)					1,100	1,100
UT Knoxville						
Walters Life Science Building	3,337					3,337
Veterinary Research & Education Center						
Cherokee Building A (Lab Animal)	8,380					8,380
Cherokee Building B (Farm Animal)		7,638				7,638
Cherokee Building C (Equine)		8,367				8,367
JARTU‡			4,856			4,856
Totals	46,644	23,170	13,990	138,092	43,792	265,688

† Net assignable square feet. ‡ JARTU, Johnson Animal Research and Teaching Unit

The College's facilities are located at the University of Tennessee Knoxville (UTK) on the UT Institute of Agriculture (UTIA) campus. Brief details regarding college facilities are described below.

#### Veterinary Campus

- **CVM Building.** This facility houses the majority of the College's teaching, research, hospital and administrative programs. It is a 3-story, 380,874 GSF building with a basement laboratory animal facility.
- **Equine Performance and Rehabilitation.** Stand-alone equine sports medicine complex.
- **Publications Services.** This building houses a 2,400 NASF lecture room used solely by the College. It has a seating capacity for 95 students, separate restrooms, and a separate vending area.

#### Institute of Agriculture

- **Hollingsworth.** The college has access to a large auditorium, used for mid-term and final examinations, continuing education programs, college-wide seminars, and award banquets and ceremonies.
- **Ellington Plant Sciences.** Houses Offices for Laboratory Animal Care and IACUC Program.
- **Plant Biotech.** Large seminar room used for veterinary student testing and discussion laboratory sessions.
- **Morgan Hall.** Houses the Office of Sponsored Program, overseeing pre- and post-awards.

#### Veterinary Research & Education Center

- **Laboratory Animal Facility; Cherokee Building A.** A single story facility which contains a vivarium, sterile surgery unit, treatment rooms, sterilization unit, offices, and laboratory support infrastructure.
- **Farm Animal Teaching and Research Unit; Cherokee Building B.** Teaching labs, bench-top lab, surgical room, a livestock teaching area with stocks, and outside cattle work area. A separate-entrance isolation facility consisting of a central anteroom and laboratory room with 4 self-contained animal rooms.
- **Equine Teaching, Research, and Theriogenology Unit; Cherokee Building C.** Contains a teaching ward with 10 stocks, bench-top lab, and women's locker facilities. Adjacent to this facility is the equine housing

unit, with 12 stalls opening into individual paddocks. Connected by a breezeway is the theriogenology paddock equipped with separate stalls, restraint stocks, and stallion collection dummy.

- **Johnson Animal Research and Teaching Unit.** The CVM occupies 4,856 sq ft of space which includes a surgical scrub room and two large teaching laboratories. One laboratory is a fully equipped surgical suite containing 12 surgical tables and anesthesia set-ups, while the other is an equally sized multi-purpose suite used for surgical preparation and physical diagnosis laboratories. Additional rooms include canine and feline housing rooms, treatment room, and a lecture hall with seating capacity for 35 students.

### **12.3.2 Provide an area map that indicates the principal facilities of the college and describe distance and travel time to off-campus facilities.**

College programs are housed in facilities located in four areas of the UT campus. The veterinary campus is located west of UTK and houses the teaching hospital and academic facilities. On the UTIA campus is an auditorium, a seminar room, and office space housing Sponsored Programs, Laboratory Animal Care, and IACUC programs. The Veterinary Research and Education Center (VREC) is located 0.6 miles west of the veterinary campus, across the Tennessee River, and houses both research and academic programs. Travel time to the VREC is roughly 8 minutes by car or 10 minutes by foot. DVM student education occurs in all locations, except the Walters Life Sciences building which houses the research programs of two CVM faculty. See Appendix pages A10 and A11; Area Maps

### **12.3.3 Describe the college's safety plan and facilities management plan including mechanisms documenting compliance.**

The University of Tennessee Institute of Agriculture (UTIA) and the College of Veterinary Medicine (CVM) ensure workplace safety through compliance with standards established by the Federal Occupational Safety and Health Administration, the Environmental Protection Agency, the Nuclear Regulatory Commission, and the Association for Assessment and Accreditation of Laboratory Animal Care. UTIA has established programs and committees to review and oversee safety on the Agricultural Campus, which includes the CVM. The safety framework includes a dedicated Safety Office to provide safety program oversight, a dedicated Biosafety Office to provide biosafety program oversight, an Institutional Review Board for Human Studies, an Institutional Biosafety Committee, a Radiation Safety Committee, and an Institutional Animal Care and Use Committee. The UTIA Safety Officer, Occupational Health Nurse, and Biological Safety Officer work closely together to continuously monitor health and safety concerns of students and personnel and to ensure that safety standards are met and policies followed. The UT Radiation Safety Officer works closely with the college's radiology, nuclear medical, radiation therapy, and laser safety personnel to ensure strict adherence to federal NRC and State laws and regulations.

### **12.3.4 Describe the adequacy (pertains to all facilities used by the college whether on-campus or off-campus) of:**

#### **12.3.4.a Classroom, laboratories and other instructional environments and related equipment**

- **Lecture Rooms.** The college has 4 lecture rooms. PSB 100, A118, and A335 (seating capacities 95-96) serve our current need for lecture capacity well. Lecture room A117 (seating capacity 70) is used for smaller sized classes and group meetings. Infrastructure is adequate in all lecture rooms. All lecture rooms have wireless internet, a Symposium® projection system, and electrical outlets for computer use.
- **Intermediate-Sized Classrooms.** The college has 4 classrooms with seating capacities varying between 45-60 individuals. Lighting, ventilation, seating, and technology infrastructure are adequate in all rooms. These rooms are used heavily for seminars, elective courses, small group courses, and special meetings.
- **Conference, Small-Group, and Clinical Rounds Rooms.** The college has 4 dedicated conference rooms, 9 small-group classrooms, and 7 rooms within the VMC designated for clinical rounds. These rooms are adequate in number, size, and equipment for effective discussions, small group learning, and study groups.
- **Gross Pathology.** Anatomic pathology has a gross presentation theater laboratory adjacent to necropsy.
- **Microscopy Laboratory.** A235 (seating capacity 50) is equipped with wireless internet and microscopes.

- **Computer Classrooms.** A335A and B204 (seating capacities 48 and 10, respectively) exist for instruction and general student use. These computer rooms are adequate for current enrollment.
- **Anatomy Laboratory.** A121 (working capacity 96) is well maintained and of adequate design and capacity for current needs. The adjacent anatomy cooler and preparation rooms are in need of renovation.

#### 12.3.4.b Teaching hospitals, pharmacy, diagnostic imaging, diagnostic support services, isolation facilities, intensive/critical care, necropsy, and related equipment:

**Veterinary Medical Center (VMC).** The VMC consists of the following individual hospital facilities.

- **Small Animal Hospital (SAH).** The SAH consists of reception area, 16 examination rooms, a social work counseling room, 4 treatment wards, surgical unit, intensive care unit, emergency triage, physical and rehabilitation therapy unit, medical and radiation oncology, radiation isolation, infectious disease isolation, nutrition center, cardiology suite, electro-diagnostics room, 3 minimally invasive procedures suites including interventional radiology, dental procedures suite, and animal housing wards.
- **Avian and Exotics Hospital (AEH).** The AEH is located contiguously to the SAH. It consists of a treatment and exam room, computer work area, 2 surgery rooms, endoscopy room, 4 separate animal wards (avian, reptiles, small mammals, wildlife), kitchen, infectious disease isolation, and technician office.
- **Equine Hospital (EH).** The EH includes infectious diseases isolation, intensive care unit, surgical unit, hyperbaric oxygen, examination rooms, special procedures and endoscopy room, and equine stalls.
- **Farm Animal Hospital (FAH).** The FAH includes patient procedures rooms, surgery unit, down-cow ward with bovine float tank and sand-base stalls, separate bovine, small ruminant, swine, and camelid wards with separate treatment rooms, and outside animal holding pens.
- **Equine Performance and Rehabilitation Center (EPRC).** The EPRC includes an in-ground underwater treadmill, free walker, separate hydrotherapy ward, solarium, physical therapy and chiropractic treatment ward, a podiatry center, diagnostic examination room, patient stalls, and an event-sized evaluation arena.
- **Field Services (FS).** The FS unit is adjacent to the Equine Hospital. It includes a student/clinician computer/medical records work space, small conference room, dispensary room, locker rooms with showers, 4-bay garage, and dedicated vehicle wash-down bay with petroleum waste processing system.

**Pharmacy.** Two registered pharmacists, 3 registered technicians, and several part-time clerks are employed. The pharmacy is licensed by the Tennessee Board of Pharmacy and the Federal Drug Enforcement Administration.

**Diagnostic Imaging.** Includes small and large animal digital radiography suites, fluoroscopy, an interventional radiology suite, and an ultrasound room. The adjacent Tickle Imaging Center houses a 40-slice spiral CT suite, a 1.5T MRI suite, and a nuclear medicine suite, all capable of scanning small and large animals.

**Diagnostic Support Services.** Diagnostic laboratory services include bacteriology and mycology, immunology, clinical pathology, biopsy, necropsy and associated histology laboratory services, endocrinology, parasitology, pharmacology, and molecular diagnostics. Facilities provide the VMC excellent diagnostic support.

**Isolation Facilities.** The VMC has 3 isolation facilities; 2 within the SAH and 1 within the EH which serves all livestock species. Within the SAH, the standard isolation unit is located in avian isolation. This facility consists of 2 wards and an anteroom. The space allows separation of species or diseases between the two wards. Due to small number of infectious disease cases, the standard facility is sufficient for routine biosecurity management. For outbreaks of contagious disease, multiple infectious agents, or multiple infected species, activation of the advanced isolation facility is initiated according to protocol (section 12.3.5).

**Intensive/Critical Care.** The SAH ICU was renovated and doubled in size to include cage capacity for 29 patients, 2 walk-in treatment cages, and adjacent feline, surgical recovery, special procedures, and emergency triage wards.

**Necropsy.** The necropsy facility was completely renovated in 2011 with new animal coolers, large animal lift table, hoists, lighting and ventilation upgrades, loading dock, and storage room. Facility expansion has allowed increased

cattle accessions and enhanced diagnostic support for Tennessee. Total necropsy cases have increased from 706 to 1050 over the last 6 years. This area is well-designed and maintained, with good equipment and growth capacity.

#### **12.3.4.c Major facility upgrades and equipment purchase:**

- Completely renovated the VREC equine and bovine teaching and research facilities including infrastructure replacement, interior renovation and upgrade of all animal housing facilities to USDA standards, exterior renovation, roof replacement, replacement of floor surfaces and drainage system, and addition of men's and women's locker, shower, and bathroom facilities to Americans with Disabilities Act (ADA) standards.
- Completed the second floor of the SAH (9,400 GSF) consisting of 14 offices, a 60-seat capacity conference room, break room with kitchen, multi-headed microscope suite, and 3 clinical research laboratories.
- Completed the large animal hospital (LAH) construction and renovation project. Facility improvements included (1) isolation facilities, (2) equine surgery and surgical preparation, (3) farm animal hospital with purpose-designed animal handling systems, standing and recumbent surgical suites, separate out- and in-patient treatment areas, and a down-cow facility, (4) equine performance and rehabilitation center, (5) equine and neonatal ICUs, (6) field services facility, (7) advanced imaging center, and (8) expansion of areas housing cardiology, ultrasound, nuclear medicine, and office space for interns and residents.

#### **Major Equipment Purchases Enhancing Mission Delivery**

The College has spent \$4.0M in equipment purchases over the past 5 years. Purchased equipment meets mission responsibilities associated with patient healthcare and serving referral veterinarians. Major equipment purchases include Shanks rotary livestock table, bronchoscopy, endoscopy, and arthroscopy systems, anesthesia equipment, gamma camera, Omnicell® drug dispensary systems, Bowie units for field service trucks, oxygen cages, Siemens RS Magnetom Espree Fixed MRI, Phillips Brilliance 40 helical multi-slice CT, digital radiography units, ultrasound units, fracture repair equipment, laparoscopic equipment, equine dental and farrier equipment, cattle surgery chutes, large animal scales, cattle float tank, shockwave therapy unit, standing cattle transport, MapCHECK IMRT, floor scale, equine solarium, Steris gas sterilizer, Surgivet multi-parameter patient monitors, Phillips Healthcare Veradus 1.2 Neofluoroscopic C-arm, Advia 120 hematology analyzer, acoustic focusing analytic flow cytometer, Olympus BX43 fluorescent microscope, video endoscope, lameness locator for field EPRC, and laparoscopic AI equipment.

#### **12.3.4.d Facilities for maintenance of teaching and research animals:**

- **CVM Laboratory Animal Facility.** Restricted-access unit located in the CVM basement. It includes separate housing for laboratory animals, cage washing and sterilization, food preparation, procedures room, storage, and staff offices. Facilities and infrastructure are in compliance with AAALAC standards.
- **VREC Laboratory Animal Facility.** Houses dogs, cats, and rodents. Provides a safe and functional environment for teaching and research purposes and meets AAALAC and USDA accreditation guidelines.
- **VREC JARTU.** This research and teaching unit has housing facilities for approximately 15 dogs and 24 cats in permanent colonies available for student teaching. Facilities meet AAALAC and USDA standards.
- **VREC Pastures and Paddocks for Teaching Herds.** This space consists of 6 paddocks (53x240 ft) with 12x12 ft houses, 3 paddocks (33x210 ft) with 10x10 ft houses, and 5 pastures of 4-9 acres each.

#### **12.3.4.e Research facilities and equipment:**

The CVM has roughly 18,600 GSF of research laboratory space, of which 2,100 GSF is used for gait analysis and fluoroscopy. Of the remaining 16,500 GSF, roughly 4,800 GSF is shared with diagnostic services and instruction. The research facilities are adequate to support current faculty efforts, but are becoming outdated. Some laboratories have been renovated to meet compliance and space standards for molecular biology and stem-cell research. As research programs grow, limitation of available space will impede research expansion. Research equipment is adequate. The CVM and the Center of Excellence in Livestock Diseases and Human Health provide a central tissue culture and cell sorting facility staffed by a highly skilled technician. This facility is available to all college faculty.

A second core laboratory located in Plant Biotech on the UTIA campus is available for use by all CVM faculty and students. Genomics, microscopic imaging, and mass spectrometry cores are available on the UTK campus.

#### **12.3.4.f Administrative and faculty offices:**

The dean, two associate deans, and their office staff are housed in a suite of offices located on the CVM first floor. The 3 departmental (BDS, LACS, SACS) administrative offices are housed in separate areas on the CVM second floor. The offices of the associate dean for Administration and Clinical Programs, facilities maintenance, and housekeeping are located on the CVM second floor. Hospital managers and staff are housed within the VMC. Faculty offices are located throughout the building. Most faculty have private offices; however, some instructors and clinical faculty share offices. Interns and residents share offices in groups of 2-9. All offices have adequate lighting and ventilation. Office space is adequate for current needs.

#### **12.3.4.g Service areas for students (lounges, cafeteria, etc.):**

The College has limited but significantly improved service space for students, staff, and faculty with the addition of break rooms with kitchen facilities in both the small and large animal hospitals. A small snack shop with limited seating is located on the CVM third floor and is operated by a private vendor. Another break room is located on the CVM first floor near lecture rooms and the anatomy laboratory for student use.

#### **12.3.4.h Building infrastructure (for example, air handling, vented hoods, etc.):**

Significant improvements have been made to repair and replace infrastructure deficiencies (new cooling towers, emergency generator, electrical supply upgrades, oxygen supply unit, kennel flooring and gating, gates, stocks and stall doors, equine and large animal patient ward flooring, exterior lighting) to maintain a safe and functional working environment. Replacement of the entire CVM roof is currently underway.

#### **12.3.5 For safety and educational purposes, protocols must be posted in the isolation facilities and the facilities must be used for instruction in isolation procedures (biocontainment).**

Isolation protocols are posted in appropriate areas. Hospital personnel and students are required to complete on-line video instruction and an isolation procedures and policies exam. During student clerkship orientations, veterinary technicians review isolation facility operating procedures. See Appendix pages A12-14; Isolation Procedures.

#### **12.3.6 Describe current plans for improvement.**

A \$5.2M capital maintenance project commenced October 2014. This 14-month project includes replacement of HVAC systems, addition of emergency power to research and diagnostic laboratories, renovations to an anatomy preparation area, and replacement of VMC vacuum and anesthetic exhaust pumps. The entire CVM roof is also scheduled to be replaced. An additional \$5.4M capital maintenance request has been submitted to complete building envelop repairs and to replace HVAC and lighting systems in zones not included in the current project.

Plans exist to construct a CVM Teaching and Learning Center (TLC). The TLC will consist of a lecture room (124-seat capacity), computer classroom, simulation laboratory, kitchen with serving counter, vending area, restrooms, and 2,000 sq ft concourse and lounge area. The estimated cost is \$2.5M. Advancement efforts have been successful to procure donor support; we anticipate cash flows will allow the project to begin within a few years.

The college plans to renovate the SAH reception area to improve clinical capacity and create a more professional patient receiving and waiting area. Objectives include a contemporary remodel using design concepts created for the LAH reception area, to build a connected pet-friendly patio, to establish zoning to segregate animals, to create client consultation rooms, and to create a new clinical area for the Community Practice and Dentistry service during regular office hours and for the Emergency Service during afterhours. The College envisions this space to hold a patient waiting area, exam rooms, emergency triage and procedures rooms, media teaching room, and an office.



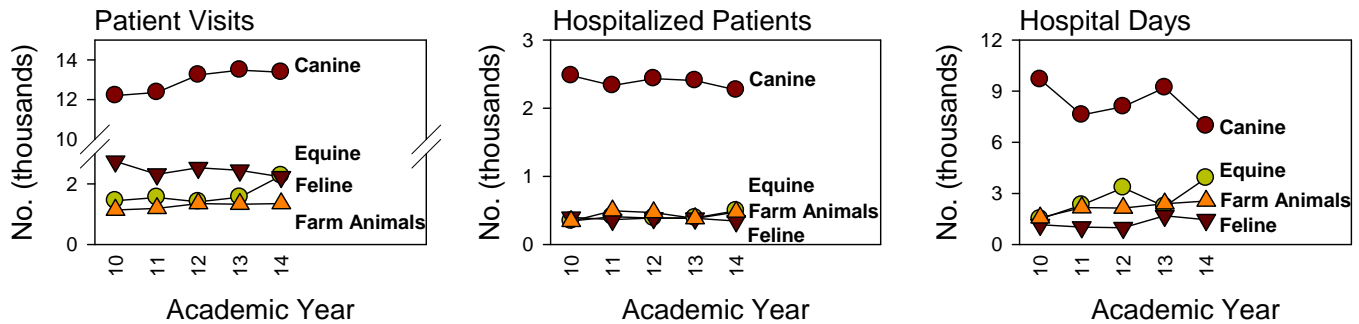
## 12.4 Clinical Resources

### 12.4.1 Complete Tables A, B, and C for the past five years and analyze trends for each species (category).

See Appendix pages A15 and A16; Table A, Teaching Hospital

See Appendix page A17; Table B, Ambulatory/Field Service Program

See Appendix page A18; Table C, Herd/Flock Health Program



### Teaching Hospital – Trends

**Patient Visits.** Canine and equine annual visits increased from 12,203 to 13,377 (10%) and from 1,445 to 2,273 (57%), respectively. Farm animal annual visits (bovine, caprine, ovine, porcine) also increased, showing a rise from 1,139 to 1,350 (19%). Feline patient visits decreased over the 5-year time frame, dropping from 2,748 to 2,238 (-19%) annual visits. Annual hospital visits for caged birds, avian wildlife, camelids, and other animals from FY10 through FY14 has been fairly consistent, with mean annual visits of 599, 638, 243, and 1,743, respectively.

**Hospitalized Patients.** Canine patients are the major species hospitalized. The number of annual hospitalized dogs decreased slightly from 2,477 to 2,268 (-8%) over the past 5 years with a mean annual hospitalized population of 2,383 dogs during this time frame. The VMC sees fewer numbers of hospitalized horses, cats, and farm animals with mean annual numbers of 405, 376, and 433, respectively. Mean annual hospitalization of caged birds, avian wildlife, camelids, and other animals occurred at a rate of 113, 283, 93, and 494 animals per year, respectively.

**Hospital Days.** Annual equine, feline, farm animal, caged bird, and camelid hospital days have increased over the past five years from 1,498 to 3,895 (160%), from 1,163 to 1,450 (25%), from 1,567 to 2,554 (63%), from 495 to 1,919 (288%) and from 368 to 994 (170%), respectively. Hospital days for admitted canine patients and avian wildlife have shown decreases from 9,684 to 6,956 (-28%) and from 1,125 to 641 (-43%). The annual hospital days for admitted other animals decreased from 11,138 to 3,534 (-68%) from FY10 to FY11; we believe our census accounting for hospitalized other animals during FY10 was flawed. Since FY11, the number of hospitalized other animals has shown an increase from 3,534 to 4,257 (20%).

### 12.4.2 Describe and analyze the adequacy of normal and clinically diseased animals (hospitalized, out-patient, field service/ambulatory and production medicine) and how they are used for the DVM teaching program.

Small and large animals used for veterinary student and house officer education are derived from several sources. Clinical patients presented to the VMC are the primary source of the diseased animal population. Shelter animals are used extensively for physical diagnosis and spay/neuter training. The Community Practice and Dentistry service sees dogs and cats owned by UT faculty, staff, students, and long-standing clients of the VMC for wellness and preventative healthcare. Client owned avian and exotic animal species are the primary source of healthy and diseased animals seen by this service. Students also participate on 2-week rotations at the Knoxville Zoo and at a privately owned large cat rescue sanctuary (Tiger Haven; population of approximately 260 tigers, lions, and panthers) located nearby. Clinical work is done as needed at the American Eagle Foundation, a raptor-rehabilitation

facility in the area and at two aquariums (Tennessee Aquarium, Chattanooga, TN; and, Ripley's Aquarium, Gatlinburg, TN). The equine and farm animal Field Services units provide veterinary care to animals on farms and ranches within a 50 mile radius of the VMC, to cow-calf herds at UT Experiment Stations in Middle Tennessee, at the Ames Plantation in West Tennessee (production medicine and equine), and at the Tennessee Rehabilitative Initiative in Correction (TRICOR) facility which has dairy and beef production programs. This mix of animals provides a variety of animal breeds in differing physiological states for teaching and research. The normal/healthy animal population is derived from the same sources noted above and from student and staff volunteer pets, shelter animals, and purpose-bred dogs and cats.

The Small Animal Hospital (SAH) has seventeen clinical services that see primary, secondary and tertiary case material. The caseload is substantial and meets our educational mission. All services run at or near full capacity and receive a complete spectrum of diseased patients. Clinical services include: avian, exotic, and wildlife medicine, behavior medicine, cardiology, community practice and dentistry, dermatology, emergency and critical care medicine, integrative medicine, internal medicine, neurology, oncology, ophthalmology, orthopedic surgery, physical rehabilitation, shelter medicine, small animal reproduction, soft tissue surgery, and zoological medicine. Major support services are anesthesia, clinical pathology, pathology, and radiology. About 10% of the caseload is presented to our community practice and dentistry service. This service sees non-referral patients presented for annual physical examinations, vaccinations, parasite treatment and prophylaxis, and a variety of common medical problems. With an average of some 2,600 hospitalized and 15,000 out-patient visits annually, our senior students average approximately 35 in-patients and 175 outpatients for which they have direct responsibility during their clinical year rotations in the SAH.

The Large Animal Hospital (LAH) caseload has shown good growth over the past 5 years with 3,817 patients seen in FY14. The farm animal caseload consists of beef and dairy cattle, camelids, pot belly pigs, goats, and sheep. During the last five years, cattle and camelids were the predominant farm animals seen, with a significant increase in camelids seen in the past year. Dystocias, cattle feet and limb afflictions, infections, ophthalmic, and urinary system problems are seen most frequently. The equine hospital caseload has increased 57% in the last 5 years, and the complexity of the cases has increased significantly with a shift from routine cases to more complex medical and surgical cases.

The Field Services caseload has seen a 7% mean annual increase for the past 5 years, with 10,586 patients seen in FY14. This increase is due to new programs initiated by the Equine and Food Animal Field Service clinicians:

- **The Equine Ambulatory Service** has established professional relationships with multiple stables in the local community which has increased the primary and secondary care equine caseload. These stables are engaged in preventive health care programs (vaccinations, parasite management, nutrition and pasture management, disease surveillance, dental care) which aid students in the development of knowledge concerning farm specific health management programs. The equine ambulatory service also has a rapidly expanding dentistry program with new specialized equipment for field dentistry.
- **Farm Animal Field Services** has greatly expanded programs focused in clinical teaching. Specifically:
  - Students visit two dairies each week where they palpate cows for pregnancy and cyclicity, examine sick cows, and perform lameness assessments.
  - A new herd health contract program has been promoted to our cow-calf clients to increase their engagement and student access. This program focuses on preventive health care practices (vaccines, parasite and fly control, pregnancy testing cows, fertility testing bulls, processing calves) but also has an emergency component. There are currently four cow-calf herds enrolled in this program.
  - A laboratory-based program has been developed, primarily focused on milk culture labs that have been established on several dairies. Students learn how to collect milk samples for culture, plate cultures, incubate culture plates, interpret findings, and take corrective actions based on results.
  - A relationship has been developed with a local slaughter plant (Southeastern Livestock Provision) where students collect specimens, obtain tissues such as reproductive tracts, and perform slaughter process inspections.

### 12.4.3 Describe unique clinical educational resources or programs that enhance the educational mission.

**Companion Animal Initiative in Tennessee (CAIT).** This program provides several unique educational opportunities for students in areas ranging from cultural awareness (VMD 897 Cultural Influences on Animal Health Care) to shelter medicine (VMD 867 Issues and Opportunities in Shelter Medicine), all with the ultimate goal to reduce Tennessee's unwanted pet population. The College, in partnership with the Young-Williams Animal Center (YWAC), provides elective externship experiences in shelter medicine (VMD 818 Shelter Medicine), and hands-on exposure with community relations. Non-credit, extracurricular programs offered through CAIT include:

- **Vets for Pets of Homeless Owners (VPHO).** This program was created to ensure that pets of homeless individuals receive preventative veterinary medical care and can remain with their owners rather than be surrendered to enter over crowded animal shelters. Students volunteer to participate. Partners include YWAC, the Knoxville Veterinary Medical Association, Boehringer-Ingelheim, Novartis, Abbott, Purina, and community support. Professional services include physical examinations, preventative immunization, and spay/neuter. To date, 336 clients with 598 pets have been evaluated and helped.
- **Feral Fixin'.** This trap-neuter-release program was developed to decrease shelter intake of feral/free roaming cats. The program provides opportunities for students throughout their veterinary education to learn feral cat medicine, wildlife conservation, trap-neuter-return program management, field anesthesia techniques, and feline spay and neuter skills.

**Anesthesia Summer Crew.** This SAH experience provides 8-10 rising junior students the opportunity to put into practice, skills learned in the core anesthesia course. During this 10-week session, students learn routine and advanced anesthesia techniques through the VMC anesthesia service. Crew students participate in anesthetic and perioperative surgical care, ICU emergency and critical care, and in clinical research projects. Career interests of each member of the Crew are addressed. The opportunity for early clinical introduction provides these students significant encouragement for advanced training, specialization, and leadership roles in the veterinary profession. Because this program is situated at an influential time in the four-year professional program, it provides advanced clinical and professional leadership training for rising junior-year students. As Crew members return to the classroom at the end of the summer for their third year of study, and later return to the teaching hospital to begin the final clinical year of veterinary education, they provide a reference of high expectations among their peers.

**Large Animal Emergency Relief Service (LAERS).** This service was established to provide after-hours ambulatory emergency coverage for regional veterinarians. A veterinarian with 10-years of ownership experience in a practice of this type was hired to develop and supervise the service. The LAERS operates by having local practitioners turn their phones over to the LAERS to manage after-hours large animal emergencies. All follow-up care is provided by the regular private practice veterinarian. Currently, 10 local practices use this service. Students and interns from the Field Service rotation and veterinary technician interns accompany the LAERS clinician on ambulatory emergency calls. This service has experienced exceptional support and growth in the 9 months since being established, which has provided valuable hands-on exposure for the students to many large animal emergencies (total 230; average 24 calls/month; 22% farm animal and 78% equine) that the students would have otherwise not seen. Students and interns benefit from focused training and gain critical problem solving skills in large animal emergency medicine where 'walk around' knowledge is particularly important.

### 12.4.4 If off-campus clinical instruction sites are regularly used by multiple students, complete Table D and describe the planning, supervision, and monitoring of students; and contracting arrangements for non-institutional based faculty.

The CVM does not use any off-campus sites for core clinical instruction.

**12.4.5 Describe the involvement and responsibilities of professional students in the healthcare management of patients (and clients) in clinical programs of the college.**

Students in their senior year of the professional curriculum are engaged fulltime in the healthcare management of all VMC patients. Students rotate among the hospital services in 2-3 week clerkship rotations and are involved in and responsible for all aspects of patient management, under the direct supervision of senior veterinary clinicians and house officers. Most clinical service teams consist of a senior clinician, resident, intern, veterinary technician, veterinary assistant, and 3-6 students. For small animal, avian and exotics, equine, and food animal non-emergency cases, students are responsible for history taking and physical examination, developing a problem and differential diagnosis list, deriving diagnostic and therapeutic plans, and discussing this list/plan with the supervising clinician. Students are present when informed consent and financial discussions are conducted by the attending clinician. For hospitalized cases, students have full responsibility with clinician oversight, for care and evaluation, ordering and submitting diagnostic tests, performing routine technical procedures such as venipuncture, cystocentesis, catheter placement, fine needle aspirates and biopsy collection, and bone marrow aspirates. Students assist or observe in more complex, invasive, or advanced procedures. Students are also responsible for physical examinations and monitoring of the patient, and daily progress notes and other medical record notations using the problem-oriented medical record (POMR) approach to establish a problem list, differential diagnoses, diagnostic plan, data interpretation, treatment/monitoring plan, and client education/follow-up plan.

In the community practice and dentistry clerkship, students are expected to function as the primary clinician in the delivery of maintenance and preventative healthcare for dogs and cats. In this clerkship, students get significant opportunity for hands-on clinical experience with routine diagnostics and communication tasks.

The responsibilities of students participating in services without primary patient care vary. For example, students perform complete necropsies under the supervision of a pathology faculty member or resident. In anesthesia, students are responsible for formulating an appropriate anesthetic and monitoring regime, placing an intravenous catheter and endotracheal tube, and monitoring of the patient until extubation. Radiology students are responsible for learning and performing the technical aspects of imaging.

**12.4.6 Describe how subject-matter experts and clinical resources are integrated into clinical instruction.**

Subject matter experts, who are mostly board-certified specialists, together with house officers in training, and licensed veterinary technicians are integrated into the clinical curriculum through direct oversight and supervision as well as through participation in regular clinical rounds. Faculty experts and those with specialty expertise are fully engaged in didactic teaching in the first 3 years of the curriculum, lecturing in the basic sciences courses and participating as facilitators in Application Based Learning Experiences (ABLEs). Many clinical faculty experts and specialists coordinate courses in their areas of expertise within the core curriculum or within elective courses. A wide variety of clinical resources are utilized for teaching, including referred and first-opinion patients, animals at the local shelter and from adoption agencies, and animals in zoological collections. Students also have the opportunity for elective externship opportunities in a large number of private and institutional practices, both domestically and internationally.

**12.4.7 Describe the adequacy of the medical records system used for the hospital(s), including field service and/or ambulatory and population medicine. Records must be comprehensive and maintained in an effective retrieval system to efficiently support the teaching, research, and service programs of the college.**

The Health Information (HI) system provides for continuity of patient care and supports advanced clinical education. The HI and Computer Operations (CO) departments work closely together to develop and maintain a complete, comprehensive, and accessible patient record system and patient database. This system has the capacity to provide prompt and detailed searches specifically tailored to the needs and interests of the individual. The HI system is based on a Unit Record concept whereby the patient is assigned a record number at the first visit which is used for all subsequent visits. The record is organized in reverse chronological order with the most recent activity

on top. Each individual episode of care is maintained separately within the record and any non-episode of care (e.g. prescription refill, client communication, laboratory specimens, etc.) are filed according to the dates of activity. Individual forms and documents within the patient record are filed in a prescribed order to ensure consistency of documentation and information retrieval. Patient records are filed in lateral shelves in Terminal Digit Order using color coding for accurate filing. An electronic bar code tracking system is used to track movement of patient records, enabling quick and efficient access to patient records. The patient medical record is a hybrid electronic and hard-copy system. The electronic portion of the patient record is accessed by the same patient record number as the paper portion. The hybrid record is a necessary transition tool to assist in the movement to an electronic (paperless) patient record. Most laboratory data, communications documents, progress notes, and imaging results are electronic.

Clinical faculty, staff, and students are involved in comprehensive documentation of patient management and communications with clients, referring veterinarians, and associated healthcare providers involved with patient care. Students have an active role in documenting patient care and are expected to record history, physical examination findings, differential diagnoses, daily progress notes, plans (diagnostic tests and procedures, treatment, and client education), operative procedures, anesthesia and recovery logs, clinician orders, discharge instructions, and client communications. The electronic Hospital Computer System (HCS) is used to order lab work, view lab results, and write discharge instructions, operative reports, client/veterinarian communications, and progress notes. Students can view patient bill details, use the HCS to check-out patient charts to their service to track patient arrivals, and use the electronic patient appointment calendars as a planning tool.

#### **12.4.8 Describe how the college has responded to increasing/decreasing clinical resources.**

The caseload has shown steady growth in nearly all service areas. The College has responded by increasing numbers of hospital-based technical staff, house officers, and faculty with clinical responsibilities. This has been primarily accomplished through hospital-based revenue generation. The opening of the new Large Animal Hospital and Equine Performance and Rehabilitation Center has provided additional clinical service and instructional space. The College has also responded to the need for primary-care patients through implementation of the community practice and dentistry service, through the expansion and modification of services offered by the food animal and equine field services, by the establishment of the small and large animal emergency services, and by the creation of a shelter medicine program.

#### **12.4.9 Describe the means used to maximize the teaching value of each case across the curriculum.**

The role of the professional student in patient management has been described in detail above. Virtually all patients presented to the VMC are seen by a student. Faculty utilize case material from the VMC in their core and elective didactic lectures to students in all four years of the curriculum.

The teaching value of clinical cases varies due to a variety of factors. Clinical cases with good to high teaching value gain maximum exposure through presentation at student and/or faculty grand rounds, presentation at morbidity and mortality rounds, occasionally as student presentations in core courses, and through publication as case reports. Clients whose animal has died or been euthanized are strongly encouraged to permit necropsy evaluation to support further student/faculty/house officer learning as well as the learning objectives of the biomedical and diagnostic sciences department. Cases with good learning concepts may be developed into ABLE cases to be used with first, second, or third-year students. Clients in need of emotional support relative to their animal receive help from the Veterinary Social Work (VSW) program. VMC personnel and students receive training in client education and communication through the VSW program. This program provides ongoing training for students, faculty, house officers and staff in client communication skills, grief counseling, pet loss support, conflict management, etc.

## 12.5 Information Resources

### 12.5.1 Describe and comment on the adequacy of information retrieval and learning resources.

The [Webster Pendergrass Agriculture-Veterinary Medicine Library](http://www.lib.utk.edu/agvet/) (<http://www.lib.utk.edu/agvet/>) is the largest of three branches reporting to the University Libraries. It is a 16,000 square foot, one-story library with seating for 200. It is fully accessible to people with disabilities. Two-thirds of the library is a quiet zone with collection shelves. The other third features flexible group study areas, a computer laboratory, adaptive and assistive technology stations, and staff offices. Centrally located in the north wing of the Veterinary Medicine Building, Pendergrass primarily serves the UT Institute of Agriculture (UTIA) and CVM students, staff, and faculty.

Pendergrass is administered and funded primarily by the University Libraries (<http://www.lib.utk.edu/>). The University Libraries, the CVM, and the [Office of Information Technology](#) (OIT) collaborate on library maintenance and improvements costs. Since 2008 services available at Pendergrass have steadily expanded, policies have been refined, study spaces have been enlarged and improved, and technology equipment has been regularly upgraded. The net result is an uplifting, flexible library space large enough for the 120,000 volume collection.

The collection foci at Pendergrass are veterinary medicine, agriculture, and related biosciences and social sciences. Complementary collections include biosciences, social sciences, and nursing in the UT Knoxville (UTK) Hodges Main Library and clinical medicine in the UT Medical Center [Preston Medical Library](#). Each of these collections is accessible via one [catalog](#) interface upgraded in August 2014. Books and articles from other campus libraries are delivered to Pendergrass or CVM departmental offices Monday-Friday or are scanned and sent. Customized Web guides curated by the veterinary librarian (<http://libguides.utk.edu/veterinaryinformation>) are designed to meet instruction, research, and service needs of the college. The veterinary librarian collaborates with students, staff, and faculty and other UTK and veterinary librarians to benchmark and develop the collection.

Four compact shelving bays installed at Pendergrass yielded 80% more shelf space for [collections](#). Floor space was freed, providing the ability to respond to changing expectations and needs without expanding or moving. A 32-seat computer laboratory in Pendergrass has a dual-purpose; it provides access to library and information resources and a full suite of software available from the Office of Information Technology (OIT). A large screen and ceiling mounted projector added in 2014 to the Pendergrass Alcove greatly improves the quality of training offered by librarians while providing another meeting option for groups of 20-40 individuals. Wireless access throughout the library supports students' computers and loaner laptops. Laptops are part of a growing inventory of [technology equipment](#) for loan, a significant portion of the total circulation at Pendergrass. A large-format poster printer service was launched in 2012 just as the outdated CVM printer needed replacing; this freed CVM personnel for other tasks. The new printer at Pendergrass decreased poster costs and expanded service hours. A [3D printing service](#), started in 2013, is beginning to rival the large format printer in request volume.

Five fully equipped (computer, glass boards, light box, easel) study rooms with seating for 8–10 individuals were built adjacent to the Computer Laboratory. These rooms are reserved for veterinary students and facilitators during case-based learning weeks. One study room was outfitted with practice presentation equipment in 2012. In 2014, equipment that facilitates group collaboration through wirelessly displayed content from individual laptops on a sixty-inch monitor will be installed in another dedicated room.

### 12.5.2 Briefly describe the availability of learning and information technology resources support for faculty and students, including personnel and their qualifications.

[Pendergrass Library](#) is staffed with two full-time librarians, four FTE staff, one Graduate Teaching Assistant (20 hours per week), and one Graduate Assistant (10 hours per week). Seven Student Library Assistants work a total of 103 hours per week. The Day and Evening Supervisors are enrolled in the graduate program at the UTK Information School and have substantive library work experience. One FTE staff position is dedicated to [technology support](#).

The UT Libraries designate librarian liaisons for instruction and collections. Two librarians, Ann Viera, Veterinary Librarian, and Peter Fernandez, College of Agriculture and Natural Resources (CASNR) Librarian provide reference, instruction, and expert search assistance to individuals and groups.

- **Ann Viera** ([http://works.bepress.com/ann\\_viera/](http://works.bepress.com/ann_viera/)) is an Associate Professor and Veterinary Librarian with a master's degree in Library and Information Science from UC Berkeley. She is active in the Veterinary Medical Libraries section of the Medical Library Association and is a member and southeast regional director of the Evidence-Based Veterinary Medical Association.
- **Peter Fernandez** ([http://works.bepress.com/peter\\_fernandez/](http://works.bepress.com/peter_fernandez/)) is an Associate Professor and CASNR Librarian with a master's degree in Library and Information Science from the University of South Florida. He is active in the United States Agricultural Information Network.

### **12.5.3 Describe the methods of access to library information resources for faculty and students when they are on and off campus.**

During fall and spring semesters, Pendergrass Library is open 95 hours per week for on- and off-campus students. Five more hours are added during exam study periods. During semester breaks and summer, the library is open 50 hours per week. Because the library is in the Veterinary Medicine Building, in-person requests at the library information desk or in the halls and email are often the way library users seek answers to veterinary questions, followed by email or phone and the online chat service featured on the library homepage. All University of Tennessee students, staff, and faculty have off-campus access to all university library electronic information resources through personal university NetID and password authentication.

### **12.5.4 Describe the resources (training and support) available to students for improving their skills in accessing and evaluating information relevant to veterinary medicine for sources in any media.**

The veterinary librarian and the [guides](#) she curates offer point-of-need support and feature self-directed training resources for [AVMA Clinical Competency 9](#). The librarian consults with course coordinators each semester on the guide to course reserve materials, which opens up opportunities for collaborating on any library-related course assignments. A short video to help students find an article for a physiology assignment was added in 2013 on the [course guide](#). Curriculum case-based learning weeks provide a regular opportunity for students to improve their skills at finding and evaluating information. The librarian refines training and support each time a case is used. Use of the industry standard Libguides software to curate the guides makes it easy to share content.

Instruction and outreach are continually evolving. A modified database worksheet using the patient-problem-population, intervention, comparison, outcome (PICO) approach to plan an evidence search to answer a clinical question developed for VMD 833 Epidemiology and Evidence-Based Medicine, taught by Dr. Cristina Lanzas in 2013, is seeing wider use during problem-based learning weeks.

### **12.5.5 Describe current plans for improvement.**

Current library priorities include (1) increasing individual and group study space, (2) adding new furniture to improve aesthetics, privacy, and capacity, and (3) creating a 3D printing and consulting workspace.

Results of annual surveys, head and turnstile counts, and other metrics are used to improve library service. Ten hours per week during the 2013-14 academic year, funded by the University Libraries administration, were added during fall and spring semesters based on results from a 2013 survey. Head counts during the expanded hours (10-12 midnight Sunday through Thursday) were used to justify continued funding for the 2014-15 academic year. Services added in the last 5 years that contribute to student success or support veterinary research include: [De-stress for Success](#) activities during exam weeks; a leisure reading collection; Writing Center consultant two days weekly; two OIT biostatisticians consulting on research design at Pendergrass 4 days per week; and a science tutor available 9 evening hours per week.



## 12.6 Students

### 12.6.1 Complete Tables A, B, C, and D, and analyze trends.

See Appendix page A19; Table A, Veterinary Medical Program Enrollment

See Appendix page A19; Table B, Interns, Residents, and Graduate Students

See Appendix page A20; Table C, DVM Students Per Year for Last Five Years

See Appendix page A20; Table D, Student Enrollment in Other Educational Programs

**Veterinary Medical Program.** In 2007, the CVM faculty and UT Board of Trustees elected to increase class size from 70 to 85 students (60 Tennessee residents and 25 nonresidents) to meet increasing societal needs for veterinarians. The increased class size was implemented with the 2008 fall semester, Class of 2012. The goal of enrolling 85 students was exceeded due to an acceptance rate beyond normal predictions. A similar increase occurred in 2011 with the Class of 2015. The college has accommodated the 96 and 95 student class sizes by expanding classroom facilities, increasing teaching supplies, and adding additional laboratory and surgical stations. Increased tuition from the enrollment increase helped to fund these additions. Nonetheless, the college faculty believe the optimal teaching and faculty-to-student ratio is achieved with the target number of 85 enrolled students in the preclinical curriculum.

The college faculty and staff strive to retain and graduate 100% of our admitted class, however we realize this goal is unrealistic. Over the period identified where full admission and graduation rates can be calculated (Classes of 2012-2014), the 4-year graduation rate is 95.5% (254 graduates of 266 matriculating students). Many students who return following withdrawal or academic deceleration are able to successfully complete the professional curriculum and graduate. The corrected graduation rate for students in that same period is 97.0%, with 8 of 16 student attritions resulting in permanent withdrawal or dismissal. Causes for withdrawal or dismissal are roughly equal between personal issues and academic difficulty.

**Interns, Residents, and Graduate Students.** Both intern and resident numbers have increased slightly over the past 6 academic years. The increase is primarily in response to an expanding clinical caseload and new specialty services provided within the veterinary medical center. Advanced training programs in radiation oncology, emergency critical care, cardiology, sports medicine, integrative medicine, and field services have been initiated. In response to market needs and funding, resident numbers have been reduced in nutrition and in orthopedic surgery. Total intern and resident numbers align well with current resources and CVM strengths in advanced clinical education and clinical research trials.

PhD and MS graduate student enrollments have remained steady over the past 5 years in the clinical departments, but have decreased in our Department of Biomedical and Diagnostic Sciences. The decline in graduate students appears to correspond with a national trend of reduced research funding (i.e., NIH, NSF and USDA grants). State research funds (internal funding) that support graduate student instruction has remained steady. To enhance opportunities for veterinary students to gain research expertise, collaborative graduate programs are pending final graduate council approval for a dual DVM-PhD degree, a combined DVM-MBA degree, and collaborations with the Bioengineering Institute along with our ongoing DVM-MPH degree program.

**DVM Students.** Admissions procedures were changed in 2013 to help increase diversity within the professional degree program. The goals were to conduct a more global candidate assessment and improve mechanisms for selecting high quality candidates with gender, racial, ethnic, socioeconomic, and professional interest diversity. This revised process resulted in a significant increase in class diversity with 10.6% underrepresented minority students being enrolled in the Class of 2018, compared to historical enrollments of 1.2-5.9% noted in the past 5 years. To further support diversity mentoring and recruitment, Dr. Mike Jones has been appointed Director of Diversity and Recruitment. A targeted recruitment strategy includes college site visits, participation at minority career fairs, a Summer Student Intern Experience for disadvantaged high school students, an undergraduate internship program in collaboration with Stanford University, and a summer externship collaboration agreement with Tennessee State University. These programs are directed at disadvantaged and diversity student populations.

Along with recruitment goals, each program provides educational and development experiences which enhance participants' preparation and competitiveness in the veterinary school admission process.

**Other Educational Programs.** Since 2010, a deliberate increase in clinical year student admission has occurred. The increase enrollment of Ross University and St. George's University clinical year students provides added financial resources to the college and critical rotation coverage in the clinical setting, without overextending the preclinical programs. A limit of 22 clinical students per year is dictated by defined student maximums in core rotations. Additional clinical students bring diversity of interest and experience to our clinical program and provide a resource to distribute clinical case management responsibilities in traditionally high clinical caseload areas. Additional clinical students help address student concerns expressed in rotations such as orthopedics and neurology, where the physical requirement of patient care and high service caseload can, at times, interfere with optimal instruction. Additional supportive services have been directed to the incoming clinical students. New programs include faculty mentor/advisor programs, graduate certificate ceremonies, and a comprehensive orientation to include pre-work in radiology to improve academic success. In addition to the enrolled offshore clinical year students, the CVM program provides 2-16 week externship opportunities to visiting veterinary students from the US and abroad (eg., Argentina, Brazil, Chile, Germany, Japan, Portugal). Approximately 30 students participate as visiting senior-year externs each year.

**12.6.2 Provide a listing of student services. These services must include, but are not limited to, registration, testing, mentoring (advising), counseling, tutoring, peer assistance, and clubs and organizations.**

**Pre-Vet Advising.** Academic advising to high school and college students or others who are interested in our professional program is provided. Advising is done in person, over the phone, or via e-mail and includes mailing of relevant information to interested individuals. Advising appointments are also scheduled with the Associate Dean for Academic and Students Affairs.

**Student Admissions.** The Office for Academic and Student Affairs (OASA) receives, organizes, and maintains all admission records from the Veterinary Medical College Application Service, including applications, transcripts, GRE scores, recommendation letters, and other confidential candidate documents. The office provides complete support services to the Admissions Committee, including records duplication, collation and organization of applicant assessments, scheduling of applicant interviews, and communication with applicants regarding application status and final disposition.

**Freshman Orientation.** The OASA organizes and oversees a week-long orientation program for new students, including a two-day off site Tennessee Leadership Camp (TLC). Office personnel oversee training of sophomore students as small group facilitators for the TLC, secure financial support from sponsors, and organize activities that are designed to develop communication skills, leadership qualities, and foster team building within the class.

**Registration and Scheduling.** The OASA is responsible for registration of professional students in all didactic courses, clerkships, and externships during all four years of the curriculum. In addition, the OASA schedules all classrooms, laboratories, clerkships, and externships for the entire DVM curriculum.

**Financial Aid and Scholarships.** The OASA oversees the assimilation of student financial information and the awarding of private scholarships. The office also provides financial information to the UTK Office of Financial Aid for disbursement of federal and private loans and grants. The OASA collects and provides relevant information to the Awards and Scholarship Committee for selection of student awardees. Emergency financial support is available from the CVM Dean's office.

**Student Academic Records.** All DVM student academic records, including but not limited to grades for all didactic courses and clinical clerkships, tracking of student compliance with curricular requirements, reporting of grades to main campus, and validation of students for graduation are handled through the OASA. The office identifies students with academic deficiencies and collates documentation to support review activities of the

Academic Progress Committee. The office is also responsible for determining class ranks and all information related to student academic performance.

**Student Advising.** The OASA coordinates selection of pre-clinical and clinical advisors for all professional students. In addition, the Associate Dean for Academic and Students Affairs is available to meet with students who encounter academic or other difficulties and to discuss sources for assistance, including private confidential meetings with a certified counselor. The OASA also proctors exams for students with special needs. On an as needed basis, the office has also worked to engage upperclassmen as tutors for students who are unable to effectively engage a support structure of current classmates.

**Director of Diversity and Recruitment.** A Director of Diversity and Recruitment is onsite and actively engaged with local (College of Agricultural Sciences and Natural Resources; College of Arts and Sciences) and regional undergraduate, pre-health science, and pre-veterinary program advisors. Site visits and promotion at club fairs are conducted by both the Director and the Associate Dean for Academic and Student Affairs.

**Student Clubs and Organizations.** Support for student organizations, including maintenance of centralized database for all clubs, club officers, and their meetings, is provided by the OASA. In addition, the office handles all incoming and outgoing mail for these organizations and assists with meeting room reservations and related matters.

**Clinical Training Program for Off-Shore Students.** The Associate Dean for Academic and Student Affairs reviews all applications for entrance of offshore students into our college's senior-year clerkships. Following admission (15-22 students/yr), the OASA oversees all aspects of their education, including their clinical orientation, correspondence with their home schools regarding grades and other academic issues, and organizing ceremonies of academic completion.

**Faculty Evaluations.** The OASA handles student evaluations of all courses, clerkships, and externships. Student teaching evaluations are collated, scored, and distributed to each department head and faculty member.

**Commencement.** The commencement ceremony, including the senior graduation breakfast with the Tennessee Veterinary Medical Association, rehearsal of commencement ceremony, and organization of the reception for graduates, family members, invited guests, and college faculty is coordinated by the OASA.

**Special Events.** The OASA oversees or provides support for numerous student-focused college events, including the professional coating ceremony, senior exit luncheons, college animal health and pharmaceutical day, student immunizations, and other related activities.

**Mental Health Counseling.** The college employs mental health counselors to assist students and the counselor is located onsite. Veterinary students have direct access to counseling at all times.

#### **Additional Academic and Student Support**

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| • Student Handbooks  | • Testing Accommodations – CVM private exam rooms and exam monitor or UTK testing center |
| • Veterinary Bookstore of TN – notes, books, supplies                              | • On-site Food Service   |
| • Class notes in paper or digital format including class PowerPoint lectures       | • Notary Public  |
| • Lecture Capture capability for most lectures                                     | • Alumni Services  |
| • On-line Course Evaluations via One45   | • Career Development Referrals   |
| • Veterinary Social Work Student Support Program                                   | • Professional Liability (UTK risk management)   |
| • UTK Student Health Center  | • SCAVMA Peer Tutoring Program   |
| • Occupational Health Assessment and Counseling                                    | • Big Sib-Little Sib (peer assistance) Program   |
| • Office of Disability Services – Disability and Accommodation Evaluation Services | • Web-based Computer Support   |
| • Student Counseling Center  | • International, Study Abroad Support  |
| • Blackboard course management, grade distribution                                 | • Externship Programs  |
|  | • Educational Enhancement Committee  |
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**Student Organization and Clubs**


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- Student Chapter, AVMA (SCAVMA)
  - Student Chapter, ACVIM
  - Aquaculture and Aquatic Medicine Club
  - Avian, Wildlife and Exotics (AWE) Club
  - Behavior and Alternative Medicine (BAM) Club
  - Canine Club
  - Christian Veterinary Fellowship
  - Equine Club
  - Feline Club
  - Food Animal Club
  - International Veterinary Student Association (IVSA)
  - Lesbian-Gay VMA (LGVMA)
  - One Health Club
  - Pain Management Club
  - PAWsitive Impact
  - Suicide Awareness in Veterinary Education (SAVE)
  - Student Chapter, AAEP
  - Shelter Club
  - Student Vet Emerg Critical Care Society (SVECCS)
  - Small Animal Surgery Emergency Team (SASET)
  - Theriogenology Club
  - Veterinary Business Management Assoc (VBMA)
  - Class Organizations
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**12.6.3 Provide a summary of college activities in support of placement of graduates.**

The CVM web production specialist maintains an active electronic employment opportunities bulletin board (Veterinary Careers) on the CVM website. All employment descriptions received by the CVM are placed on the electronic bulletin board (Job Opportunities on Vet Net). Practitioners can access the web site and directly place their job descriptions. All job descriptions received electronically are also e-mailed to all members of the senior class. An expanded career support web page is under development and will include career and employment resources, in addition to a career support link that is maintained by the Pendergrass Agriculture-Veterinary Medicine Library. The Associate Dean for Academic and Student Affairs distributes Vet Unite advertisements monthly to the senior year class. A referral program in career development counselling has also been in place for over 10 years. A formal expansion of that program is underway and will include weekly office hours with experienced career development counselors.

In addition to these career placement services, each spring semester a weeklong workshop in business management, resume writing, and contracts and negotiation is delivered as core curriculum materials to junior-year students immediately before beginning their clinical year. As part of the recent comprehensive curriculum review, a 4-year progressive curriculum with staged business and career skills development has been approved and is scheduled to begin the 2015 fall semester.

Career Services are also provided at local and regional veterinary conferences. At the CVM Annual Conference the college provides interview rooms for students to meet with practitioners interested in hiring an associate. New in 2015, an annual Career and Business Skills Education Day will be held for junior year students in conjunction with the Tennessee Veterinary Medical Association, Music City Veterinary Conference (Feb. 27, 2015).

**12.6.4 Provide academic catalogue(s) (or an electronic address for this resource) and freshman/upper-class orientation materials.**

See Appendix page A21; Orientation Programs

Information relative to CVM courses can be found in *The University of Tennessee Graduate Catalog, 2014-2015* posted online at <http://catalog.utk.edu/content.php?catoid=17&navoid=1775>. The college also has a *professional student handbook* with orientation information; it can be found at the following link: [https://vetmed.tennessee.edu/VetNet/Documents/GRADUATE\\_STUDENT\\_HANDBOOK-vetstudentnarrative.pdf](https://vetmed.tennessee.edu/VetNet/Documents/GRADUATE_STUDENT_HANDBOOK-vetstudentnarrative.pdf)

### 12.6.5 Describe the system used on an ongoing basis to collect student suggestions, comments, and complaints related to the standards for accreditation.

Several independent systems are used to collect student comments, suggestions, or complaints regarding the standards for accreditation.

- Each academic year, during both the fall and spring semesters, the Associate Dean for Academic and Student Affairs meets directly with students in the preclinical curriculum and also e-mails all students in all four years of the DVM degree program, briefly describing the accreditation standards and encouraging students to make comments they feel are important to the accreditation process.
- A yearly prepared hardcopy memorandum also instructs students how to make anonymous comments related to COE standards. A space for comments is included in the memorandum, along with a summary of the standards.
- A locked suggestion box is located in the student break room on the first floor between the Pendergrass Agriculture-Veterinary Medicine Library and the student lecture theaters. The curriculum program assistant, Ms. Susan Cherry, maintains the locked box and collects comments weekly. She provides a typed summary of all comments to the Dean and Associate Dean for Academic and Student Affairs, making sure to maintain author anonymity.
- The college also maintains an intranet site which is directly linked to the AVMA COE Policy and Procedures Manual website. Students are encouraged to also communicate concerns directly to the COE by e-mail.

### 12.6.6 Describe current plans for improvement in resources for students.

Plans for resource improvement include ongoing renovation and improvement of existing facilities and the construction of a teaching and learning center. Creation of a simulation center for experiential learning and skills practice is in the planning and development phase. Identification of improved student space includes improved student break areas and a food supply shop [Provisions on Demand (POD)]. A parking garage is being planned by Parking Services and is scheduled to be opened in 2017 to help alleviate parking and access issues.

Curricular improvements target three areas: (1) ongoing course improvement in response to student evaluations, (2) new programmatic development, and (3) broader changes in response to the 2014 comprehensive curriculum review.

- **Ongoing Course Improvement in Response to Student Evaluations.** Ongoing improvement involves comprehensive course review by the college curriculum committee on an annual basis. Recommendations are implemented by course coordinators, with subsequent changes updated each March within the CVM course catalog to assure descriptions are relevant to courses as currently taught. Curricular mapping is in progress with plans for ongoing review and content revision. The goal is to ensure content matches educational objectives and improves educational efficiency, while avoiding critical subject matter gaps or redundancy.
- **New Programmatic Development.** New program development includes a 4-year non-technical skills course (e.g., communication, ethics, business finance, and wellness). Online resource development ensures student access to comprehensive content, not available in the standard curriculum.
- **Comprehensive Curriculum Review.** Major curricular organization changes are under review and include options for an expanded clinical year and an integrated block curriculum. Final approval of curricular reorganization will be determined by faculty vote.

## 12.7 Admission

### 12.7.1 State the minimum requirements for admission.

Criteria for evaluation and admission of pre-professional students into the professional degree program are reviewed each year by the Associate Dean for Academic and Student Affairs and the College Admissions Committee. The goals of these annual reviews are to ensure that new and returning members have a thorough understanding of all college admissions criteria and policies and to provide ample opportunity to discuss and consider recommendations for modifying existing admission procedures. In the view of the Admissions Committee and faculty, the value of the pre-veterinary curriculum is two-fold in that it allows students to assimilate a broad knowledge base upon which their professional veterinary education may be built and it provides evidence regarding the abilities of applicants to navigate a rigorous science-based curriculum much like the curriculum they will encounter in the professional degree program.

The minimum requirements for admission to the professional degree program include benchmarks for academic achievements as well as significant direct veterinary and animal experience. Consideration is given to academic excellence (overall GPA, science coursework GPA, last 45 hours GPA), the course-load per term, employment concurrent with school attendance, participation in athletics (intercollegiate, club, etc.), or participation in and leadership roles in organized academic and community activities. Honors, awards, and advanced degrees are also considered. To qualify for admission, applicants must have completed or be able to complete by the end of the spring term prior to matriculation at least 66 semester credits (or equivalent) of required pre-veterinary courses (see Table 1) with a grade of C or better. The biochemistry pre-veterinary course requirement must have been satisfactorily completed within five years of the time the applicant matriculates into the CVM. Required pre-veterinary courses may be completed at any accredited college or university offering courses equivalent to those at The University of Tennessee Knoxville. Applicants are strongly encouraged to take additional biological and physical science courses, especially comparative anatomy, mammalian physiology, and bacteriology with laboratory, and statistics. Non-resident applicants must have a cumulative grade point average of 3.20 or greater on a 4.00 scale for applications to be considered. Applications are currently accepted only from United States citizens and permanent residents of the United States.

<b>Course/Discipline</b>	<b>Details</b>	<b>Credit Hours</b>
Biology	Minimum of 14 credits with two semesters of Animal Biology or Zoology with lecture and lab (8 credits), one semester of genetics (3 credits), and one semester of cellular or molecular biology (3 credits). An upper division cellular or molecular biology course is preferred.	14
Chemistry	Minimum of 16 credits with two semesters of inorganic chemistry lecture with labs (8 credits) and two semesters of organic chemistry lecture with labs (8 credits).	16
Physics	Minimum of 8 credits with two semesters of lecture and lab	8
Biochemistry	Minimum of 4 semester credits of didactic course work, exclusive of laboratory credit. This should be a complete upper division course in general cellular and comparative biochemistry. Half of a two-semester sequence will not satisfy this prerequisite requirement.	4
Humanities and Social Sciences	May include, for example, courses in English literature, speech, music, art, philosophy, religion, language, history, economics, anthropology, political science, psychology, sociology, and geography.	18
English	Minimum of 6 credits, including two semesters of English composition	6

The CVM admits 85 applicants to the DVM program each year. The target numbers of 60 Tennessee residents and 25 non-residents are established by Tennessee Code (Tennessee Code Annotated § 49-7-138) whereby a minimum of 70% of the class must be Tennessee residents. Additionally, Tennessee residents are to be given preference over similarly accomplished non-resident applicants.

### 12.7.2 Describe the student selection process, including measures to enhance diversity.

**College Admissions Committee.** The evaluation and admission of highly-qualified applicants to the DVM degree program at UTCVM are pre-eminent missions of the college and are integral to the college's educational goals. The general charge of the Admissions Committee is to evaluate the credentials of applicants and to recommend appropriate candidates to the Dean for admission. The admissions process is chaired by the Associate Dean for Academic and Student Affairs. Members of the Admissions Committee are appointed by the Dean and, at present, include 9 full-time faculty members from CVM (veterinarians and non-veterinarians), and one faculty member from the Department of Animal Sciences (UT). Each member is appointed to serve on the committee for a three-year period with terms staggered to allow replacement of approximately one-third of the membership each year. The Admissions Committee oversees the entire admissions process including determining which applicants in the in-state and out-of-state pools are advanced at each step of the process.

**Summary of the Admissions Process.** UTCVM requires that all applicants submit an application through the Veterinary Medical College Application Service in addition to three letters of recommendation, official academic transcripts, GRE scores, and a UTCVM-specific supplemental application. The overall goal of the admissions process is to identify appropriate applicants who (1) exhibit evidence of sufficient intellect, knowledge, and potential to handle the rigorous science-based curriculum of the professional veterinary program, (2) possess strong communication skills and inter-personal capabilities, and (3) demonstrate diverse experiences related to veterinary medicine with career interests that position the candidate to make positive and meaningful contributions to the veterinary profession. The college uses a four-step admissions process for evaluation and final selection of applicants who are offered admission to the professional DVM degree program.

- *Step 1:* An initial review of all submitted applications is conducted within the Office for Academic and Student Affairs in order to verify application completeness, including a written plan for completion of any unfinished prerequisite courses. An academic profile score (APS) is calculated for each candidate from an objective rubric based on academic performance, rigor of academic workload, and GRE score. A minimum APS is separately established for Tennessee residents and non-resident candidates; the non-resident APS is typically 10-15 points higher than Tennessee residents. Those candidates with complete applications and achieving the minimum APS are then advanced to Step 2 of the admissions process. The remaining candidates are withdrawn from further consideration.

**Note:** A new component added to the admissions process in 2013 included the evaluation of an optional disadvantage or hardship statement. For candidates progressing normally to Step 2, this statement is part of the holistic packet assessment. However, those candidates submitting a disadvantage or hardship statement and not selected for holistic packet review based on a low academic profile score (Step 1) are evaluated for further admissions consideration by the admissions committee. If the admissions committee believes the candidate's statement supports a potential for greater academic achievement were that disadvantage or hardship absent, the committee may elect to increase the candidate's APS to the minimum level needed for advancement to Step 2. Candidates advanced in this manner progress through Steps 2-4 like all other applicants.

- *Step 2:* A thorough, holistic packet review of non-academic factors (section 12.7.3) is conducted by a three-person team comprised of faculty members from all departments within the college as well as members serving on the admissions committee. Each member of the review team evaluates four categories of information within the packet (quality of academic accomplishments; personal interest statement and references; veterinary and animal experience; candidate intangible qualities such as leadership skills, diversity, interest area within veterinary medicine, and impact of hardship or disadvantage) and performs an independent assessment using a standardized scoring sheet for each of these categories. A statistician assists with statistical adjustment of subjective scores to negate significant positive or negative evaluator bias in scoring rigor. All individual evaluator scores for all applicants are entered into a statistical database which compares differences in evaluator and team scoring of candidates. This process produces an



'adjusted score' for each candidate, thereby dampening differences in interviewer scoring rigor. To meet residency preference requirements, Tennessee residents and non-resident pools are evaluated as individual candidate pools. Individual applications with significant score deviations among reviewers are identified and re-evaluated collectively by the review team in order to check for possible oversights. Step 1 and 2 scores are combined and ranked within state residency status. The admission committee then selects candidates to progress to Step 3 (interview) from among these ranked pools. Interviews are offered to approximately 350 applicants in roughly equal proportion of Tennessee resident and non-resident applicants.

- *Step 3:* A standardized onsite interview completes Step 3 of the application process. Candidates are interviewed by a three member interview team comprised of one CVM faculty member, a senior-year CVM student, and a private practitioner; additional CVM faculty members may substitute for students or practitioners when necessary to ensure a three member interview team. Eight interview teams interview all candidates selected for interview during a 3-day period in January. Students and practitioners may serve 1/2 day to 3 days of service, as their schedule permits. Faculty members serve as a consistent team leader for each interview team for the entire process. The interview team faculty member is not a member of the admissions committee and, as such, is 'blind' to the academic credentials of the candidates to avoid academic bias in the assessment of non-academic factors. Interview team members have access to each candidate's personal interest statement and animal experience summary for review prior to the interview. Interviews last 30 minutes, and are worth 1/3 of the admission process score. The CVM conducts 'structured' interviews in which approximately half of the interview consists of each applicant being asked five to six similar (but not the same) questions to more equitably compare all candidates. About half of the interview consists of questions interview members generate after review of each candidate's personal statement or that are derived during the interview. Following the interview, the three interviewer's scores are statistically adjusted, as previously described in Step 2.
- *Step 4:* All scores from Steps 1-3 are normalized to a percent scale to allow for equal weighting of each step's score. The academic profile score (Step 1) is added to the adjusted packet review score (Step 2) and adjusted interview score (Step 3) to create each candidate's admission score. A final meeting of the college admissions committee is then held to review the overall process and to create the offer, alternate, and denied admissions lists. These lists are then submitted to the Dean prior to mailing official admissions letters. Applicants who are interviewed but denied admission are given an opportunity to discuss their application with the Associate Dean for Academic and Student Affairs in order to obtain a summary of comments and suggestions for improvement based on evaluative feedback from the Admissions Committee.

**Measures to Enhance Diversity.** The UTCVM applicant pool reflects the national applicant pool and is relatively homogeneous with respect to race (primarily Caucasian), ethnicity, and gender (primarily female). Of the 353 students currently enrolled in the DVM degree program, only 19 (5.4%) of our students are underrepresented minorities. Recent revisions to the admissions process (2013) to add more weight to a holistic review of candidates' application credentials and to consider hardships or societal disadvantages which negatively impact academic performance have increased professional student diversity within the college. Notably, the college saw its enrollment of underrepresented minority students increase from a historical average of 1.2-5.9% to 10.6% for the Class of 2018.

The CVM Director of Diversity and Recruitment, Dr. Mike Jones, serves as a member of the admissions committee and chairs the diversity committee. Dr. Jones and these committees are critical to advancing the college's diversity plan. The Diversity and Recruitment Director and Associate Dean for Academic and Student Affairs actively recruit at colleges and universities, including some Historically Black Colleges and Universities (HBCU) in the region as well as at high school college fairs and career nights. The CVM also organizes and supports an 8-week Veterinary Summer Experience program for Tennessee high school students and a Stanford University undergraduate externship program to encourage all students to consider veterinary medicine as a career. Students who participate in the program include underrepresented minorities. These students are mentored and tracked

through their undergraduate college experience. The CVM is also engaged in a collaborative plan with Tennessee State University to support the career development of underrepresented minority undergraduate students. The College also participates in UTK TRIO and Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS) undergraduate programs, as well as in AAVMC sponsored career fairs targeting underrepresented student populations for mentorship and recruitment. In addition, the VOICE (veterinary students one in culture and ethnicity) organization provides diversity recruiting programs in veterinary medicine for primary, middle, and high schools in east Tennessee to interest students in veterinary careers earlier. The long-term success of these programs must be measured by the numbers of underrepresented minority students in the CVM applicant pool and who matriculate into the CVM. Beginning with the Class of 2020, the CVM plans to also accept a small proportion of international student candidates in an effort to further expand student diversity.

### 12.7.3 List factors other than academic achievement used as admission criteria.

Factors other than academic achievement used in admission criteria are evaluated in Steps 2 and 3 of the admission process and include: overall quality of the application; quality of the academic experience, quality of the applicant's personal statement; letters of reference; animal and veterinary experience, both breadth and quality; knowledge of the veterinary profession and career opportunities available to veterinarians; extracurricular and community service experiences; leadership experiences, teamwork, professional interest areas, personal qualities (maturity, motivation, communication skills, ethics, cultural awareness, critical thinking/problem solving skills, professionalism, etc.) and diversity. From the disadvantage or hardship statement, the concepts of 'grit, resilience, and distance traveled' (how far one has come despite life's barriers) are important considerations in selecting applicants.

### 12.7.4 Complete Table A.

Year	State Residents		Non-Residents		Contract Students		Total	
	A/P†	O/A‡	A/P	O/A	A/P	O/A	A/P	O/A
2009-10	152/60	64/61	709/25	77/24	NA	NA	861/85	141/85
2010-11	133/60	66/60	597/25	62/35	NA	NA	730/85	128/95
2011-12	127/60	66/64	538/25	66/24	NA	NA	665/85	132/88
2012-13	165/60	67/62	578/25	50/23	NA	NA	743/85	117/85
2013-14	185/60	68/60	638/25	139/25	NA	NA	823/85	207/85

† A/P, Applicants/Positions Available

‡ O/A, Offers Made/Acceptances

### 12.7.5 Describe current plans for assessing the success of the selection process to meet the mission of the college.

The process for selection of pre-professional students is subject to regular review by the admissions committee. Based on quantifiable outcomes, such as low rates (<5%) of student attrition, consistent student performances on the NAVLE that exceed the national average for US veterinary schools (section 12.11.1.a) and the high percentage of graduates who are successful in seeking internships and resident positions, it could be concluded that the admissions process fulfills the overarching educational mission of the college to train qualified licensed veterinarians. However, while the number of students that do not meet these measures of success is relatively small, there is a continuing need for the college to consider potential lessons that can be learned from apparent missteps within the selection process. In this regard, the Associate Dean for Academic and Student Affairs continues to evaluate individually each case in which students voluntarily withdraw from the program, are dismissed for academic or other difficulties, or fail to meet expected outcomes measures such as passing licensure exams. The goal of all such evaluations is to consider possible indicators that can be used to identify additional factors that should be considered within the admissions selection process.

The data in Table A (section 12.7.4) supports an admission process that attracts a large and qualified applicant pool. The number of total offers made to matriculate a class of 85 students remained steady from 2010-2013. The increased Total O/A noted in 2014 is due to two factors:

- Interviews and offer letters were completed two months earlier than usual, with offers mailed the second week in February. Offers were sent to exceptional non-residents applicants who would naturally receive and accept offers to their in-state institution. Previously, these students did not participate in the UTCVM interview process that occurred in mid- to late-March; having already been interviewed and received in-state offer letters, they historically declined interview opportunities with our college. Our earlier interview and admissions timeline is expected to generate a higher O/A rate in these talented, non-resident applicants.
- The second factor was due to extending only a limited number of offers and a large number of alternate designation letters to the non-resident pool, to assure a class size limit of 85 students. Many of these candidates had accepted offers by the time follow-up CVM offers were made. This procedural error will be corrected in 2015.

Despite the higher rate of O/A observed during 2014, the non-resident applicant pool remains large and highly qualified. Admitted candidate academic profiles demonstrate improved academic proficiency despite the broader, holistic admissions process (Table 2).

<b>Table 2. Candidate Academic Profile (Admitted Students)</b>				
<b>Academic Parameter</b>	<b>Application Cycle</b>			
	<b>2010-11</b>	<b>2011-12</b>	<b>2012-23</b>	<b>2013-14</b>
Overall GPA	3.59	3.53	3.66	3.67
GRE Score	1130	1128 (308)	312	313

**12.7.6 Describe your policies and procedures for admitting transfer students who will receive a degree from your institution, and state the number of transfer students admitted per year for the last five years.**

Transfer students are not admitted to the University of Tennessee, College of Veterinary Medicine.

## 12.8 Faculty

### 12.8.1 Complete Tables A and B, and assess the strengths of the faculty and support staff in fulfilling the college mission.

See Appendix pages A22 and A23; Table A, Faculty Lost and Recruited

See Appendix page A24; Table B, Staff FTE for Teaching, Research, and College/Hospital Support

Our clinical faculty all have specialized training in their respective disciplines and are either board-certified or board-eligible. Most tenure-track faculty have MS or PhD degrees that enhance their areas of research. The Veterinary Medical Center (VMC) is dedicated to providing the highest quality veterinary student education and care for our patients. Primary cases are seen to enhance teaching of practical medicine to veterinary students, but the VMC is primarily a secondary and tertiary care center that provides specialized diagnoses and treatment. The success of this referral enterprise documents the high regard private veterinarians have for our faculty, as does the high demand for our faculty to provide continuing education and case consultations. All non-veterinary basic science faculty hold PhD degrees except one, who holds MS, MPH, and EdD degrees. Half of our non-veterinary faculty have essential DVM curriculum teaching responsibilities covering scientific areas where they have special training and/or experience. Most of these faculty have many years of experience teaching their respective courses.

The number and quality of our support staff is a strength of our college. Our headcount faculty (116) to staff (223) ratio is essentially 1:2. Many support staff are long-term employees with valuable knowledge that greatly enhances our mission. Our veterinary technicians are essential members of our clinical teaching, service, and research teams and contribute substantially to our program success.

### 12.8.2 State the current number of academic faculty (head count) who possess credentials as listed in Tables C and D – snapshot data as of June 30, 2014

The College employs 116 faculty members. Of these, 71 are full-time faculty in tenured or tenure-track positions with 63 holding a veterinary degree; 15 assistant professors, 22 associate professors, and 34 professors. Of the 45 remaining faculty, 36 are employed full-time and 9 are employed part-time in non-tenure track faculty positions; 5 instructors, 23 assistant professors, 11 associate professors, and 6 professors. Thirty-seven of the 45 faculty hold veterinary degrees. See Appendix page A25; Tables C and D, Non-Veterinarian and Veterinarian Academic Faculty

### 12.8.3 Assess the challenges for your college in maintaining faculty numbers and quality.

There are three major challenges in maintaining faculty numbers and quality. 1) Private sector opportunities (industry, private practice, commercial laboratories) for board-certified specialists usually provide better compensation packages than we can offer. 2) Board certification in most veterinary disciplines has enhanced the quality of clinical medicine and surgery offered in veterinary colleges, but has decreased numbers of veterinarians seeking research degrees. As a result, there are less scientists to fill tenure-track positions requiring research productivity. To compensate, we now have a higher percentage of non-tenure track faculty members. The decrease in faculty trained in research not only decreases our opportunities to conduct research for the benefit of animals, but it decreases the emphasis on the scientific method of investigation in our curriculum. 3) The most significant challenge we face is the essentially flat investment of state support for our college compared to our 2009-2010 financial budget. To meet employee salary, operating expense, and facility maintenance cost increases, the college has decreased faculty positions in our non-clinical programs to meet these rising expenses. The college has diligently worked to maintain excellent faculty capable of delivering an outstanding veterinary education program while avoiding unnecessary tuition or student enrollment increases as a means to meet rising expenses.

### 12.8.4 Provide information on the loss (what discipline/specialty) and recruitment of faculty (Table A).

A net loss of 6 faculty members has occurred from 2009-14, of which one was a college administrator. With the 2010 departure of our Associate Dean for Research and Graduate Studies, the college merged the associate dean

responsibilities with the Biomedical and Diagnostic Sciences (BDS) department head duties. This move was considered fiscally responsible and academically appropriate, as the majority of scientists and graduate students were located in BDS. The college created a Director of Graduate Studies position to support the associate dean and department head in administering the graduate program. This approach has served the college and students well.

A loss of 2 faculty positions has occurred in the Department of Large Animal Clinical Sciences. Both positions were housed in the equine ambulatory service, reducing this service from 4 to 2 faculty members. This reduction has not caused teaching or service mission concerns.

The Department of Small Animal Clinical Sciences has seen a net growth of 8 faculty positions. The department has seen faculty losses in research, nutrition, outpatient diagnostic imaging, radiology (2), and surgery (2). Gains in faculty have occurred in behavior medicine, cardiology, critical care (2), dentistry, dermatology, emergency medicine (2), general medicine, integrative medicine (2), oncology, radiation oncology, shelter medicine, and theriogenology. Recruitment efforts are active to replace recently vacated faculty positions in outpatient diagnostic imaging, radiology, and surgery, and to add an additional faculty position in ophthalmology.

Of significant concern has been the net loss of 11 faculty in the Department of Biomedical and Diagnostic Sciences from 47 to 36 faculty as of June 30, 2014. Reduction in faculty expertise has occurred in anatomy, basic science research (3), clinical pathology, histology (2), laboratory animal medicine, microbiology (2), pathology, public health, and physiology. Department faculty gains have occurred in epidemiology and shelter medicine. Recruitment efforts are active to replace faculty losses in clinical pathology, pathology, and public health.

**12.8.5 Provide a concise summary of promotion and tenure policies, and the policy to assure stability for non-tenured, long-term faculty.**

See Appendix pages A26 and A27; Promotion and Tenure Policy

**12.8.6 Provide an estimate of the weight assigned to promotion/tenure and/or compensation for teaching, research, service, or other scholarly activities.**

Faculty members are evaluated based on their time assignments in teaching, research, and service and the resources (e.g., research laboratory and technical staff support) they are provided. Clinical duties involving veterinary students and/or house officer instruction is considered and included within the teaching category, while clinical duties in the absence of students is considered service. Service also includes administration and non-teaching related committee participation. All faculty members are expected to participate in the generation of new knowledge and in the sharing of this new knowledge with members of their respective disciplines, as well as with veterinary students, graduate students, interns, and residents. The nature of this scholarly activity varies considerably depending on a person's job duties and time assignments. Tenure and non-tenure track faculty receive the same promotional (10%) and cost of living increases. In years when merit-based salary raises are provided, these increases are based on faculty performance in assigned duties. Compensation is also affected by market place, and counter offers may be made at times to retain faculty members.

**12.8.7 Briefly describe faculty professional development opportunities available in the college/university.**

Faculty members are encouraged to develop an area of expertise that allows them to develop national and international reputations. The department head, faculty mentor, and other colleagues provide guidance in this regard. In addition to helping faculty develop short- and long-term goals, guidance also includes sharing teaching methods/tools, providing peer review of teaching, assisting in grant writing, assisting in manuscript preparation, facilitating talks at national/international meetings, nominating for positions in appropriate professional organizations and journal editorial responsibilities, and nominating for awards. The college and university offer a wide range of seminars and workshops, including a master teachers program that also assists faculty in their development. All faculty members have work assignments that provide time for professional development. Faculty development funds are also made available to faculty. Faculty members are encouraged to use these funds to attend

a national meeting that will enhance their professional development. The college also has access to professional development gift funds (Wharton Professional Development Fund) to support faculty development; an annual call for proposals occurs. Although regrettably rarely used, faculty members are encouraged to take advantage of professional development leave opportunities to develop new skills that will enhance their scholarly abilities.

**12.8.8 Describe current plans or major changes in program direction that would be affected by faculty retirements, recruitment and retention.**

The college anticipates no reduction in program offerings. We have added expertise in behavior medicine, shelter medicine, emergency and critical care medicine, integrative medicine, small animal theriogenology, and anticipate adding opportunities in simulation to improve hands-on skill education. The college has also recently committed to creating a curriculum in student wellness which will span all four years of the professional curriculum.

**12.8.9 Describe measures taken to attract and retain a diverse faculty.**

The college embraces the importance of a vibrant multicultural, multi-ethnic community where diverse students, staff, and faculty add value to the profession of veterinary medicine. Our diversity director, the diversity committee, and college leadership team strive to ensure diversity, in all its manifestations, is considered in our recruitment endeavors. Creating a pipeline of talented faculty begins with attracting strong diversity into the professional degree program; we are optimistic that recent changes to our admissions process will make meaningful gains to capture a more diverse professional student population. The College has also long provided internship and resident post-graduate training through our 'grow your own' program. In the past 5 years, 18 professionals have participated in this program. We work closely with the UT Office for Equity and Diversity to ensure all faculty searches specifically include targeted efforts to attract faculty of diverse origin.

**12.8.10 Describe programs for on-campus delivery of curricular content by individuals not employed full time by the institution (other than occasional guest lecturers), including subjects taught. Estimate the percentage of core curricular content delivered in this way.**

The college has few core courses not taught by full-time UT CVM faculty. Only VMD 836 Toxicology (2 credits) and VMD 890 Transition and Accreditation Seminars (2 credits) are taught by non-college faculty. Toxicology is taught by Larry Kerr, DVM, MS, DABVT, who taught this discipline as a CVM faculty member; Dr. Kerr is a local veterinarian whom we have elected to keep engaged in our teaching program. Transition and Accreditation Seminars has been team taught by Jim Wilson, DVM, JD, Marty Greer, DVM, JD, Mark Opperman, CVPM, and Todd Duenckel, DVM; this course covers essential USDA accreditation requirements and provides education and skills related to veterinary business practice. These are the only core courses taught by non-UT CVM faculty, representing <3% of the core curricular content. The college has two elective courses, VMD 887 Small Animal Surgery, Spay/Neuter Clinic and VMD 887 Practice Management, which are taught by Michelle Smallwood, DVM and Jon Dittrich, MBA, respectively. Dr. Smallwood is a local veterinarian and adjunct SACS faculty member, while Mr. Dittrich is a local veterinary practice management consultant and President of Profit Profile Corporation. The College also partners with Virginia-Maryland Regional College of Veterinary Medicine to allow our rising junior students an opportunity to enroll in a summer semester Cow-Calf Production Medicine course. Noteworthy, the college has also recently permitted students to enroll in distance education courses taught through Iowa State University College of Veterinary Medicine to obtain elective credit in dentistry and swine medicine.

**12.8.11 Describe the role of interns, residents, and graduate students in teaching and evaluating veterinary students.**

Interns and residents play an essential role in educating and evaluating our senior-year clinical students, in assisting faculty teach in many hands-on laboratories including physical diagnosis, surgery, and anesthesiology, and in leading discussions in many student organizations focused on expanding basic science and clinical knowledge. Interns and residents are frontline educators and essential role-models for many students; they work hand-in-hand with our board certified faculty to educate our students in the art and science of healthcare delivery.

## 12.9 Curriculum

### 12.9.1 State the overall objectives of the curriculum and describe how those objectives are integrated into individual courses.

The curriculum provides a broad and comprehensive program designed to meet 10 key learning outcomes that have been integrated throughout the veterinary curriculum. These principles were established in 1996 and undergo recurring review during strategic planning and curricular retreats to assure ongoing endorsement. The most recent endorsement was June 2014. The 10 learning outcomes are focused to graduate veterinarians who:

1. are able to apply basic veterinary medical scientific knowledge and principles across disciplines to solve problems in animal disease prevention and management.
2. are able to critically analyze clinical data, therapeutic claims, scientific hypothesis and scientific journal articles to solve animal health problems.
3. recognize the need to gain additional knowledge through their professional careers and are able to find, identify, and utilize appropriate information resources effectively.
4. have adequate basic and applied knowledge about the most common medical conditions and also have developed entry level technical skills and abilities in their chosen area of the veterinary profession.
5. have developed sufficiently rigorous and relevant basic science and clinical knowledge and skills to allow all, who so choose, to pursue advanced clinical (internship or residency) or graduate education.
6. are able to communicate effectively with other professionals and the lay public both orally and in writing.
7. are sensitive to the social, ethical, and economic issues related to the welfare of animals and the practice of veterinary medicine.
8. have a good understanding how veterinary medical science contributes to the physical, mental, and social well-being of humans and the environment (Veterinary Public Health/One Health).
9. have compassion for people and animals, and have communication and teamwork skills to be able to work effectively with veterinarians, veterinary technicians, lay staff, animal scientists, and others concerned with animal health problems, treatment, and prevention.
10. are committed to personal integrity, high ethical standards, and understand the essentials of professional and scientific behavior which included accuracy, thoroughness, reliability, and critical thinking/analysis.

The curriculum is comprised of a 4-year course of study with the final 3 semesters dedicated to applied learning through clinical clerkships, externships, and advanced electives. Anatomy, physiology, disease pathophysiology, diagnosis, and treatment principles build step-wise throughout the program to become fully integrated during the clinical year. The curriculum content is organized on a systems basis and is expanded in cross-disciplinary content by using clinical case examples and through delivery of educational material in the Application Based Learning Exercises (ABLEs) program. Year 1 is devoted to basic principles of anatomy, physiology, cellular structure, and molecular science along with emerging skills in physical examination, clinical reasoning, and ethics. Year 2 focuses on normal physiological principles in health and disease and integrates materials from year 1 into pathology, anesthesia, and principles of surgery. Year 3 continues the systems approach while expanding on experiential learning and integration of the content into principles of clinical practice. Elective options begin the third semester and provide a variety of content and supplemental topics not taught in the core curriculum. Electives also incorporate applied and experiential learning, allowing students to develop areas of professional interest.

The ABLEs and Clinical Exposure (CE) courses offer students the ability to engage in self-directed learning, complete literature searches, interpret basic science and clinical data, actively participate in problem solving, practice communication skills, and apply basic science knowledge to the diagnosis and management of clinical cases. The CE encourages early skills development and includes the use of a problem-oriented medical approach, history acquisition, physical examination, communication skills, professionalism, and teamwork. ABLEs, advanced electives, epidemiology, and clinical rotations promote life-long learning and the ability to develop skills in literature review and evidence-based medicine by incorporating exercises in current literature acquisition into the curriculum. Communication, ethics, and public health are taught as stand alone courses and are similarly developed across the 4-year curriculum through workshops, peer-directed learning exercises, clinical rounds, and robust



participation in college club activities. Concepts of professionalism and ethics are introduced during first-year orientation and reinforced throughout the professional program.

### **12.9.2 Describe major curricular changes that have occurred since the last accreditation.**

Curriculum changes have occurred in response to ongoing curricular assessment, employer feedback, and student feedback. The most notable change has been a major revision of the clinical year structure, allowing students greater flexibility to develop a particular focus area or to continue in a generalized clinical curriculum. The following curricular changes have occurred in the past 7 years:

1. Required core clerkships were reduced to nine 3-week rotations (27 credits) that encompass Small Animal Medicine, Small Animal Soft Tissue Surgery, Community Practice and Dentistry, Equine Medicine, Farm Animal Medicine and Surgery, Equine and Farm Animal Field Services, Pathology, Diagnostic Imaging, and Anesthesiology.
2. A 24-hour small animal emergency and critical care clerkship has been expanded to provide extensive learning opportunities for practical experience in emergency medicine.
3. To enhance student surgical education, skills training, and competency, a 2-week spay-neuter clerkship was added to the shelter medicine program in 2013. Students have been meeting goals of 20-30 surgical procedures over the course of the 2-week elective.
4. An elective clerkship in behavioral medicine was added. Behavior topics are also discussed in rounds during the required community practice and dentistry clerkship to ensure all students have the opportunity to learn and address common behavior problems seen in private practice.
5. A small animal reproduction clerkship was added as a 2-week elective and also integrated into the community practice and dentistry rotation. The service provides education on common clinical challenges in small animal reproduction and has increased the caseload of C-sections to enhance student training.
6. Dental education has been expanded by inclusion of a 'dental day' on each Monday of the community practice 3-week rotation. Students also rotate through a local specialty dental practice 1 of the 3 Mondays to experience advanced dental procedures and to practice dental prophylaxis typical in private practice.
7. Swine education is now provided through a contract with Iowa State University Swine Medicine Education Center (SMEC). Three courses in swine medicine have been added to the junior- and senior-year curriculum. Two courses are provided on-line: a 1 semester credit advanced swine elective and a non-credit 8-hour swine medicine review course for senior-year students. A swine production medicine externship has been reserved as a 2 semester credit elective for up to 2 students to be held at the SMEC facility in Iowa.
8. An integrative medicine clerkship has been provided to senior-year students since 2009. Students learn basic principles of integrative medicine including herbal and nutritional therapies, acupuncture, cold laser therapy, and chiropractic manipulation in 2-week clerkships.
9. Communication training has been expanded to all 4 years of the professional curriculum. Expansion includes the Bayer communication modules and cultural competence in the freshman year, core communication skills education in the sophomore year, client communication in the junior year, and managing difficult conversations and conflict management in the senior year.
10. Business and career development programming now occurs in freshman orientation activities; careers in veterinary medicine panel presentations. The junior-year clinical orientation program includes training in infectious disease isolation and biosafety competency.

### **12.9.3 Describe the process used for curriculum assessment (including course/instructor evaluation) and the process used to assess curricular overlaps, redundancies, and omissions.**

The college conducts regular assessment of all courses, instructors, and externship experiences through student evaluations, peer review, and graduating student focus groups. Students complete anonymous on-line evaluations through the college's assessment software (One45) for each course, each clerkship rotation block, and each instructor who teaches more than 4 hours in a single didactic course during the semester. Student participation response rates have varied between 42-100%, but typically exceed 80% in most years. Instructor reports are provided to the individual instructor, department head, and associate dean for academic and student affairs. A

course evaluation summary is provided to the course coordinator, department head, curriculum committee, and associate dean for academic and student affairs. These data are used by the course coordinator to prepare course reports for assessment by the curriculum committee; these reports are provided annually to the curriculum committee. The course reports follow a prescribed format that includes (a) copy of the syllabus, (b) course objectives, (c) interpretation of data (student outcomes, evaluation summary, instructor input), (d) major issues, needs, goals, or new objectives, (e) plans or request for revisions, and (f) proposed lecture/laboratory outline and revised syllabus for the next offering. This report and any additional information that has been collected are distributed to the curriculum committee for comprehensive review. The entire committee reviews each report. Key consideration points include effectiveness of the course in meeting the stated learning objectives, assuring accurate content, appropriate lecture and laboratory hours for the assigned credit, and assessment of the overall teaching quality. The curriculum committee chair provides the course coordinator a summary of the committee's findings and recommendations for course improvement or assistance, should such be indicated. Course reports are also provided to the department heads and associate dean for academic and student affairs.

Instructors are further reviewed by a peer teaching committee. Peer teaching reviews are typically conducted every 2 years for faculty members at the rank of assistant professor, every 2-3 years for associate professors, and every 5 years for full professors. A committee of 3 peers assesses in-class lectures, laboratory exercises, course notes, instructional materials, written examinations, and previous course reports. A peer review report is prepared by the committee chair for the instructor. This report is reviewed by all departmental faculty above the rank of the reviewed instructor as well as the supervising department head.

Curricular overlaps, redundancies, and omissions are evaluated through curriculum committee oversight, course evaluations, student feedback, and regular curricular reviews. Course topic descriptions and learning objectives provided by course coordinators have helped create a curricular mapping database that is reviewed by a curriculum subcommittee. The content and learning objectives of each lecture or laboratory are entered into the College's assessment database (One45) and linked to the 10 key learning outcomes and 9 core competency domains.

#### **12.9.4 Describe the strengths and weaknesses of the curriculum as a whole.**

**Curriculum Strengths.** The strength of our curriculum lies in the exposure of all students to a comprehensive core of biomedical coursework that provides a solid foundation of both basic science and clinical education, with the ability to develop a focus area during the senior-year clinical clerkships. The breadth of topics available through electives, externships, and clinical clerkships has been rated highly by students and faculty. The flexibility in developing targeted instruction for specific career paths, while retaining diverse offerings of clinical instruction, was recognized as an advantage to the structural change in the clinical curriculum. The pre-clinical curriculum strengths include opportunities to develop advanced critical thinking skills through the ABLEs problem-based learning programs, early clinical experiences, and the summer Center of Excellence Scholars program in developing and mentoring student research. Advancing the concept of One Health into the curriculum and the availability of a combined DVM/MPH degree program provides alternative career opportunities for our students. The CVM Veterinary Social Work program is a recognized leader in communication training and supporting student wellness. Employer surveys consistently rank our students' communication skills as excellent.

**Curriculum Weaknesses.** The clinical curriculum could still use more flexibility; students have limited ability to access unique learning opportunities that extend beyond 3 weeks in the senior-year clinical curriculum. Mechanisms for adding course content, but not removing content has led to 'bloat' in the preclinical curriculum. Students and faculty agree that students are well-prepared for entry into small and mixed animal practice, yet the curricular focus on small animal topics and the need to assign 'selective clerkships' limits educational opportunities in large animal practice. Large animal elective options need to be expanded. Student education would benefit from additional clerkships focused on equine and small animal dentistry, equine podiatry, swine production, poultry production, and business/practice management. Strengthening the program in clinical toxicology, surgical anatomy, and One Health programs is desirable. Expansion of non-technical skills to include broader finance and business management skills, wellness management, conflict management, and leadership skills should be considered.

Overall, student feedback identifies a need for more applied and experiential learning opportunities throughout the preclinical curriculum and greater technical support in the hospital to allow for an improved learning environment.

### **12.9.5 Describe preceptor and externship programs (including the evaluation process).**

All senior-year students complete a minimum of 4 weeks of externship experience. Additional externship experience is available should a student desire to use available vacation blocks. Primary oversight of all externships is accomplished by the associate dean for academic and student affairs with secondary oversight by the curriculum committee. Students are required to provide a written summary of how a specific externship will help meet their academic goals and satisfy specific learning objectives. The externship supervisor must provide written goals and objectives of the externship experience along with defining duties and expectations of the extern. This information is available in an electronic database for students to access when considering externship opportunities.

Students are evaluated by the primary externship supervisor and graded, based on a set of learning criteria provided by the College. Student evaluation of the externship, compliance with program descriptions, and review of written feedback are reviewed by the associate dean for academic and student affairs. Programs that deviate substantially from the written description or learning objectives are removed from the approval list.

### **12.9.6 Curriculum Digest - In an addendum (printed or electronic) provide information on courses and rotations in the curriculum according to the following guidelines.**

- 12.9.6.a Organize listing by year of the curriculum.**
- 12.9.6.b Include both courses and clinical rotations in each year's listing.**
- 12.9.6.c In each year, list required courses/rotations first, followed by a listing of elective courses/rotations. Clearly mark the division between the two.**
- 12.9.6.d For each item listed, please include:**
  - 12.9.6.d.i Course # and title,**
  - 12.9.6.d.ii Credit hours (divided by lecture/lab if appropriate),**
  - 12.9.6.d.iii Position in curriculum (quarter/semester as appropriate),**
  - 12.9.6.d.iv Predominant mode of instruction (didactic, problem-based, clinical rotation, or other with explanation, and**
  - 12.9.6.d.v Brief catalog-style course description.**

See Appendix pages A28-36; Curriculum Digest

See <http://catalog.utk.edu/content.php?catoid=17&navoid=1775> for catalog course descriptions.

### **12.9.7 Describe current plans for curricular revisions.**

A curricular task force was established January 2014 to develop background materials and working groups in preparation for a comprehensive curricular review. Working subgroups reviewed and considered 7 components of the curriculum for possible revision: prerequisites, ABLEs, non-technical skills, preclinical curriculum, block curriculum, clinical clerkship rotations, and extending the clinical year. Each group consisted of faculty as well as student representatives. Faculty and student surveys were conducted to gain information on the strengths and weaknesses of the current curriculum and to identify areas for improvement. A curricular retreat was held June 2014 to review the findings, to consider recommendations, and to develop a plan for curricular revision. Curricula from other professions, including nursing and medicine, and peer veterinary institutions were also summarized.

The faculty voted to make two curricula changes beginning with the 2015-16 academic-year; expand student education in non-technical skills and create alternative education pathways to satisfy small animal soft tissue surgery skills. The course outline in non-technical skills includes 4-years of integrated coursework covering communication, professionalism, wellness, and business finance. The second major change was to allow students in the small animal soft tissue surgery clerkship (VMD 883) to opt out, as long as they enroll in other clinical clerkships which satisfy the learning objectives established for small animal soft tissue surgery. Students enrolled in

community practice and dentistry or the spay-neuter surgical elective could choose to replace 3 weeks of small animal soft tissue surgery with other elective experiences. This will reduce required core clerkship rotations from 27 to 24 credits as the small animal surgical core will effectively become optional. These curricula changes have been submitted to the UT graduate council for implementation beginning with the 2015 summer semester.

During the curriculum review, the faculty discussed and debated, at length, current curriculum strengths and weaknesses. One of the major discussion points was the clinical year curriculum and the possibility of extending the current clinical curriculum from 12- to 16-months. This change would allow for more electives, externships, and alternative educational opportunities. Because this change requires a reduction in the preclinical content, 2 parallel strategies within the preclinical years are currently under review. The preclinical content could (a) be converted to a block curriculum that integrates course content into logical learning modules, or (b) condense the current 6 preclinical semesters into 5 semesters by streamlining content and promoting more self-directed learning. The working groups are now developing a model curriculum in each area to provide the faculty for consideration. Any approved change would not take effect until the 2016 fall semester with the matriculation of the Class of 2020.

**12.9.8 Provide a description of the testing/grading system (scoring range, pass levels, pass/fail) and the procedures for upholding academic standards.**

See Appendix pages A37 and A38; Testing/Grading System and Procedures for Upholding Academic Standards

**12.9.9 Describe the opportunities for students to learn how different cultural and other influences (e.g., ethnic origin, socioeconomic background, religious beliefs, educational level, disabilities and other factors) can impact the provision of veterinary medical services.**

Students are taught cultural competencies throughout the curriculum. The initial discussion occurs during the freshman orientation and leadership camp when students learn about differences among themselves and how to build an effective team despite such differences. A mini-workshop is also provided during orientation by the Office of Disability Services to discuss learning disabilities. Cultural competency is included in the didactic content of the Communications and Clinical Correlation series (VMD 814 & VMD 816). Role playing scenarios within these courses help students understand the challenges of age, language, and ethnic barriers. An elective, VMD 897 Cultural Influences on Animal Health Care, is offered to sophomore and junior students. Within the senior-year curriculum, opportunities to identify how diversity issues impact communication, patient care, and client relations are identified during communication rounds held in community practice and dentistry.

One of the more direct learning opportunities in appreciating cultural and other influences on veterinary medical services comes from our international program. Throughout the year, senior-year students have opportunities to work with international students completing 2-16 week senior externships. The College has formal agreements with Kitasato University, Japan; Giessen University, Germany; and informal programs with universities in Argentina, Brazil, Chile, and Portugal. Our students engage with our international visitors in providing housing and transportation, and work side-by-side with these students in the veterinary medical center as a team. Our students serve as unofficial mentors to these international students and our hallways and clerkship rounds are often busy with students comparing notes about programs, educational systems, and diseases common to the different areas. UTCVM students have the ability to travel abroad through international externships, an agreement with the Texas A&M University International Travel Program, and summer semester Center of Excellence projects.

**Should the educational program of a college be disrupted for more than two weeks (for example, closure of a hospital due to an infectious disease, loss of core course or rotation, etc.), the college must report in writing to the COE the cause of the disruption and remedies to minimize or to provide an alternative educational opportunity for students in response to the disruption.**

No disruption has occurred since the last Council on Education review. Current building renovation and construction activities that disrupt didactic or laboratory coursework are managed through alternative scheduling of classrooms and laboratories located throughout the college and university campus.

## 12.10 Research Programs

### 12.10.1 Describe up to five programs of research emphasis and excellence that integrate with and strengthen the professional program.

**Center of Excellence in Livestock Diseases and Human Health.** This College Center recently celebrated its 30<sup>th</sup> anniversary, being one of 14 centers originally established by the Tennessee Higher Education Commission in 1984. Since its inception, the Center has developed successful research programs in disease pathogenesis, treatment, and prevention, predominantly focusing on molecular and cellular approaches to research in infectious diseases, host defense, molecular genetics, and carcinogenesis.

The Center is funded annually by a state allocation, along with a 50% match from the College. Total Center revenue funding for FY14 was \$766,106. The main function of the Center is in allocation of appropriated funds to develop, enhance, and maintain faculty research programs. Funds are awarded based on a recommendation from the College's Research Advisory Committee to the Associate Dean for Research and Graduate Studies, after considering research proposals, the need for bridging support, and new equipment requests. Approximately 15 faculty members have received funding each year, and 21 grants have been selected for award this current fiscal year. Since the Center was established, its faculty have published some 2,400 peer-reviewed articles, authored more than 300 books or book chapters, and presented over 3,400 talks or posters world-wide.

The Center helps sponsor the College's summer research program (section 12.10.3.b), providing stipends for more than 20 veterinary students and travel funding for individuals to present their research findings at national meetings. More information on the Center, including annual reports, is available at <http://www.vet.utk.edu/coe/index.php>.

**Center for Wildlife Health.** The Center for Wildlife Health (CWH; <http://wildlifehealth.tennessee.edu/index.htm>) was established in 2003. It provides a multidisciplinary environment for the study of health issues arising from the interaction of wildlife, livestock, humans, and the environment and is therefore very much in keeping with the One Health concept. The CWH recognizes that global health issues require not only fundamental research into wildlife disease ecology and diagnosis, but also application of research findings in ways that provide practical assistance for resource managers and policy-makers. Within the CWH, these problems are addressed using a team approach that involves wildlife biologists, entomologists, veterinarians, animal production managers, public health specialists, epidemiologists, and numerous other disciplines. The CWH is currently comprised of 15 research faculty. The backbone of the unit is a seed-grant program geared toward generating new data that will supplement research proposals for extramural funds, some of which goes directly to support DVM students working with Center faculty. The CWH fosters interdisciplinary collaboration by inviting eminent scientists to UT for seminars and networking with faculty, staff, and students. From the CVM, Drs. Souza, Kennedy, Miller, Gerhold, and Wilkes have been actively involved with the CWH as affiliated faculty, directors, and recipients of seed grants; each of these faculty actively mentor DVM students in their research programs.

**Comparative and Experimental Medicine (CEM) Graduate Program.** The College offers two graduate degree programs for DVM students: a Masters of Public Health, with a veterinary concentration, and the traditional research degree program (MS and/or PhD) which is multidisciplinary and includes CVM faculty as well as faculty from the UT Graduate School of Medicine and from several departments on the UT Knoxville campus (Nutrition, Microbiology, Public Health). Over the past 8 years, 10 of our DVM graduates have enrolled in the CEM graduate program (5 PhDs awarded, 4 pending, 1 MS awarded) and one of our CEM PhD graduates during that timeframe is now a DVM student.

**Individual Laboratories of Research Excellence.** In recent years, the College's faculty has included 10 individuals with a greater than 50% commitment to research, and another 4 research assistant professors completely supported by mentoring investigators' extramural grants. The College is exceptionally proud of its 3 senior research faculty, who have enjoyed nearly continuous NIH funding throughout their 30 plus years at the University. These individuals have mentored DVM students and DVM graduates in research and graduate studies, and have set high standards for excellence in biomedical research and discovery within the College and University. Two of these

faculty have taught part or all of a relevant course in the professional curriculum throughout their careers. Between these three faculty, they have published over 680 peer-reviewed scientific articles in journals including *Cancer Research*, *PNAS*, the *Journal of Immunology*, and *Nature*.

- Dr. Barry Rouse is internationally renowned in herpesvirus keratitis research and the immunopathology that blinds affected individuals. He has contributed substantially to knowledge regarding regulatory T cells in disease and is often invited to speak at national and international conferences, and at institutions such as Harvard and Emory. Dr. Rouse has trained over 50 graduate students and postdoctoral fellows at UT.
- Dr. David Brian has spent his research career in virology, studying the replication of coronaviruses. Among a long list of discoveries, Dr. Brian was the first to show that coronavirus subgenomic mRNAs each make a negative-strand complement and therefore have the very unusual property of post-transcriptional messenger RNA amplification; this caused a major shift in the thinking of how coronaviruses replicate, and is the basis for the most-widely favored current model of coronavirus mRNA synthesis. Dr. Brian’s past graduate students and fellows are scattered around the globe in faculty positions and research institutions.
- Dr. Hildegard Schuller came to UT from the National Cancer Institute in 1985 to continue her work in mechanisms of pulmonary carcinogenesis related to smoking. She was the first to link nicotinic acetylcholine receptor signaling with carcinogenesis and continues in this line of investigation with NIH funding and new applications to the Department of Defense. Through her work, Dr. Schuller is defining a direct link between stress responses and cancer.

**12.10.2 Provide evidence for the breadth and quality of the college research program including:**

**12.10.2.a The number of individual faculty members within each department involved in research, total research FTE, and research productivity (tabulated below for each of the last three years). For example: Dept A has 35 faculty members with 30 involved in research and 6 FTE assigned to research.**

- **Faculty and Scholarly Productivity**

Calendar Year: 2011

College Unit	Total Faculty	Number of Faculty Involved in Research	Number of Research Faculty who Teach in the Professional Curriculum	Total Research FTE†	Number of Original, Peer-Reviewed Research Publications	Number of Original, Book Chapters
BDS	48	38	27	16.5	123	12
LACS	19	15	13	3.4	11	8
SACS	44	30	28	7.4	44	67
Total	111	83	68	27.3	178	87
† Percentage of departmental total salary recovered from salary savings.						

Calendar Year: 2012

College Unit	Number of Faculty	Number of Faculty Involved in Research	Number of Research Faculty who Teach in the Professional Curriculum	Total Research FTE†	Number of Original, Peer-Reviewed Research Publications	Number of Original, Book Chapters
BDS	44	32	23	14.0	139	6
LACS	19	14	12	3.1	15	2
SACS	43	27	26	6.7	74	29
Total	106	73	61	23.8	228	37
† Percentage of departmental total salary recovered from salary savings.						

Calendar Year: 2013

College Unit	Number of Faculty	Number of Faculty Involved in Research	Number of Research Faculty who Teach in the Professional Curriculum	Total Research FTE†	Number of Original, Peer-Reviewed Research Publications	Number of Original, Book Chapters
BDS	40	30	21	14.0	145	12
LACS	21	15	13	3.3	25	36
SACS	45	25	24	6.4	143	63
Total	106	70	58	23.7	313	111

† Percentage of departmental total salary recovered from salary savings.

- Extramurally-Sponsored Grants & Contracts and Patents Awarded**

Calendar Year: 2012							
College Unit	Extramurally-Sponsored						Number Patents
	Federal Grants		State Grants		Private Contracts		
	Number	Value	Number	Value	Number	Value	
BDS	8	\$2,128,953	0	\$2,128,953	8	\$2,128,953	0
LACS	0	\$0	0	\$0	9	\$0	0
SACS	1	\$79,701	0	\$79,701	9	\$79,701	0
Total	9	\$2,208,654	0	\$2,208,654	19	\$2,208,654	0

Calendar Year: 2013							
College Unit	Extramurally-Sponsored						Number Patents
	Federal Grants		State Grants		Private Contracts		
	Number	Value	Number	Value	Number	Value	
BDS	6	\$1,461,638	1	\$10,000	10	\$196,069	0
LACS	0	\$0	0	\$0	2	\$27,590	0
SACS	0	\$0	0	\$0	11	\$654,876	0
Total	6	\$1,461,638	1	\$10,000	23	\$878,535	0

Calendar Year: 2014							
College Unit	Extramurally-Sponsored						Number Patents
	Federal Grants		State Grants		Private Contracts		
	Number	Value	Number	Value	Number	Value	
BDS	8	\$1,783,585	4	\$305,245	3	\$289,938	0
LACS	0	\$0	2	\$50,000	4	\$272,864	0
SACS	1	\$140,815	0	0	13	\$602,644	0
Total	9	\$1,924,400	6	\$355,245	20	\$1,165,446	0

Note: Numbers do not include an additional **\$5,735,929** from the FDA (*Supporting the Development and Delivery of the National Food Safety Curriculum*, \$5,024,673) and US Dept of Homeland Security (*Agriculture and Food Vulnerability Assessment Training Course*, \$300,000; and *Isolation and Quarantine Response Strategies in the Event of a Biological Disease Outbreak in Tribal Nations*, \$411,256) for development and provision of national courses and emergency responses by the Center for Agriculture and Food Security and Preparedness, based in BDS. These grants are not included in the above tables as they do not fit nicely into basic, translational, or applied research program activities, but rather represent scholarship related to teaching and educational activities. However, we view these as extremely important contributions toward protecting our nation's food supply and society.

- **Veterinary Students Engaged in Research and Graduate Degree Programs**

Academic Year	Number of Students in Funded & Unfunded Research Projects	Number of Peer-Reviewed Publications in which Students are Authors or Coauthors	Number of Veterinary Medical Students in Joint DVM-Graduate Degree Programs	
			PhD (Equivalent)	MS (Equivalent) †
2009-10	24	8	1	11
2010-11	25	9	0	11
2011-12	30	4	2	14
2012-13	29	10	2	11
2013-14	31	3	2	9

† Master's of Public Health, Veterinary Concentration

**12.10.2.b A description (one page or less) of other measures of faculty research activity (eg., faculty participation and presentation of original research in scientific meetings, involvement of faculty in panels, advisory boards or commissions, and national and international research awards received).**

College faculty members serve on more than 25 editorial boards, including those of the *Journal of Biological Chemistry* and the *Journal of Virology*. Faculty have assumed the responsibilities of chairing such boards, and serving as editor (*Journal of Clinical Microbiology*; *Clinical and Developmental Immunology*) or assistant editor (*Journal of Wildlife Diseases*) for scientific periodicals. Many faculty attend and present at a spectrum of scientific meetings and institutions every year. Over the last 3 years, BDS department members alone have presented over 90 abstracts, more than 30 invited talks, 35 invited presentations at national and international meetings, and have chaired sessions, organized meetings, and made keynote or platform addresses around the world. In addition to *ad hoc* service on national and international funding committees, faculty have been invited to serve as permanent members on NIH Study Sections in the areas of Infectious Disease, Reproductive Health, Asthma and Pulmonary Conditions, The Clinical Research and Field Studies of Infectious Diseases, Carcinogenesis, and Immunology.

In recent years, College faculty have submitted 10 provisional patent applications through the UT Research Foundation, some still pending examination, and have been issued two utility patents:

- Methods of Rejuvenating Leydig Cells and Enhancing Testosterone Production in a Male Subject; Chamindrani Mendis-Handagama: U.S. Patent No. 7595056, Issued September 29, 2009.
- Small Interfering RNAs Targeting Feline Herpes Virus; Stephen Kania, Rebecca Wilkes: U.S. Patent No. 7977321, Issued July 7, 2011.

**12.10.3 Describe the impact of the overall research program on the professional program and on professional students, including:**

**12.10.3.a Describe courses or portions of the curriculum where research-related topics are covered (literature review/interpretation, research ethics, research methods or techniques, and study design).**

**VMD 833 - Epidemiology and Evidence Based Medicine.** Use of knowledge (evidence) gained from management of clinical patients to improve clinical decision-making processes. This course is taught during the spring semester of the first year and includes the following learning objectives: (1) explain the basic concepts of evidence-based medicine; (2) define and measure incidence and prevalence, and explain the use of prevalence and incidence information on clinical practice; (3) interpret diagnostic tests; (4) define and measure relative and attributable risk, and explain the use of risk information on clinical practice; (5) explain the type of bias that can appear in clinical trials and methods used to control for bias; (6) explain the different types of epidemiological study design; and, (7) critically assess clinical published information.



**VMD 801 to 806 - Application Based Learning Exercise (ABLE).** Week-long sessions based on specific clinical case or problem, and integration of basic science and clinical material. The CVM curriculum includes 6 individual weeks of ABLEs during semesters 1-5. The goals of these sessions include increasing student responsibility for learning, integrating basic and clinical information, developing increased problem solving and student communication skills, and providing the opportunity for students to find information on their own from a variety of sources. It is generally accepted that these skills are essential for success in both clinical practice and research.

**VMD 814 and 816 - Clinical Correlations and Ethics I & II.** A discussion-based class applying ethical decision making skills on a host of ethical dilemmas often faced in veterinary medical practice. Topics include ethical challenges in laboratory animal medicine. Instructors utilize the current literature and practice wisdom to provide information and examples about veterinary ethical dilemmas. Students gain knowledge about areas within medicine that need more research attention efforts (for instance animal welfare knowledge), as well as guidance on solving ethical dilemmas both on an individual level and at the level of professional standards of care and practice.

**Summer Research Program.** Students get exposure to research fundamentals as participants in our Summer Research Program, during our annual Comparative & Experimental Medicine and Public Health Research Symposium, during our College's Research Seminar Series (section 12.10.3.b), and in *ad hoc* seminars available throughout the year, presented at the CVM and other departments on the UTIA and UTK campuses.

**12.10.3.b Describe/list the current or proposed opportunities for participation in research, including summer research programs (Merial, NIH, Howard Hughes, etc.), academic year programs (NIH fellowships, industry funded, curricular time allowed for research), student employment in research labs and projects, and individually mentored research experiences.**

Veterinary students have opportunities to participate in summer research projects following both their first- and second-years. On average, approximately one-third of each veterinary class obtains research experience through this program. Mentors are drawn from faculty with funded research projects; our clinical faculty typically partner with bench-top researchers on projects that employ approaches exploring clinically relevant, hypothesis-driven questions. The CVM Center of Excellence in Livestock Diseases and Human Health has historically funded up to 25 students to work full-time for 10 weeks with their faculty mentors. The program attracts regular student support from the Merial Veterinary Scholars Program and Morris Animal Foundation's Veterinary Student Scholars Program. The students' experiences have also been significantly enriched with participation in the Merial-NIH Research Symposium, providing them a national venue to present their work, enhance networking opportunities, and a chance to visit another veterinary institution. The quality of the CVM Summer Program prompted an NIH program officer to encourage submission of a revised T35 short-term training grant. The revised application was submitted September 2014 and would further promote college research and student educational opportunities.

The specific objectives of the program are for students to receive hands-on experience in biomedical research, develop an understanding of research careers and opportunities, develop a basic understanding of the scientific method and study design, develop skills in one or more research techniques, obtain experience creating and delivering a research presentation, learn about ethical issues involved in research, and develop camaraderie with other student researchers. Prior to beginning their projects, students attend a presentation conducted by our occupational health nurse covering occupational health and safety. This serves to both enroll the students in the program and alert them to various health and safety issues. Students also receive biological safety level 2 training in a class conducted by the UT Biological Safety Officer.

The summer research experience for all students culminates with an oral presentation of their work to peers, mentors, faculty, and staff in a formal setting. Since 2008, 163 students have participated in the Summer Research program and 42 of these have authored or co-authored peer-reviewed publications documenting their work.

**12.10.3.c Describe efforts by the college that facilitate the link between veterinary medical student research and subsequent or concurrent education, and that enhance the impact of college research on the veterinary professional program.**

The College recently appointed a new director for our CEM graduate program, and this individual has set in motion steps to integrate and renovate our joint DVM/PhD degree program. This individual, along with a co-director, has also significantly enhanced the Veterinary Student Summer Research Program, which now matches up to a third of our students with faculty research projects and programs, allowing students the opportunity to directly experience a wide spectrum of basic science, translational, and applied research activities and the impact these research endeavors have in veterinary medicine.

**12.10.3.d Describe college research seminars and presentations for DVM students, including the number of internal and external speakers, endowed research lectureships, DVM student research seminars, DVM student poster presentations, and college research days and awards and presentations made by veterinary medical students at scientific meetings or seminars at external sites.**

**Comparative & Experimental Medicine and Public Health Research Symposium.** This annual, multidisciplinary symposium was initiated in 2007 and has grown in scope every year since its inception. It brings together individuals from 22 different departments for a 2-day event that provides students, postdoctoral fellows, residents, and junior faculty an opportunity to learn about ongoing research in other departments and to present their work in an oral, conference-like venue that also includes special seminars on veterinary research and interdisciplinary approaches to public health. In 2011 one of the Symposium's featured speakers was Dr. Grieder, Director of the National Center for Research Resources at the National Institutes of Health; she discussed translational research, the role of veterinarians in science and global health, and resources available through NIH. In 2012 Sten Vermund, MD, PhD, Amos Christie Chair in Global Health, Professor of Pediatrics, and Director of the Vanderbilt Institute for Global Health, spoke about "AIDS/TB/STIs in Africa: How Did We Get Here and Where are We Going?" Additional information is available at: <http://www.vet.utk.edu/research/symposium/>.

**Comparative and Experimental Medicine Seminar Series.** Seminars are presented weekly during the academic year by internal and external speakers sponsored by the College to speak and meet with students. Since 2010, the College has had 45 internal and 48 external speakers participate in this series.

**Other Seminars/Presentations.** In addition to the formal seminar series, external speakers are invited by college faculty, student groups, and departments to present on various topics involving research activities from wildlife disease to animal behavior. This is in addition to a wealth of other relevant speakers visiting the Knoxville Campus and other units within UTIA. The College hosted Dr. David Haworth, President and CEO of Morris Animal Foundation, in 2011 and 2013 to address and meet with our DVM students about the Foundation and veterinary research. Also in 2013, Dr. Temple Grandin, professor at Colorado State University and consultant to the livestock industry on animal behavior, visited to discuss her studies on the behavior of cattle and design of adapted corrals, intended to reduce stress, panic, and injury in animals being led to slaughter.

**Veterinary Student Presentations and Awards.** All veterinary students participating in the College Summer Research Program present their project in a formal, 15-minute talk to a general CVM audience. In addition, 2-6 students have presented posters at the Meriel-NIH Research Symposium each year since the College started participating in the Meriel Veterinary Student Scholars Program. Several students are also annually funded by the College or their faculty mentor to present abstracts at relevant national conferences, typically in a poster format but occasionally in oral presentation formats. Finally, students are also encouraged to present their research at our annual Comparative & Experimental Medicine and Public Health Research Symposium.

DVM Students are recognized for research potential with the **Morris D. Schneider Memorial Award**. A certificate and \$1,000 are presented at the Annual Honors Convocation of the College of Veterinary Medicine to the senior student in the upper-third of his/her class, nominated by peers and faculty as having demonstrated the most promise to succeed as a researcher.

## 12.11 Outcomes Assessments

The College's assessment activities are overseen by a faculty committee, with representation from each department and *ex officio* members including the associate dean for academic and student affairs, curriculum committee chair, and educational enhancement committee chair. Results of the committee's activities are presented to the faculty annually. In addition, reports are provided to faculty and staff throughout the year, including competency results, findings and recommendations from the senior exit survey and senior focus group discussions, and from employer and alumni surveys. The assessment committee chair is an *ex officio* member of the college curriculum committee.

### 12.11.1.a NAVLE school score report data and passage rates over the past five years (Table A),

Year	Students Taking Exam	Students Passing Exam	Students Average Scores	Criterion Average Scores
2009-10	64	64 (100.0%)	549 ± 54	538 ± 65
2010-11	65	65 (100.0%)	531 ± 50	534 ± 64
2011-12	95	95 (100.0%)	533 ± 59	522 ± 64
2012-13	77	77 (100.0%)	528 ± 60	519 ± 63
2013-14	79	75 (94.9%)	517 ± 59	512 ± 69

### 12.11.1.b Student attrition rates with reasons (Table B),

Over the past 5 years, the college has seen 36 (8%) of its 438 matriculated students either decelerated (23; 5%), dismissed (8; 2%), or withdrawn (5; 1%) from the professional degree curriculum. The freshman year curriculum is affected most frequently with 18 (50%) of the 36 students impacted during this particular academic year. Of the 36 students, 24 (67%) were affected due to academic performance and 12 (33%) due to personal reasons. See Appendix page A39; Student Attrition Rates.

### 12.11.1.c The learning objectives for each of the nine listed competencies, and a summary of the analysis of evidence-based data collected for each of the nine listed competencies used to ensure that graduates are prepared for entry level practice.

Professional learning objectives and skills were identified through faculty focus group sessions in 2008. These objectives and skills became the foundation of competency items assessed during clinical clerkship rotations.

1. Comprehensive patient diagnosis (problem solving skills), appropriate use of clinical laboratory testing, and record management; *objectives and skills listed here also apply to competency domains 1,3,4,6, and 7.*
  - Develop an accurate problem list and differential diagnoses based on signalment, history, and physical examination.
  - Outline a diagnostic plan including a rationale and prioritization based on client expectations and financial constraints.
  - Accurately interpret results of diagnostic tests and describe relevant linkages to other case information.
  - Using all findings from the history, physical examination, laboratory and imaging results, revise the patient's problem list, differential diagnoses, and diagnostic plan.
  - Distinguish between those procedures or interpretations that should be performed by a veterinary practitioner or technical staff under a veterinarian's supervision and those requiring more specialized input.
  - Perform or supervise appropriate sample collection, handling, and submission for testing.
  - Explain the limitations of diagnostic testing and the relevance of these limitations.
  - In the medical record, document the presenting problems, assessment of each problem, the treatment plan, and case summary in an accurate, timely, and concise manner.
  - Describe the value of maintaining orderly, concise, accurate medical records and write clear, concise discharge orders.
2. Comprehensive treatment planning, including patient referral when indicated; *objectives and skills listed here also apply to competency domains 3, 4, and 6.*
  - Identify primary disease conditions and treatment options for presented cases.
  - Develop plans for monitoring patient care, including preventive measures for potential complications or new diseases.

- Identify complications during treatment and accurately communicate information to a senior attending clinician.
  - Perform core case management requirements, such as writing prescriptions, administering fluids, and providing other supportive treatments.
  - Correctly demonstrate basic technical skills in patient evaluation and management.
  - Identify problems that require immediate treatment while awaiting diagnostics.
  - Given a definitive diagnosis, develop an integrated treatment plan that addresses all problems.
  - Demonstrate good time management skills.
3. Basic surgery skills, experience, case management; *objectives and skills listed in competency domains 1, 2, and 4-9 also apply here.*
- Demonstrate basic surgery skills and appropriate perioperative management of patients.
  - Demonstrate appropriate sterile surgical techniques.
  - Properly identify basic surgical instruments and demonstrate their proper usage.
  - List the commonly used suture materials and demonstrate the proper usage of each.
  - Explain underlying physiologic and pathophysiologic implications for common soft tissue and orthopedic conditions.
  - Summarize the diagnosis, treatment, prognosis, and complications associated with common surgical conditions.
4. Basic medicine skills, experience, case management; *objectives and skills listed in competency domains 1, 2, and 4-9 also apply here.*
- Explain the basic pathophysiology of disease processes commonly seen in practice.
  - Explain the pharmacology of drugs that are being given to a patient.
  - Demonstrate basic skills for obtaining common diagnostic specimens or samples.
  - Demonstrate how to administer a medication enterally and parenterally.
5. Anesthesia and pain management, patient welfare; *objectives and skills listed in competency domains 1, 2, and 4-9 also apply here.*
- Perform a full pre-anesthetic evaluation of a patient including history, physical examination, and laboratory tests and give the guidelines for food and water restriction.
  - Design protocols and perform tranquilizations/sedations for minor diagnostic or surgical procedures.
  - Design and implement anesthetic plans for animals undergoing surgical or diagnostic procedures.
  - Assess pain level and plan appropriate pain management strategies for acute and chronic pain.
  - Design and implement the use of preemptive and postoperative analgesics and provide rationales for their uses.
  - Identify factors contributing to the comfort and well-being of hospitalized patients undergoing treatment, and surgery.
  - List signs of animal abuse.
  - List the ethical issues involved in a plan to deal with a suspected animal abuse case.
  - Discuss acceptable methods for euthanasia of animals.
  - Critically analyze the pharmacology and physiologic effects of commonly used pharmaceutical euthanasia agents and their use in animals.
  - Evaluate the psychological, social, and communication issues surrounding the euthanasia of a client's animal(s).
6. Emergency and intensive care case management; *objectives and skills listed in competency domains 1-5 and 7-9 also apply here.*
- Demonstrate compassionate behavior for patients, owners, and co-workers and maintain a professional and practical approach while working on emergency cases.
  - Demonstrate basic technical skills essential for diagnosis and treatment of emergency and critically ill patients.
  - Explain the pathophysiology and treatment options for common emergencies.
  - Demonstrate the ability to promptly recognize, triage, and treat life-threatening conditions.
7. Health promotion, disease prevention/biosecurity, zoonoses, and food safety; *objectives and skills listed in competency domains 1, 2, 4, 8, and 9 also apply here.*
- Explain how to recognize, identify through testing, and control common zoonotic diseases.
  - Explain and demonstrate the benefits of pertinent regulations and recommendations for animal health and well-being, including policies of OIE, and federal, state, and local governments.

- Design strategies to prevent disease from occurring, spreading, or persisting in a population, including development of wellness programs for maintenance of individual and population health.
  - Recognize and design strategies to address infectious or toxic biohazards and identify susceptible populations.
  - Outline how to implement and apply the HACCP approach to protect people against food-borne pathogens with an emphasis on (a) commercial food production operations, (b) economic importance from pre-harvest animal management to retail markets, and (c) field observations.
8. Client communication and ethical conduct; *objectives and skills listed in this domain also apply to competency domains 2-7.*
- Accurately organize and clearly communicate oral and written medical information that helps ensure client understanding and promotes compliance.
  - Accurately organize and clearly communicate oral and written medical information to colleagues and specialists when referring a case or obtaining a consultation.
  - Demonstrate attributes that promote and maintain good working relationships with a variety of clients and colleagues.
  - Conduct communication-based case management activities including obtaining owner informed consent, discussing finances, treatment planning and administration, appropriately timed medical updates, and discharge planning.
  - Identify and effectively resolve conflict in client and collegial relationships.
  - Contribute to and lead a group using teamwork skills.
  - Identify and utilize self-awareness and self-management strategies in conducting veterinary practice.
  - Assess cases that are beyond one's current skill level, requiring referral or consultation for advanced care.
  - Discuss ethical dilemmas in veterinary practice and apply ethical decision making models to resolve issues.
  - Analyze methods for confronting unethical behaviors and practices in colleagues.
9. Critical analysis of new information and research findings relevant to veterinary medicine; *objectives and skills listed in this domain also apply to competency domains 1-7.*
- Describe how to locate appropriate clinical information/resources.
  - Critically evaluate a clinical research study and explain the strengths and weaknesses of the study design.
  - Apply evidence-based medicine findings to individual case management.

**Clinical Year Assessments.** Beginning with the 2010 summer semester, the College has assessed senior student clinical performance using a rubric that addresses defined competencies. The majority of clerkships use the standard 21-item rubric, with anesthesia, pathology, radiology and field services using similar rubrics adapted to their specific needs. Rating categories of unacceptable, satisfactory, good, and exceptional have specific descriptors for performance expectation (see Appendix pages A40-43 AVMA COE Clinical Competencies and Associated Assessment Rubrics; Appendix page A44 Clinical Competencies Assessment Map).

Student clinical competencies have been analyzed for the Classes of 2011-14 (see Appendix pages A45 and A46; Outcome Assessment: Senior Student Clinical Performance). Competency results show a mean range of 2.9 to 3.7 on a 4.0 scale for the 21 items. Highest student performances are consistently in the competency areas of communications, professionalism, case management, team interactions, and animal welfare with mean scores consistently at or above 3.5. Although satisfactory, lower student performances are seen in diagnostic planning skills, diagnostic test interpretation, basic technical, medical or surgical skills, emergency and intensive care skills, and clinical research skills with scores ranging from 2.9 to 3.1. Based on direct evaluation of 320 students participating in core, selective, and elective clerkships, only 245 (0.2%) of 127,180 clinical competency evaluations were assessed as below competent performance, 3 in professionalism which is an automatic clerkship failure. Per college academic policy, any student who fails a clerkship or who receives an unsatisfactory assessment in professionalism is required to meet with the academic progress committee. Generally, 3-5 clinical year students are identified each year who either fail a clerkship (often medicine, radiology, and field services) or display poor competencies. Only rarely is a student dismissed in their final year of professional education, however it is common to have students repeat entire clerkships to ensure clinical competency.

**Skills Performance Log.** In 2013, the College began a process to assess clinical skill procedures using One45, the College's academic management software. The clinical faculty created skill lists (see Appendix page A47; Outcomes Assessment: Select Veterinary Core and Global Skills) which they felt were important for entry level

veterinarians to master and which they felt students would have opportunities to perform during their senior-year clinical clerkships. Core and global skills were delineated by the faculty and entered into One45. Once a student completes a listed skill, s/he logs the skill in One45 and self-assesses their performance. An assessment form is then automatically generated and emailed to the supervising clinician, house officer, or veterinary technician who directly observed the skill performance. The assessment form has three options to define the skill performance; not yet competent, competently performed, and performed with excellence. The skills performance log allows students to proactively perform identified skills, provides written feedback to students, and creates a defined list of skills performed during the clinical year education. As of September 2014, 6,332 skills have been logged into One45 by clinical students in the Class of 2015. Skills performed represent 474 (91%) of the 523 total skills defined by the clinical faculty. Thirty-six percent of the logged skills were performed on canine patients, 28% on equine patients, 21% on bovine patients, 7% on avian and exotics patients, 5% on feline patients, and the remaining 3% on a variety of animal species. Of the 6,332 logged skills, 4,749 (75%) of the demonstrated skills were directly assessed as having been competently performing and 1,203 (19%) skills were assessed as having been performed with excellence. Only 35 (<1%) skills were assessed as having not yet been performed with competence. Two-hundred fifty-three (4%) skills logged into One45 are currently pending assessment.

#### **12.11.1.d Employment rates of graduates (within one year of graduation),**

The college has graduated 379 veterinarian in the past 5 years. At graduation, employment data was known for 272 (72%) graduates. Of these, 194 (71%) had accepted positions in clinical practice, with 73 (27%) and 5 (2%) choosing post-graduate clinical or research education, respectively. The college also evaluated employment at 20 and 8 months post-graduation for the Classes of 2011 and 2012, respectively. We graduated 156 students in these classes. We were able to contact/verify information from 148 graduates. Of the 148 graduates, 30 were in academic programs advancing their veterinary education (24 internships, 5 residencies, 1 graduate degree), 113 were directly employed in veterinary medicine (104 private practice, 4 public practice, 1 industry, 4 military), 3 were unemployed, and 1 was deceased. None of the graduates were employed in careers outside veterinary medicine. See Appendix page A39; Summary of DVM Graduate Initial Employment Data: Classes of 2010-14

#### **12.11.1.e Assessments of graduating seniors; and assessments of alumni at some post-graduation point (for example, three and/or five years post-graduation) assessing educational preparedness and employment satisfaction,**

Annual exit surveys and interviews are conducted with each class of senior students immediately prior to graduation to assess students' overall satisfaction with the preclinical and clinical components of the professional curriculum, to identify deficiencies in the curriculum, to obtain open feedback on all matters that impact their educational and personal experiences, and to obtain data on their plans following graduation. In addition, the college surveys alumni each year at roughly 18 months post-graduation to capture their assessment of the strengths and weaknesses of the DVM curriculum and their employment satisfaction.

**Graduating Seniors.** Senior exit surveys have been conducted since 1994. In 2009, the College added senior focus group assessments to collect additional student feedback. Students meet in confidential sessions with the dean, the associate dean for academic and student affairs, and the assessment director. Thematic summaries of the sessions are provided to faculty and staff, with any identified recommendations for improvement. Listed below are some of the common themes and current college actions.

- Urged the college to consider establishing an in-house Emergency and Critical Care Service. *The college created this 24/7/365 service in 2012.*
- Students voiced that the shelter medicine clerkship was valuable; it provides good surgical experience, as well as solid education regarding common preventable conditions and diseases. *The faculty support a desire to expand the Shelter Medicine service. The college will actively pursuing philanthropic gifts to endow a position in this program.*
- Concern was expressed that the hospital relied too heavily on using DVM students as veterinary technicians. Students felt they should be educated better on how to supervise and utilize technicians to

accomplish their primary tasks of diagnosing disease, treating patients, and educating clients regarding the prognosis of underlying diseases and/or disorders. *The hospital has made strong moves to hire additional technicians. The hospital also participates in a unique veterinary technician internship program and attracts 4 talents students annually to this program.*

- Students describe their competency strengths as communication, professionalism, team interactions, patient history, and diagnostic skills and their weaknesses as major surgery and dentistry. *This description of competency strength and weakness parallels ratings by employers and is reflected in 4<sup>th</sup> year competency rubric assessment results.*
- Students frequently request opportunities to schedule additional clerkship electives. *The College has worked to reduce required clerkships and add flexibility to the clinical curriculum. The recent curriculum review suggests faculty are interested in possibly expanding the clinical year from 12 to 16 months.*
- Recent students have suggested VMD 890 Transition and Accreditation Seminars provides little educational benefit. *No change is planned, however the College will monitor this moving forward.*
- Students have urged that more students should be scheduled into VMD 869 Veterinary Neurology and VMD 872 Small Animal Orthopedic Surgery and Physical Rehabilitation to benefit from the caseload. *Faculty are considering modifying the minimum number of students scheduled into these clerkships.*
- Students expressed a desire to have more ultrasound electives. *The college currently offers VMD 887 Small Animal Ultrasound and VMD 875 Veterinary Ultrasonography as didactic and clerkship courses. Perhaps offering these courses more often or with larger enrollments would meet student requests.*
- Students desire more opportunities during their radiology clerkship to read more radiographs with our diagnostic imaging faculty. *Our diagnostic imaging faculty are talented and respected. This request is heard often, despite an exceptionally strong diagnostic imaging curriculum. It appears our students recognize the strength of the diagnostic imaging program and desire more access to these faculty.*
- Student have expressed a need for more personal finance and business knowledge, and more financial aid counseling. *These topics have been added to freshmen orientation and the college is in early stages of partnering with the College of Business to add more business content to the curriculum.*

**Alumni Summary.** Alumni assessments are conducted roughly 18 months after graduation (see Appendix page A48, Alumni Assessments). The response rates for the Classes of 2008-12 were 37%, 33%, 35%, 29%, and 19%, respectively, with a total of 108 alumni responses gathered. The survey consists of 30 questions related to abilities, 11 questions related to the educational program and 3 questions related to demographics. Alumni rated their abilities highest (>4.0 on a 5-point scale) in communications, patient history, interpreting diagnostic results, professionalism, mechanisms of disease, problem solving and use of evidence-based medicine. They ranked themselves lower (<3.0 on a 5-point scale) in interpreting ultrasound, performing surgery and business knowledge skills. Alumni were also asked how satisfied they were with their veterinary career choice and whether, if they had to do it over again, they would pursue the DVM degree at UT. Forty-three percent were highly satisfied, 41% somewhat satisfied and 16% dissatisfied or highly dissatisfied with their current position. Sixty percent were highly satisfied, 26% somewhat satisfied and 14% dissatisfied or highly dissatisfied with their decision to become a veterinarian. Sixty-three percent said they would definitely choose UT again, 23% said they would probably choose UT again, 8% said they may not choose UT again and 6% said they definitely would not choose UT again.

#### **12.11.1.f Assessments of employers of graduates to determine satisfaction with the graduates,**

See Appendix page A49; Employers' Assessments of New Graduates' Readiness to Practice

The survey of employers is conducted each year, approximately 9-months following graduation. The response rate over the last 5 years assessing graduates from the Classes of 2009-13 was 54% of identified employers. The survey consists of 30 questions, including 4 questions related to communications, 15 questions evaluating knowledge and skill performances, 6 questions addressing professionalism, and 3 questions assessing employee effectiveness. Graduates were highly rated in client communication skills (40% rated excellent) and professionalism (55% rated excellent). In knowledge of medical principles, 40% of graduates were rated excellent. Lower rated areas of performance were observed in surgical, dentistry, and emergency case management skills, areas in which the

college has recently increased options to provide students with additional clinical opportunities. Employers rated the overall preparation of our graduates as excellent (36%), very good (54%), fair (8%), or poor (2%). When compared with graduates from other veterinary colleges or schools, employers rated our graduates above (36%), the same (61%), or below (3%) the ability of other graduates. Employers rated the effectiveness of UTCVM graduates as highly effective (42%), very effective (41%), moderately effective (14%), or not effective (3%).

**12.11.1.g Assessments of faculty (and other instructors, for example interns and residents) related to such subjects as adequacy of clinical resources, facilities and equipment, information resources, etc.; and preparedness of students entering phases of education, and**

Annually, each academic department is asked to review curriculum survey data collected from alumni, employers of new graduates, and graduating seniors. The faculty, residents, and interns also provide feedback to the department heads, curriculum committee, and the associate dean for academic and student affairs regarding the preparedness of students entering the clinical curriculum. Faculty, residents, and interns also regularly provide input to department heads and the hospital board regarding adequacy of the facilities and equipment, clinical resources, and library and information systems. Clinical resources, facilities and equipment, library and informational resources, and the preparedness of student entering each phase of the DVM degree curriculum are considered adequate by the faculty, residents, and interns. In 2014, the curriculum committee requested a survey of the faculty and students on a variety of topics and discussion issues. Faculty response was 49%, and student response was 79%. A summary of this survey was provided to faculty during a faculty assembly and full results provided to faculty and staff by email (see Appendix page A50; Faculty and Student Survey of Professional Curriculum).

**12.11.1.h Additional assessment that might assist the college in benchmarking its educational program.**

Beginning with the 2010-11 academic year, the College began tracking clinical grade completion by faculty. The College expectation for completing clinical grades is 2 weeks, providing timely feedback to students through the assessment rubric and additional comments to enhance student learning. At the time the tracking process began, the average completion time was 20 days, with more than half of the faculty taking longer than 14 days to complete rotation grades. Four years later, the average completion time has decreased to 12 days, with 70% of faculty completing grades within the 14-day target.

**12.11.2 Institutional outcomes.**

**12.11.2.a Describe how the college evaluates progress in meeting its mission (for example, benchmarking with other institutions, etc.).**

The college evaluates progress in meeting its mission subjectively and objectively. It subjectively evaluates its progress through communication with its many constituencies including the Tennessee Veterinary Medical Association, Alumni Council, College Advisory Board, VMC clients, referring veterinarians, breed associations and animal interest groups, and others. We meet regularly with the Institute of Agriculture and University upper administration to be sure that the college is meeting the academic expectations of the University. Finally we meet regularly with our students to assess their issues and to address them in a timely fashion. We also benchmark our progress objectively by consulting the AAVMC Comparative Data Report. This is a useful reference to compare budgets, enrollment, diversity, caseload, faculty measures, research productivity, etc.

**12.11.2.b Describe the adequacy of resources and organizational structure to meet the educational purposes (dean should provide).**

The college has experienced little improvement in state financial support. In meeting its financial obligations, the college tries hard to preserve its core programs and to keep the education of veterinary students as its highest priority. The greatest consequence of weak state budget support is manifested in the loss of research focused programs and programs not considered core to the educational mission of the college. The present organizational structure is adequate to meet all the needs of the College's educational programs.



**12.11.2.c Describe outcomes assessed for college activities that are meaningful for the overall educational process (for example, scholarly activity of the faculty, faculty awards, faculty and staff perception of teaching resources, student satisfaction with the educational program, teaching improvement benchmarks, and others). If your program assesses other outcomes, briefly describe the results.**

Each year, as part of the faculty evaluation process, department heads obtain the scholarly work accomplished by the faculty member for the past year. This includes all publications, invited presentations, research grants and contracts, and any other contributions that constitute scholarship. The evaluation also includes teaching evaluations obtained regularly from students. Faculty with low teaching evaluations are counseled by the heads and sometimes sent to teaching workshops. The college has an extensive array of awards given annually at our honors convocation. Awards recognize high performance by faculty and students. Most of the awards focus on teaching and learning. The college regularly addresses teaching issues within the curriculum committee. By communicating on a regular basis, issues are resolved and adjustments are made timely. The exit interviews of graduating students are useful in making educational program adjustments. For example, we learned students thought the shelter medicine elective was among the most valuable clerkships because they became more confident surgeons after spaying and neutering multiple dogs and cats. This comment raised the priority of this educational program.

**12.11.2.d Describe how outcomes findings are used by the college to improve the educational program (give examples).**

A variety of outcomes findings are used to assess the effectiveness and completeness of the curriculum, including exit interviews, NAVLE student performances, and assessments of graduates' readiness to practice veterinary medicine through employers' surveys. The primary responsibility for monitoring and revising the professional curriculum in response to outcomes findings is shared by the Curriculum Committee, Assessment Committee, and the Associate Dean for Academic and Students Affairs. Suggestions of potential curricular deficiencies from outcomes findings have promulgated the development and implementation of several new courses or clerkships. Examples of improvements in the curriculum following the previous AVMA COE accreditation visit include:

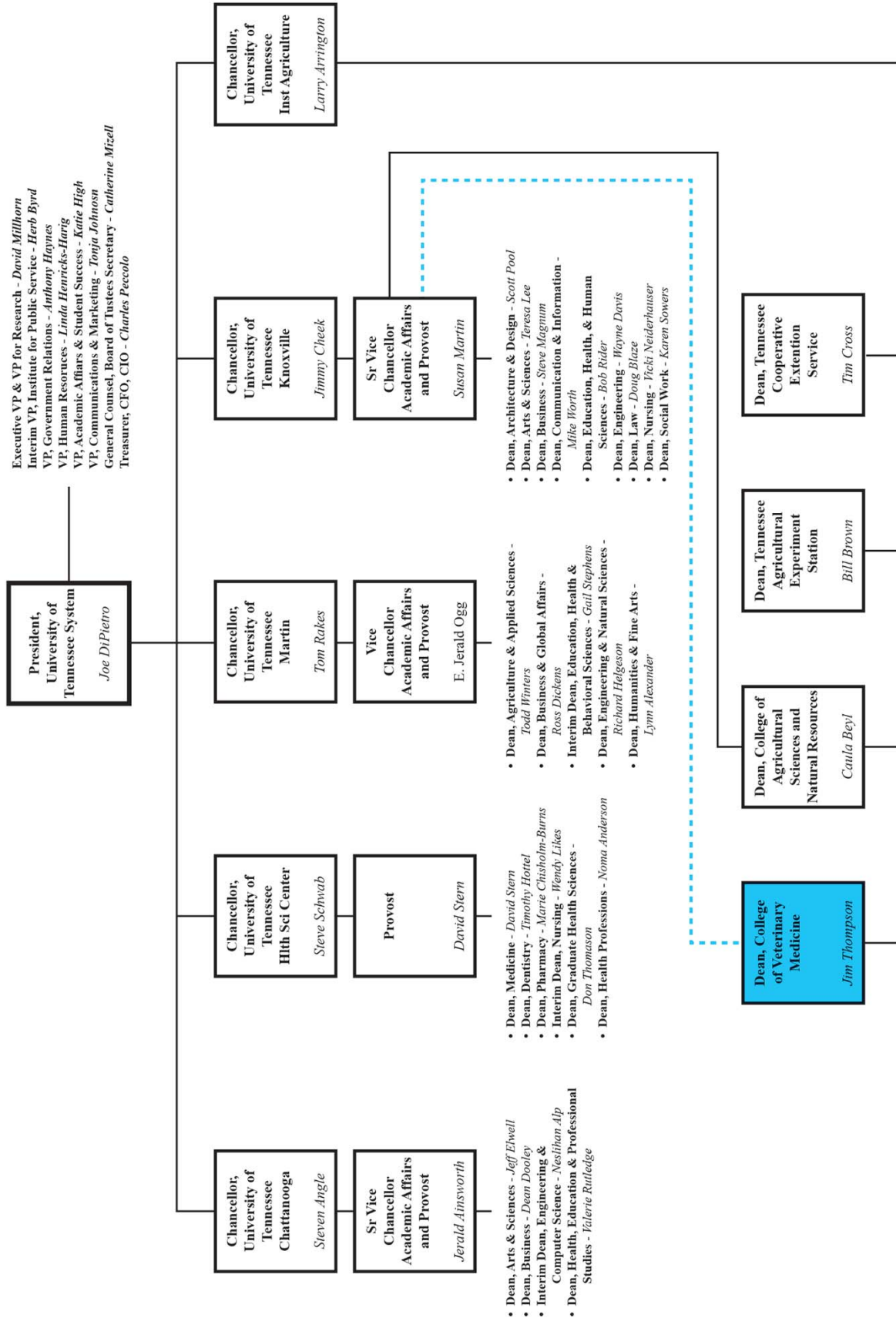
- Course reports are now completed by coordinators and submitted to the Curriculum Committee each semester, identifying strengths and weaknesses of the course, summaries of evaluations and plans for the next semester. The committee reviews and discusses reports and submits suggestions to the coordinator.
- A small animal emergency rotation was initiated during the 2012 clinical year, overseen by one of several newly hired criticalists. The need for focused clinical opportunities in emergency and critical care was identified through exit, employer, and alumni surveys.
- A shelter medicine and spay/neuter clerkship was initiated in 2013, allowing students more surgical opportunities, an area of need identified in exit, employer, and alumni surveys.
- Beginning with the Class of 2011, a clinical competency assessment rubric was developed to assess clinical performance. The same year, the college shifted clinical assessment to an online system (One45) to improve feedback and monitoring of competency assessment. The majority of rotations use the standard 21-item rubric, with anesthesia, pathology, radiology and field services using similar rubrics that are adapted to their specific needs. Low performance flags are automatically sent to the associate dean for academic and student affairs and the chair of the academic progress committee. Similar rubrics are now used to assess student performance in the college's problem-based ABLEs courses.
- With the Class of 2015 the College initiated a skills log requirement. Faculty in each service identified skills, both core and global, for students to complete during the clinical year.
- Monitoring of grade completion times during the clinical year was instituted in 2011 to encourage timely grading of clinical students. Grade completion times have been improved each semester since the monitoring reports began. The goal is for student assessment forms to be completed by clinicians within 2 weeks following the end of each clerkship rotation.

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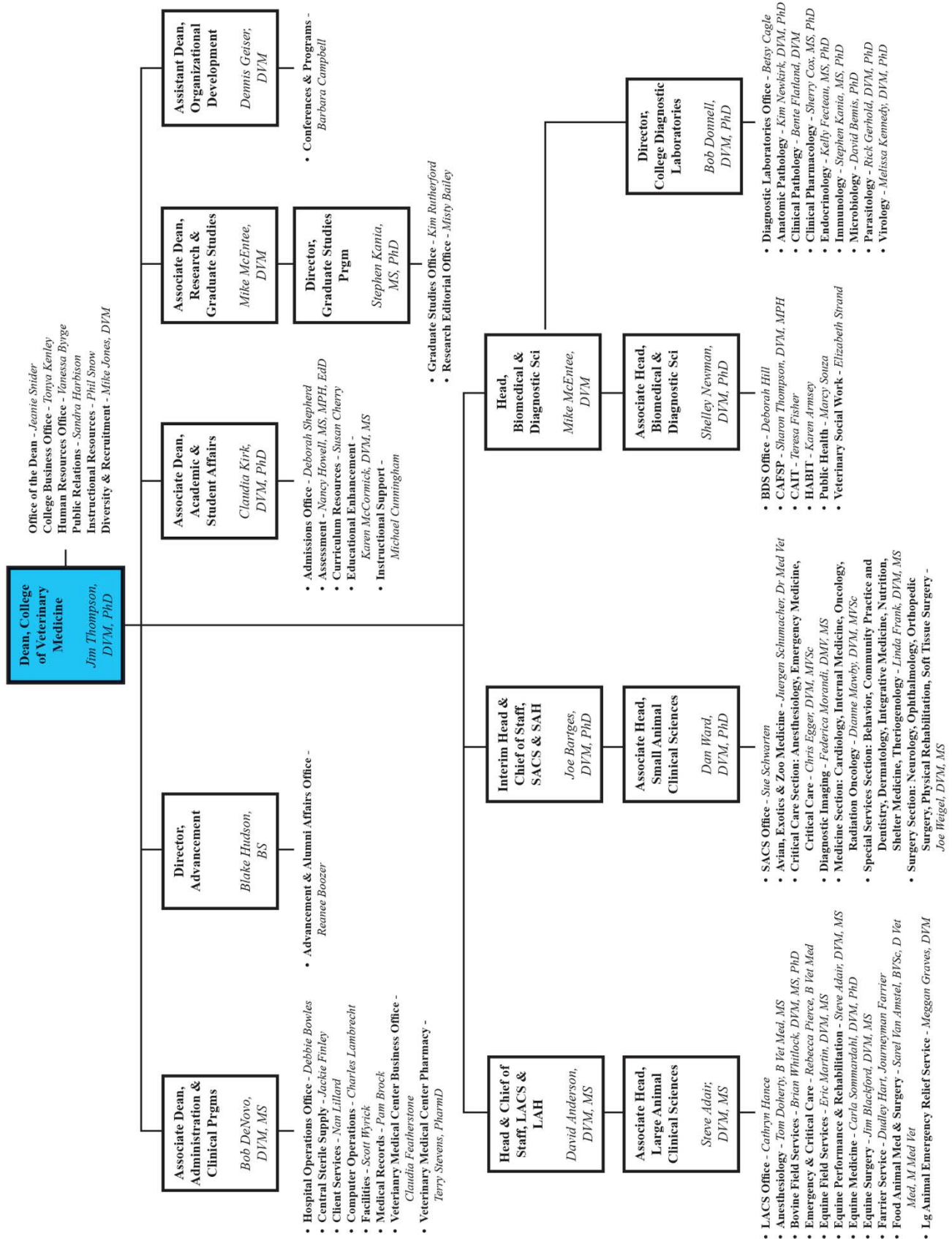
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### 12.1.3 Organizational Chart, The University of Tennessee



12.1.4 Organizational Chart, UT College of Veterinary Medicine



### 12.1.5 Major College Committees

#### Administrative Committees, (Total 1, defined below)

##### Executive Committee

**Purpose:** The executive committee (EC) provides a forum for discussion of departmental and collegiate matters and is the policy council for all CVM programs. It recommends actions to the dean. The EC integrates all of the organization's many facets to better assure alignment of purpose and efforts to achieve the college mission. Typical issues for the committee include those affecting teaching, research, extension, service, public relations, administration, and management of resources. The responsibilities of the EC include, but are not limited to:

- the final policy and decision recommending body of the college, particularly for issues and initiatives pertaining to the college as a whole.
- a forum for discussing academic, administrative, and workforce issues impacting the departments and/or college.
- with faculty input, college bylaws development and implementation.
- alignment of college direction in conjunction with reporting college committees.
- final oversight of budget issues impacting teaching, research, service, and hospital operations.

**Membership:** Dean, associate and assistant deans, department heads, and the dean's executive assistant (non-voting). Proxies (representatives) are not included. The dean chairs the meetings.

#### Standing College Committees (Total 8, all 8 defined below)

##### Academic Progress Committee

**Purpose:** The academic progress committee evaluates the academic performance of professional veterinary students. The committee (1) monitors the academic performance of professional veterinary students who do not meet program standards, (2) monitors ethical performance and readiness to practice of professional veterinary students, (3) decides remedial and disciplinary action for students with deficiencies, (4) keeps specifics (names and situations) in strictest confidence, and (5) reports committee activity in an annual report to faculty.

**Membership:** The committee consists of five college teaching faculty representing each department and ideally each phase of the veterinary curriculum plus the associate dean for academic and student affairs.

##### Admissions Committee

**Purpose:** The admissions committee is a standing committee with responsibility to evaluate applicants for admission to the CVM professional curriculum and assign ranking value to each. The committee members shall include academic promise, motivation, preparation, maturity, and the applicant's potential to bring unique values to classmates in their evaluation of applicants. The committee's actions have the greatest effect on the quality of graduates from the college.

**Membership:** Nine to 12 faculty representing basic and clinical science disciplines are appointed from a selection pool of CVM faculty that includes nominations by the department heads. The director of diversity programs is a member. Additional members may include UT and TSU animal and dairy science faculty members, the State veterinarian, alumni council members, and TVMA veterinary practitioners. The associate dean for academic and student affairs chairs the committee.

##### Assessment Committee

**Purpose:** The purpose of the Assessment Committee (AC) is to develop methods to measure the effectiveness of the college's professional educational program. This is accomplished using student evaluation of teaching, the use of outcomes measurements, developing and implementing stakeholder surveys, and other methods as needed. Responsibilities include:

- Overseeing course and instructor evaluations, including developing and refining instruments, and overseeing methods to obtain data from students.
- Providing summary analysis of data and providing recommendations to the Curriculum Committee, Executive Committee and others as necessary.
- Developing methods to measure stated clinical competencies for program evaluation.
- Preparing the outcomes assessment portion of the self-study required for AVMA-COE accreditation.
- Preparing outcomes assessment section of the annual progress reports required by AVMA-COE.
- Other activities as directed by the dean.

**Membership:** The AC consists of one faculty member from each department, selected by the department head and approved by the dean; the director of Educational Enhancement (ex officio) and the chair of the Curriculum Committee (ex officio). Members will rotate off the committee in staggered three-year terms. Members have voting privileges, except the director of Educational Enhancement and the chair of the Curriculum Committee, who serve in an advisory role. The director of assessment serves as the committee chair and as a voting member.

### Curriculum Committee

**Purpose:** The Curriculum Committee (CC) represents the faculty, who ultimately own the professional DVM curriculum. The purpose of the CC is to oversee the development of the curriculum with careful regard to the sequence of professional courses and content delivery, the adequacy of course educational content, and the appropriate degree of curriculum redundancy. The specific responsibilities of the CC include:

- perform an annual curriculum assessment defining the strengths and weaknesses of the preclinical and clinical phases of the professional degree program. This annual assessment will be documented through a year-end written report to the college executive committee and will include curricular changes considered during the year (both approved and denied changes) and recommendations for curricular changes to be considered by the committee during the following academic year.
- review to approve or deny requests for elective clinical experiences outside the UTCVM.
- review faculty requests for curricular change that would substantially impact other portions of the curriculum and prepare a recommendation to be voted on by the faculty.
- address curricular issues that arise on an *ad hoc* basis and depending on the nature of the issue either handle the matter within the committee or prepare a recommendation for faculty vote.
- provide the associate dean for academic and student affairs support to facilitate UTK Graduate Council and curriculum committee approval of CVM faculty approved curricular changes.
- perform annual course reviews and provide written reports summarizing committee discussion for course coordinator consideration and use as appropriate.

This committee shoulders a particularly important responsibility for the college and veterinary profession. Committee members should embrace the concept of educational creativity and are encouraged to continually survey the national and international educational environment for new, innovative forms of teaching, and when appropriate develop and implement creative educational ideas into the professional curriculum to meet the college goal of advancing the art and science of veterinary medical education.

**Membership:** The CC consists of fifteen (15) to sixteen (16) members; two to three faculty members from each department, one student member from each professional DVM class, and three ex officio members include the associate dean for academic programs, director of the office of educational enhancement, and the chair of the assessment committee. Department faculty members will be recommended by their respective department head and appointed by the dean of the college. Student members will be determined by class election. All members of the committee will have voting privileges except the director of educational enhancement and the chair of the assessment committee who will both serve in an advisory role to the committee. The CC chair is appointed by the dean.

### Educational Enhancement

**Purpose:** Promote a professional and positive learning environment for UTCVM faculty, staff and students, including:

- coordinating of the student Welcoming, White Coat, and Scrubbin' In ceremonies.
- providing programming to enhance the academic learning environment and student development.
- assisting the Master Teacher Program to achieve educational initiatives.
- discussing and providing input on issues impacting students or faculty in the classroom, hospital, and teaching laboratories.
- monitoring and leading the faculty-student advising program.
- assisting in programming for other student needs.

**Membership:** Membership includes faculty representatives from each academic department, the Student Services Coordinator, a Pendergrass Agriculture-Veterinary Medicine Library Representative, the Director of Veterinary Social Work, and sophomore, junior, and senior year veterinary student representatives selected and invited by the committee members.

### Promotion and Tenure Committee

**Purpose:** The promotion and tenure committee is a standing committee that provides fact-finding reviews and makes recommendations on procedural matters of promotion and tenure of college faculty. The committee prepares, using CVM and University guidelines as a basis, a confidential report for each candidate's dossier which details the adequacy of the documentation and its strengths and weaknesses. The committee likewise evaluates progress of faculty who are 2-3 years from applying for tenure and provides the dean and department head a report similar to that described above which will help the faculty member and department head prepare for the actual promotion and tenure evaluation. The committee is also charged to evaluate college promotion and tenure procedures and recommend improvements. In addition to considering candidates for promotion and tenure, the committee also serves as an academic discontinuance advisory committee to consider proposed discontinuation of college academic programs and as the college resource to review CVM faculty proposals for professional development leave.

**Membership:** This committee has 9 members; 3 members from each department. All members must be tenured professors and are appointed by the dean. The chair is also appointed by the dean.

### Research Committee

**Purpose:** The research committee (RC) considers matters appropriate to the promotion of quality research programs within the college. The functions of the committee are to:

- serve as an advisory group to the associate dean for research and graduate studies and to the dean on matters relating to the administration of college research policies.
- make recommendations on how to promote and fund a diverse veterinary research program including applied, translational, and basic science research.
- review and make recommendations on awards given by the office of research including Center of Excellence awards, fellowships/scholarships, core equipment purchases, start-up monies, seed funding, and career bridging support.
- provide recommendations on the nature, equipping, and use of college core research facilities.
- assist in compiling a compendium of research opportunities/agencies.
- review and make recommendations on principles for allocating college research space.
- assist in the planning and implementation of the CEM Research Symposium.

**Membership:** The RC consists of eight (8) to eleven (11) members; two to three faculty members from each department, one faculty member from Animal Sciences, and the associate dean for research and graduate studies who serves as an ex officio member. All members of the committee have voting privileges. The RC chair is appointed by the dean.

### Scholarships and Awards Committee

**Purpose:** The Scholarships and Awards Committee recommends selection of recipients for honors, scholarships, awards, and college loans. The committee (1) recommends students for scholarships and loans based on stated scholarship and loan criteria and satisfactory academic progress, (2) recommends students for awards based on performance and specific award criteria, (3) arranges for certain scholarships and awards to be presented at the annual honors convocation, and (4) coordinates the convocation banquet.

**Membership:** The committee consists of 5-8 faculty, the associate dean for academic and student affairs, the director of advancement, plus a clerical, non-voting staff member from the office of the associate dean for academic and student affairs.

**Special College Committees or Boards (Total 8, 2 defined below). Not defined - Art Display Committee; Career Ladder Assessment Committee; Comparative and Experimental Medicine Joint Graduate Coordinating Committee; Institute Review Board; Marketing Oversight Committee; Space Committee**

### Diversity Committee

**Purpose:** The purpose of the Diversity Committee (DC) is to create, cultivate, and facilitate an environment of inclusivity for all faculty, staff, and students at the University of Tennessee. A diverse College of Veterinary Medicine (CVM) where peoples' ideas, culture, ethnicity, gender, and beliefs are accepted, appreciated, and respected will provide greater individual intellectual stimulation and growth and will allow the College to better serve its local, regional, national, and global community. The goals and responsibilities of the DC include:

- to work closely with the CVM administration to create and sustain a welcoming, supportive, and inclusive College climate.
- to attract and retain greater numbers of individuals from underrepresented populations into faculty, staff, and leadership positions, including directors, department heads, deans, vice chancellors, and chancellors.
- to attract, enroll, retain, and graduate increasing numbers of students from historically underrepresented populations and international students.
- to develop and strengthen partnerships with diverse communities in Tennessee and the surrounding region.
- to ensure curricular requirements include significant intercultural perspectives.
- to prepare professional and graduate students to become teachers, researchers, and leaders in a diverse world.

**Membership:** The DC consists of 12 members: one faculty member from each department (BDS, LACS, and SACS), two members from the CVM staff, four members from the student body (one from each DVM class), one member from the local or regional veterinary community, the associate dean of academic and student affairs, and the director of diversity who will also serve as committee chair. Faculty and staff members are recommended by their respective department head. The community member is selected by the dean, and student members are selected by class election. All members are approved by the dean. Faculty and staff members rotate off the committee in staggered three-year terms. All members have full voting privileges.

**Faculty and Staff Awards Committee**

**Purpose:** The CVM Faculty and Staff Awards Committee coordinates nominations for awards, including those within the College, Institute of Agriculture, University of Tennessee and other awards external to the University. The Committee selects recipients for specified College awards and oversees nominations for Institute, University and external awards. Responsibilities include:

- assisting in the selection of the UTCVM Outstanding Employee each semester.
- selecting recipients for the Reed Award.
- providing nominees for UTIA and UTK faculty & staff awards.
- providing nominees for other awards, including TVMA, AVMA, Zoetis, and other national awards.
- maintaining a database of award recipients.
- other activities as directed by the dean.

**Membership:** The committee consists of 6-10 members, with both faculty and staff representation. Faculty and staff members are recommended by their respective department head and all members are approved by the dean. Members rotate off the committee in staggered three-year terms. All members have full voting privileges. The committee chair is appointed by the dean.

**Hospital Oversight Committees or Boards (Total 5, 4 defined below). Not defined - Client Services Advisory Committee****Hospital Board**

**Purpose:** The hospital board (HB) provides a forum for oversight of hospital operations, serves in an advisory capacity to the associate dean for administration and clinical programs, helps provide solutions to identified problems, supports the LACS and SACS department heads in their management of hospital professional services, and provides the dean a scheduled venue for oversight of hospital operations. The HB receives routine reports on activity and fiscal solvency of the hospital and balances competing requests for resources from hospital units. The HB considers strategic plans for hospital functions and facilities and recommends courses of action to the dean who is ultimately responsible for all hospital finances and programs.

**Membership:** All members of the HB are voting members with board decisions based on a majority vote. Ex officio members include the associate dean for administration and clinical programs (chair), dean, small and large animal clinical sciences department heads, director of diagnostic laboratories, and the directors of hospital finances. In addition, the board has 3 faculty or staff members who serve 3 year terms; one member from SACS, one member from LACS, and one representative from veterinary referral service laboratories.

**Medical Records Committee**

**Purpose:** The Medical Records Committee (MRC) is responsible for establishing policies for maintaining hospital medical records. The responsibilities of the MRC include, but are not limited to:

- developing an approved set of guidelines for record completeness.
- approving the deficiency review list to be used by Health Information personnel in performing quantitative analysis.
- adopting a penalty system for non-compliance.
- performing quality review of documentation.
- retiring medical records that remain permanently incomplete because of extenuating circumstances.
- reviewing proposed policies, making policy recommendations, reviewing and revising existing policies, and following-up on problems.
- establishing guidelines for the electronic patient record and assisting with the implementation of the electronic patient record.
- maintaining forms management by reviewing and approving all new forms, periodically reviewing and revising existing forms, and overseeing the forms control process.
- maintaining the Approved List of Abbreviations used within the patient records by reviewing and approving all requests for new abbreviations and meanings. Only one meaning per abbreviation. Periodically reviewing and revising existing abbreviations to ensure appropriate use.

**Membership:** Multidisciplinary committee consisting of a minimum of two representatives from each department. Ex officio members include the Associate Dean of Hospital Administration and Clinical Programs, the Director of Computer Operations, and the Health Information Administrator. Department faculty members are recommended by their respective department head and appointed by the dean of the college. All members of the committee have voting privileges. The chair is appointed by the dean.



**Pharmacy Committee**

**Purpose:** The pharmacy committee (1) assists with the development of policies and procedures for drug use throughout the hospital, (2) ensures compliance with all state and federal regulations related to hospital pharmacy function, and (3) assists the pharmacy in its mission to assure the availability of safe, efficacious, and cost-effective drug therapies for hospital patients.

The functions of the committee are:

- to serve as an advisory group to the veterinary medical staff and the pharmacists on matters relating to product selection, including approval of product requests to ensure a duplication of products is avoided; review of reported adverse reactions to drugs used in the hospital; to study any problems associated with administration, use, or availability of drug products in the hospital.
- to review standing operating policies of the pharmacy and make recommendations as needed concerning established policies and newly developed policies.
- to assist in the annual formulary revision.
- to assist the hospital staff and students with suitable educational programs pertaining to drugs and their use.
- to review and make recommendations on pricing of drugs listed in the hospital formulary.

**Membership:** This committee consists of representatives from the clinical departments, the pharmacy manager, and a representative from hospital administration. The chair and members are appointed by the dean. A recorder is appointed from the membership by the chair.

**Point-of-Care Testing Committee**

**Purpose:** The point-of-care testing (POCT) committee provides quality control (QC) oversight of point-of-care diagnostic testing in the Veterinary Medical Center (VMC) emergency room, intensive care unit, treatment wards, ambulatory units, zoo, and other areas remote to our hospital diagnostic laboratories. The POCT committee coordinates communication and planning of all VMC-POCT functions. Input from clinicians, veterinary technicians, information technology, health information services, billing, and others are used to develop plans and policy for shared resources to problem-solve and make recommendations to the Hospital Board (HB) regarding policies, procedures, and equipment.

**Membership:** The POCT committee consists of six (6) members, two of which are ex officio members; the clinical pathology section chief and the clinical pathology laboratory supervisor. Faculty members representing the large animal, small animal, and avian and exotic animal hospitals as well as technicians from the large and small animal hospitals are recommended for committee membership by the hospital board and appointed by the dean of the college. All members of the committee have voting privileges. The POCT committee chair is appointed by the dean.

12.2.1 Table A – Total Expenditures

**Table A: Total Expenditures for Immediate Past 5 Fiscal Years – Direct and Indirect Expenses**

Year	Instruction	Academic Support	Student Services	Services of Educational Activity				Un-Sponsored Student Aid	Sponsored Student Aid
				Teaching Hospital	Diagnostic Lab	Lab Animal	Lab Animal		
2009-10	11,248,110	5,229,885		13,077,343	2,850,998	234,914		283,869	
2010-11	13,049,637	7,219,472		13,410,703	2,940,943	209,547		324,735	
2011-12	12,262,325	6,835,328		14,447,719	3,000,568	263,288		260,802	
2012-13	11,969,826	7,044,325		15,751,369	3,097,849	297,622		253,515	
2013-14	12,572,939	9,783,069		17,444,695	3,391,617	335,363		342,804	
% Change†	11.8%	87.1%	NA	33.4%	19.0%	42.8%	NA	20.8%	

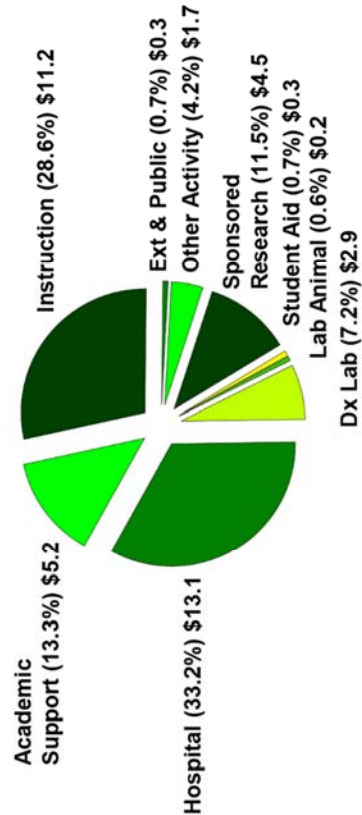
† Percent change is evaluated for immediate past 5 years.

**Table A: Continued**

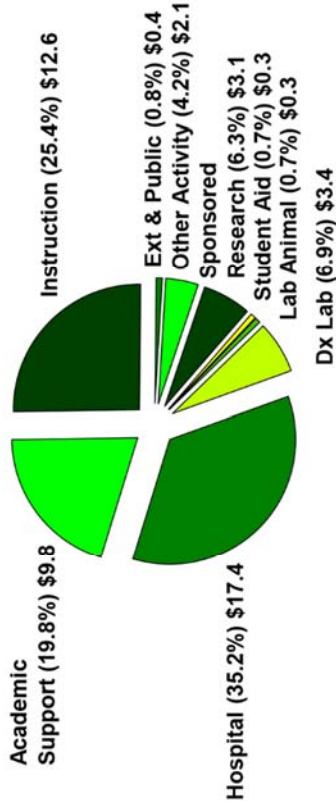
Year	Sponsored Research	Other Sponsored Activity	Ext & Public Service	Total Expenditures
2009-10	4,525,759	1,651,135	273,342	39,375,355
2010-11	4,801,440	1,740,483	218,441	43,915,401
2011-12	3,963,832	1,780,762	366,071	43,180,695
2012-13	2,985,711	2,880,158	451,434	44,731,808
2013-14	3,134,044	2,092,482	399,538	49,496,551
% Change†	-30.8%	26.7%	46.2%	25.7%

† Percent change is evaluated for immediate past 5 years.

**2009-10 Expenditures \$39.4M**



**2013-14 Expenditures \$49.5M**



12.2.1 Table B – College Revenue

**Table B: College Revenue (Sources of Funds) from all Sources of Immediate Past 5 Fiscal Years**

Year	State Appropriations	Benefits	Tuition & Fees	Is tuition estimated amount?	Endowment Income (current yr)	Gifts for Current Use	Sponsored Program Income/Cost Recovery	Other
2009-10	16,219,185	8,427,283	No	509,251	1,209,576	5,745,055	5,985	
2010-11	17,416,903	9,807,038	No	517,522	949,568	5,938,843	3,542	
2011-12	14,823,603	10,871,315	No	595,534	458,327	4,891,352	4,127	
2012-13	15,720,772	10,596,472	No	602,842	318,947	5,560,504	14,349	
2013-14	16,796,354	11,360,199	No	696,084	313,595	4,460,564	8,433	
% Change†	3.6%	34.8%	NA	36.7%	-74.1%	-22.4%	40.9%	

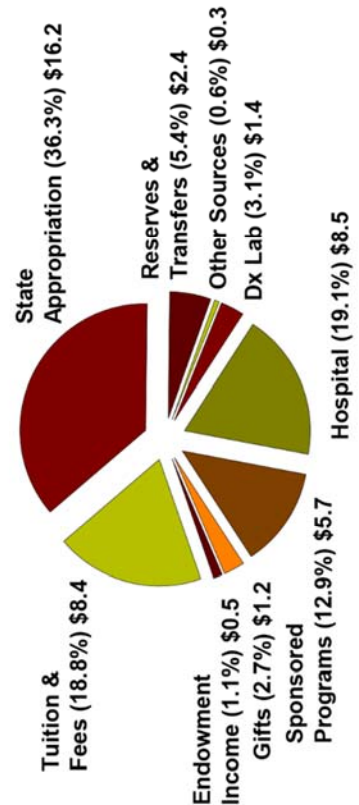
† Percent change is evaluated for immediate past 5 years.

**Table B: Continued**

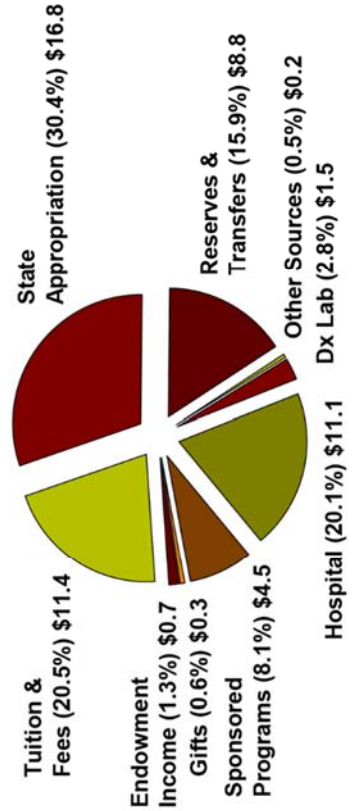
Year	Sales and Services			Reserves and Transfers	Total Revenue
	Teaching Hospital	Diagnostic Lab	Other Sources from Sales & Services		
2009-10	8,528,990	1,379,792	276,405	2,405,934	44,707,456
2010-11	8,927,196	1,411,222	169,641	4,858,524	49,999,999
2011-12	9,349,603	1,409,887	208,117	6,339,924	48,951,788
2012-13	10,331,569	1,414,460	233,827	7,912,650	52,706,390
2013-14	11,110,216	1,534,607	247,857	8,771,543	55,299,452
% Change†	30.3%	11.2%	-10.3%	264.6%	23.7%

† Percent change is evaluated for immediate past 5 years.

**2009-10 Revenue Sources \$44.7M**



**2013-14 Revenue Sources \$55.3M**

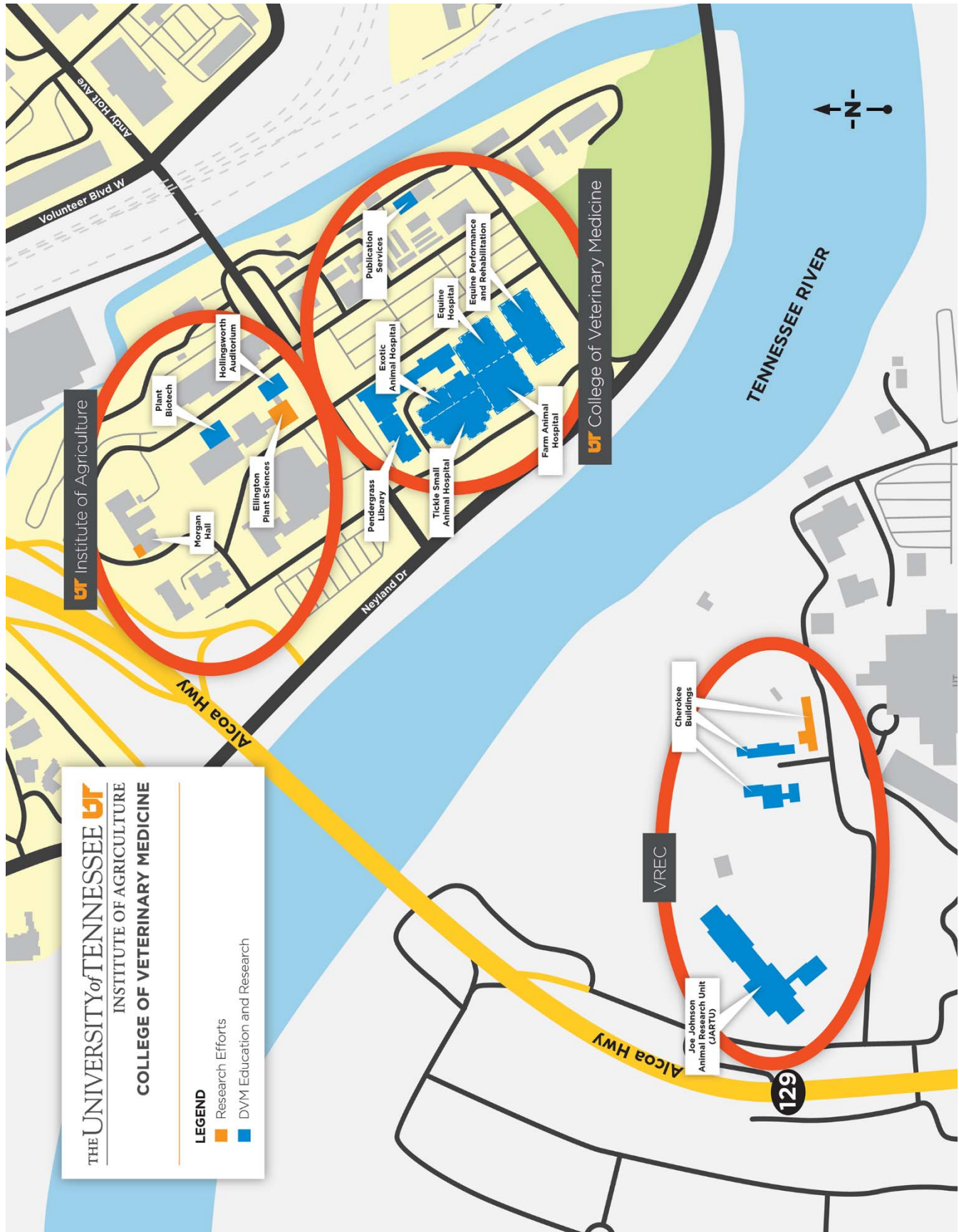




### 12.3.2 College Area Map – Large View



### 12.3.2 College Area Map – Close-up View



### 12.3.5 Isolation Procedures

#### Small Animal Hospital Isolation Procedures

Patients suspected of having a contagious infectious disease will be housed in the isolation unit to prevent transmission of the agent to other hospitalized patients.

#### 1. Identification and notification of staff and service chief of potentially infectious agents.

- a. Notify activation team member (list located inside every exam room cabinet door) and contact clinician on service.
- b. Put on PPE (kit located in exam room) and request covered gurney.
- c. Determine isolation facility to be used (standard isolation or advanced); advanced isolation - dogs greater than 40 pounds, or more than one infectious disease, or more than 2 animals of large size
- d. Before transporting patient to isolation, spray shoe covers and gurney wheels with ProVet Logic. Provide a 10 minute wait time for microbial deactivation.
- e. Take patient directly to isolation facility and admit to cage.
- f. After entering facility using standard protocol, place blue identification collar on each patient.
- g. Clean gurney with ProVet Logic. Always spray wheels when moving in/out of Isolation. Use 10 minute dwell time. Leave gurney in isolation anteroom.
- h. See protocol for cleaning infected exam rooms.

#### 2. Protocol for isolation entry, patient care, discharge.

- a. Log patient's location in book located on counter and post sign on door that isolation is occupied. List the suspect disease.
- b. Place patient record in anteroom on the counter. Paper taken into the isolation ward with the patient should be discarded upon patient discharge after all medical notes have been transferred to the permanent record. Paper notes should not be taken into the anteroom.
- c. Use protective clothing whenever handling patient (gown, gloves, shoe covers).
- d. Do not remove anything from isolation. All items needed should be there, including a water blanket and IV pump. Please leave your personal items outside the isolation room (this includes lab coat, stethoscope, etc.). If any special supplies are needed, notify the ward technician and assemble prior to entry.
- e. Students are responsible for feeding patients in isolation. Please use the disposable feed pans and discard in the biohazard waste can.
- f. As with all hospital areas, the isolation ward must remain clean and neat at all times. Cages will be cleaned in the morning and again in the afternoon by a veterinary assistant. Patients with diarrhea should be checked frequently for cleanliness.
- g. Remember to mark cage cards with appetite, urinations, clinician's name, phone numbers, etc.
- h. Do not walk animals outside that are housed in isolation. They must use urination pads in their cages to prevent the spread of possible infectious diseases.
- i. Discard used shoe covers and gloves in trash within the ward as you leave the animal ward area and move into the anteroom. Step into the disinfection footbath as you enter the anteroom. Disposable lab coats can be kept and reused for the same patient if donning and doffing will not contaminate the user. When leaving isolation remember to use the footbath.
- j. Animals may not be boarded in isolation; this room is for Good Samaritan patients with an unknown immunization history and for animals with suspected or known infectious disease.

#### 3. Activation of Advanced Isolation Facility (Room B149A Community Practice).

- a. Remove following items from B149A: heartworm tests, conjugate; FeLV/FIV tests, conjugate; preventatives - empty contents of tower into Rubbermaid containers; microchips (HomeAgain, ResQ Avid), scanners; rabies certificate book, tags, hooks; City License Pack (tags, certificates, rings); vaccine refrigerator - move to hallway outside of Treatment Room 1; vaccine reaction box; Strongid, Metacam, Benadryl from medication cabinet; kitten/puppy packs.
- b. Clear counter tops and put cover on computers.



- c. Lock laboratory and office door.
- d. Zip tie cabinets and tape drawers closed.
- e. Stock supplies needed for examinations and treatment.
- f. Post signs (no entry, procedures, disease notice).
- g. Tape off floor of entrance and place red tape X on door to highlight change in room use.
- h. Bring coats, masks, hats, face shields, shoe covers, and table covers to anteroom.
- i. Post login sheet outside of anteroom.
- j. Open blinds to all rooms for the purpose of external patient observation.

**4. Entry, patient care, and exiting Advanced Isolation Facility.**

- a. Review isolation protocol posted near entrance. Enter information on log sheet. Leave all unnecessary items on table or coat hangers outside anteroom door. Step into anteroom.
- b. Use hand sanitizer located on wall or table. Step into footbath in front of isolation room (should cover shoe treads). Put on PPE (gown, shoe covers, gloves, cap, ± mask). You may double glove and place double shoe covers if treating more than one animal and expect to move between patients and animal rooms.
- c. Enter isolation treatment area and set-up needed supplies to examine patient. Enter holding area to examine patient, move to treatment area as needed. Step in footbath before entering and exiting animal ward or treatment area.
- d. Change gloves and put on new gown over existing one between patients and between tasks or procedures that may cause contamination. Between patients and after last patient has been examined, clean any equipment used thoroughly with disinfectant cleaner; allow a 10 minute dwell time.
- e. Leave all trash, bedding, etc. inside isolation area or in red biohazard autoclave bag if available.
- f. Remove gown and gloves, and discard in isolation trash can or hang gown on rack by door if appropriate to reuse.
- g. Enter anteroom by taking 1 shoe cover off and stepping into anteroom footbath, take off the remaining shoe cover and step into the footbath. Use hand sanitizer located on wall before leaving the anteroom. Collect personal items left outside anteroom.

**5. Cleaning while patients are in isolation.**

- a. Clean between patients and at end of day after patients have been evaluated and treated. Patients in isolation are known to be contagious to other animals and/or people; some patients may have zoonotic diseases. To avoid contamination of other hospital areas and patients, personal protective equipment must be worn in this area. All cleaning and other supplies are to be left in the isolation area at all times. Nothing is to be brought into or taken out of isolation unless sterilization of the materials has taken place. The procedure for cleaning isolation is as follows:
  - i. Put on new gown, shoe covers, gloves, ± hat and mask.
  - ii. To clean patient's cage, move patient to a clean cage.
  - iii. Remove organic material and place in biohazard waste can.
  - iv. Spray dirty cage, including top and doors, with disinfectant (allowing proper contact time, 10 minutes).
  - v. Use paper towels to clean all sides and door. Allow to fully dry before replacing animal in the cage.
- b. If cleaning more than one area at a time, wear double gloves and change gloves to decrease contamination.
- c. Empty trash into biohazard waste bag. Spray outside of bag of trash before taking to anteroom.
- d. Empty footbath and refill with appropriate dilution of disinfectant.
- e. Spray, mop, and squeegee floor. Move to other wards if multiple locations are being used.
- f. Change mop water and mop head. Place in red autoclave bag to be taken to sterilization.
- g. Prepare new footbath.
- h. Throw away gown, shoe covers, gloves.
- i. Wash hands and step into footbath before exiting. Exit treatment room to anteroom using standard exiting protocol.

**6. Patient discharge from isolation, regardless of whether standard or advanced isolation facility.**

- a. Complete all owner paperwork and payment before discharge.
- b. Enter isolation using standard protocol.

- c. Unless contraindicated, animals shall be cleaned or bathed as appropriate.
- d. Place cats in disinfected carrier and dogs on covered gurney.
- e. Exit using standard protocol. Maintain PPE and change shoe covers in anteroom. Spray wheels of the gurney with ProVet Logic and allow 10 minutes of dwell time. Bring biohazard waste bag to discard PPE at car-side. Animals should be discharged to their vehicle by transport on a covered gurney.
- f. Depart building by the exit near Physical Therapy and the front handicap ramp. Discard PPE prior to re-entry into hospital area; re-enter by Physical Therapy entrance.
- g. Return to isolation to clean and remove remaining PPE and items to be discarded.
- h. Enter and Exit per standard protocol.

#### **7. Cleaning of Advanced Isolation and Reactivation of Community Practice.**

- a. Enter isolation using established protocol.
- b. Discard disposable items such as thermometer, opened lube container, unpackaged PPE or other opened supplies used during the isolation event. Any item that cannot be wet-sterilized should be sealed in biohazard bags for sterilization or disposal.
- c. Any unused disposable items that have not been contaminated may be restocked in standard isolation. Transfer through the hospital using a clean gurney and PPE covers.
- d. Spray all surfaces with ProVet Logic including ceilings, walls, and all equipment per dilution instruction posted on the isolation door or anteroom. Soak smaller items such as hemostats, bandage scissors, etc. in disinfectant or transfer to sterilization services in the appropriate biohazard container for sterilization.
- e. The advanced isolation facility must remain vacant for 48 hours prior to reactivation. Clean advanced isolation daily during this 48 hour vacancy period. After 48 hours vacancy and completion of the appropriate cleaning protocols, restock community practice as usual.

#### **Large Animal Hospital Isolation Procedures**

Patients suspected of having a contagious infectious disease will be housed in the isolation unit to prevent transmission of the agent to other patients in the hospital. The patients are unloaded from the trailer and walked to the isolation unit. The ground is disinfected where they walk from the trailer to the stall. Personnel handling the patient are dressed in PPE (disposable gown or suit, gloves, and plastic foot covers). Once the patient is admitted, personnel in charge of patient care can enter the isolation stall via the interior hallway door that opens into the anteroom. The anteroom is kept clean and free of contamination. Patients are discharged directly from the isolation stall and placed onto the trailer.

#### **Patient Admission**

1. Patients with clinical signs of contagious respiratory disease such as Strangles, Influenza, Bovine Virus Diarrhea, Infectious Bovine Rhinitis, and Equine Herpesvirus are admitted directly into isolation.
2. Equine patients with clinical signs of diarrhea are admitted directly into the isolation unit.
3. Patients with a known history of Salmonella or Rotavirus are admitted directly into the isolation unit.
4. Horses with clinical signs of acute neurological disease that are possibly infected or confirmed with equine herpesvirus are admitted directly into the isolation unit.
5. Horses suspected or confirmed with equine piroplasmiasis are admitted to the isolation unit.
6. Patient diagnosed with a multi-drug resistant bacteria will be housed in the isolation unit.
7. If an animal is found to have a potential contagious infection while in an exam area of the hospital;
  - a. The animal will be moved to isolation and the area and path will be disinfected.
  - b. The clinician and student will assume their clothing is contaminated and will change clothes. The clothing will be placed in a bag and cleaned appropriately. Personal items such as a stethoscope will be disinfected.
  - c. The hospital technician will be alerted to close the room and area for cleaning.



### 12.4.1 Teaching Hospital

Number of Patient Visits – Total number of times the patient visits the hospital (if Buffy visits the hospital 3 times this year, this would count as 3 visits).

Number Hospitalized – Number of patient that were hospitalized.

Number of Hospital Days – Cumulative days that the total number of patients were hospitalized.

<b>Table A: Teaching Hospital Caseload 2009-10</b>			
<b>Animal Species</b>	<b>No. Patient Visits</b>	<b>No. Hospitalized</b>	<b>No. Hospital Days</b>
Bovine	784	179	541
Canine	12,203	2,477	9,684
Caprine	179	71	528
Equine	1,445	343	1,498
Feline	2,748	398	1,163
Ovine	76	19	103
Porcine	100	71	395
Caged Pet Birds	554	117	495
Caged Pet Mammals	NA	NA	NA
Avian Wildlife	605	266	1,125
Camelids	301	114	368
Other†	1,553	447	11,138
† Combined total for other small and large animals.			

<b>Table A: Teaching Hospital Caseload 2010-11</b>			
<b>Animal Species</b>	<b>No. Patient Visits</b>	<b>No. Hospitalized</b>	<b>No. Hospital Days</b>
Bovine	724	237	677
Canine	12,360	2,332	7,603
Caprine	220	121	624
Equine	1,553	409	2,316
Feline	2,321	365	1,024
Ovine	105	28	130
Porcine	146	109	733
Caged Pet Birds	545	97	1,348
Caged Pet Mammals	NA	NA	NA
Avian Wildlife	654	270	754
Camelids	263	113	585
Other†	1,517	480	3,534
† Combined total for other small and large animals.			

<b>Table A: Teaching Hospital Caseload 2011-12</b>			
<b>Animal Species</b>	<b>No. Patient Visits</b>	<b>No. Hospitalized</b>	<b>No. Hospital Days</b>
Bovine	924	267	943
Canine	13,245	2,434	8,090
Caprine	150	60	334
Equine	1,414	388	3,335
Feline	2,536	389	989
Ovine	99	35	300
Porcine	179	108	563
Caged Pet Birds	569	121	1,064
Caged Pet Mammals	NA	NA	NA
Avian Wildlife	653	274	662
Camelids	220	80	632
Other†	1,698	447	4,338

† Combined total for other small and large animals.

<b>Table A: Teaching Hospital Caseload 2012-13</b>			
<b>Animal Species</b>	<b>No. Patient Visits</b>	<b>No. Hospitalized</b>	<b>No. Hospital Days</b>
Bovine	934	206	1,479
Canine	13,492	2,406	9,201
Caprine	188	72	384
Equine	1,563	392	2,234
Feline	2,451	383	1,685
Ovine	90	22	132
Porcine	122	82	396
Caged Pet Birds	619	108	775
Caged Pet Mammals	NA	NA	NA
Avian Wildlife	660	318	758
Camelids	136	62	577
Other†	1,879	505	4,271

† Combined total for other small and large animals.

<b>Table A: Teaching Hospital Caseload 2013-14</b>			
<b>Animal Species</b>	<b>No. Patient Visits</b>	<b>No. Hospitalized</b>	<b>No. Hospital Days</b>
Bovine	867	198	1,102
Canine	13,377	2,268	6,956
Caprine	188	70	421
Equine	2,273	495	3,895
Feline	2,238	343	1,450
Ovine	96	37	184
Porcine	199	113	847
Caged Pet Birds	709	120	1,919
Caged Pet Mammals	NA	NA	NA
Avian Wildlife	617	285	641
Camelids	194	95	944
Other†	2,066	591	4,257

† Combined total for other small and large animals.

### 12.4.1 Ambulatory/Field Service Program

Number of Farm (site) Calls – Total number of calls/visits made to farm/operation.

Number of Animals Examined/Treated – Number of individual animals examined/treated.

<b>Table B: Ambulatory/Field Service Program (2009-10)</b>		
<b>Animal Species</b>	<b>No. Farm (Site) Calls</b>	<b>No. Animals Examined/Treated</b>
Bovine	222	6,819
Caprine	25	76
Equine	1,005	1,475
Ovine	4	62
Porcine	16	16
Other	84	112

<b>Table B: Ambulatory/Field Service Program (2010-11)</b>		
<b>Animal Species</b>	<b>No. Farm (Site) Calls</b>	<b>No. Animals Examined/Treated</b>
Bovine	210	7,678
Caprine	24	94
Equine	1,200	1,686
Ovine	19	66
Porcine	8	8
Other	85	129

<b>Table B: Ambulatory/Field Service Program (2011-12)</b>		
<b>Animal Species</b>	<b>No. Farm (Site) Calls</b>	<b>No. Animals Examined/Treated</b>
Bovine	273	6,959
Caprine	44	121
Equine	2,215	2,540
Ovine	17	155
Porcine	15	17
Other	106	117

<b>Table B: Ambulatory/Field Service Program (2012-13)</b>		
<b>Animal Species</b>	<b>No. Farm (Site) Calls</b>	<b>No. Animals Examined/Treated</b>
Bovine	371	10,643
Caprine	21	58
Equine	1,836	1,973
Ovine	18	133
Porcine	18	20
Other	102	126

<b>Table B: Ambulatory/Field Service Program (2013-14)</b>		
<b>Animal Species</b>	<b>No. Farm (Site) Calls</b>	<b>No. Animals Examined/Treated</b>
Bovine	458	8,070
Caprine	37	167
Equine	1,885	1,983
Ovine	30	158
Porcine	23	26
Other	106	182

## 12.4.1 Herd/Flock Health Program

<b>Table C1: Herd/Flock Health Program; Institution/State-Owned Animals</b>					
<b>Herd/Flock</b>	<b>Number of Herd/Flock Health Program Sites Provided</b>				
	2009-10	2010-11	2011-12	2012-13	2013-14
Dairy	1	1	2	2	2
Beef Stocker	NSP†	NSP	NSP	NSP	NSP
Cow-Calf	6	6	6	6	6
Small Ruminants	1	1	1	1	1
Swine	1	1	1	1	1
Poultry	NSP	NSP	NSP	NSP	NSP
Fish	NSP	NSP	NSP	NSP	NSP
Equine	2	2	2	2	2
Other	NSP	NSP	NSP	NSP	NSP

† NSP; no sites provided.

<b>Table C2: Herd/Flock Health Program; Privately-Owned Animals</b>					
<b>Herd/Flock</b>	<b>Number of Herd/Flock Health Program Sites Provided</b>				
	2009-10	2010-11	2011-12	2012-13	2013-14
Dairy	1	1	1	1	3
Beef Stocker	NSP†	NSP	2	2	2
Cow-Calf	25	25	25	30	35
Small Ruminants	3	3	3	4	5
Swine‡	12	12	12	14	14
Poultry£	2	2	2	2	2
Fish	NSP	NSP	NSP	NSP	NSP
Equine	NSP	NSP	NSP	NSP	NSP
Other	NSP	NSP	NSP	NSP	NSP

† NSP; no sites provided.  
‡ Privately owned individual 'pet or backyard' pigs, not swine operations.  
£ Privately owned individual 'pet or backyard' birds, not flock operations.

## 12.6.1 Students

Class	2009-10	2010-11	2011-12	2012-13	2013-14
First-year	85	85	95	87	87
Second-year	96	82	85	93	83
Third-year	66	96	82	81	93
Fourth-year†	65	66	96	80	79
No. Graduated	65	66	96	79	79

† UT CVM students only; does not include Ross or St. George's University senior year student enrollment: 2009-10, 8 students; 2010-11, 11 students; 2011-12, 16 students; 2012-13, 22 students; and, 2013-14, 19 students.

SACS†	No. Interns	No. Residents	No. Residents-MS	No. Residents-PhD
2009-10	6	26	0	3
2010-11	6	29	0	4
2011-12	6	23	1	3
2012-13	8	24	1	2
2013-14	8	25	1	0

† Programs include rotating internships in small animal medicine and surgery, specialty internships in Emergency Critical Care and Surgery, and residencies in Anesthesiology and Pain Management, Avian and Exotic Animal Medicine, Cardiology, Dermatology, Diagnostic Imaging, Neurology, Nutrition, Oncology, Ophthalmology, Radiation Oncology, Small Animal Internal Medicine, Small Animal Surgery, and Zoological Medicine.

LACS†	No. Interns	No. Residents	No. Residents-MS	No. Residents-PhD
2009-10	1	6	0	0
2010-11	1	6	0	0
2011-12	1	9	0	0
2012-13	1	8	0	0
2013-14	3	6	0	0

† Programs include rotating internships in large animal and production medicine, focused internships in equine or farm animal field services, and residencies in Large Animal Internal Medicine and Large Animal Surgery.

BDS†	No. Interns	No. Residents	No. Residents-MS	No. Residents-PhD
2009-10	0	7	0	0
2010-11	0	6	0	0
2011-12	0	7	1	0
2012-13	0	8	1	0
2013-14	0	7	1	0

† Programs limited to residencies in Clinical and Anatomic Pathology.

Academic Year	Total	Min†	% Min
2009-10	85	5	5.9
2010-11	85	2	2.3
2011-12	95	4	4.2
2012-13	88	5	5.6
2013-14	85	1	1.2

† Min = minority students, as used in the AAVMC Comparative Data Report. For the purpose of the AAVMC's Comparative Data Report, the 'minority' category refers only to ethnic origin. African-American, Asian, Alaskan Native, Hispanic, Native American, Multi-ethnic individuals, and foreign nationals should be classified under the minority category

Year	Student Enrollment				
	ECFVG Clinical Year	Foreign Seniors†	Veterinary Technician Program‡	Undergraduate Programs	Other£
2009-10	0	8	1	0	11
2010-11	0	11	3	0	11
2011-12	0	16	3	0	15
2012-13	0	22	4	0	20
2013-14	0	19	4	0	17

† Limited to DVM students from Ross University and St. George's University for the senior-year clinical studies only.  
‡ Veterinary Technician Interns, 1 year advanced education for graduate technicians.  
£ Veterinary Technician Externs, 6-week educational experience for undergraduate technicians.

### 12.6.4 Orientation Programs

**Freshman DVM Student Orientation.** Incoming freshman veterinary students are provided a week-long orientation program. The first two days are devoted to an offsite program called the Tennessee Leadership Camp (TLC), patterned after the Veterinary Leadership Experience developed at Washington State. The TLC program has been devised to help incoming students develop an appreciation for the importance of strong interpersonal skills, development of professional relationships, and fostering veterinary leadership. The goals of TLC are (1) to help students recognize and develop an appreciation for different learning formats, (2) to reinforce concepts of emotional intelligence, teamwork, and communication, and (3) to promote peer-to-peer collaboration and reflective thinking as part of their approach to problem solving. These goals are approached through a variety of activities, group discussions, and team-building experiences that serve to help students recognize the importance of and develop proficiencies in key life skills, including non-technical skills such as communication, professionalism, leadership, emotional intelligence, and creativity. For the past five years, rising sophomore students have undergone training and served as small-group facilitators for the TLC program. The use of sophomore students as facilitators has been a very positive addition to the TLC program and, in addition, has yielded clear benefits with regard to improved interactions between the freshman and sophomore classes and a beneficial impact on sophomore students who have served in this capacity. The TLC program is currently being considered for expansion into other areas of the curriculum wherein many of these non-technical skills could be further developed.

On the third day of orientation, parents and family members of students are invited to the college to take tours with the freshman students and to hear and see presentations about the college as part of a mini-vet school and open house event. Students are also given 8-10 presentations from veterinarians regarding career opportunities in veterinary medicine. The session is sponsored and organized by the Office for Academic and Student Affairs and includes the College Alumni Council and Tennessee Veterinary Medical Association (TVMA), who has representatives on hand to speak about the importance and role of organized veterinary medicine at the local, state, and national levels. Days 4-5 of the orientation program includes facilities tours of libraries, classrooms and laboratories, required immunizations, computer training and account signups, obtaining ID badges, sitting for individual photos for class composite pictures, information on loans and financial aid, information on student health insurance, an introductory session on SCAVMA, introduction of freshman-year instructors, and an overview of college policies regarding academic requirements and academic honesty. In addition, students have an opportunity to browse through booths and information tables for all of the student-run clubs and to meet with faculty. In 2014, additional programs included a freshman Survival Workshop focusing on stress management, personal fiscal management, study skills, and knowing when to seek help with disability services. Student panels and small group discussions help provide answers to last minute questions, help prepare students for the following week, and set the leadership framework for their future class governance.

**Senior DVM Student Orientation.** At the end of the junior year in the professional DVM curriculum, students transition into their clinical education clerkships. Prior to entering these clinical clerkships, it is necessary for students to become familiar with important rules and operating procedures that apply to the large and small animal hospitals. A 2-week Transition Studies course includes 2 days of jurisprudence, 2 days of Practice Management, 5 days of foreign animal disease review, Tennessee State Regulations, USDA Accreditation Certification, and 3 days of Clinical Orientation. Students spend a concentrated 3 day period undergoing training related to hospital rules (e.g., dress codes, conduct codes, on-call responsibilities) and hospital procedures (pharmacy, hospital biosecurity protocols, infection isolation procedures and protocols, electronic records training, procedural responses to animal bites or injuries, MRI safety training), departmental policy, and expectations for professionalism. Students review the grading rubric used in clinical pathology and the remainder of the hospital. Beginning April of 2014, clinical skills assessment was initiated with students identifying performance of core and global skills to be assessed by instructors within the clinic. The skills log orientation began with the class of 2015 at their April entry to clinics. In addition, students complete on-line radiation safety training and isolation/biosecurity training. In 2015, all students will complete a practical demonstration of their ability to enter and exit the standard isolation facility using appropriate biosecurity measures identified in the isolation training videos. A celebratory welcome-to-clinics lunch (Scrubbin' In) and presentation of professional scrub tops occurs at the conclusion of orientation to signal the transition of the class to the clinical phase of their education and their final year within the professional curriculum.

## 12.8.1 Loss and Recruitment of Faculty

Table A: Faculty Lost and Recruited; both tenure and non-tenure clinical track/equivalent

Year	Department	Lost	Discipline	Recruited	Discipline
2009-10	Admin	1	Associate Dean		
	BDS	1	Histology	1	Cancer & Immunology Research
	LACS	3	Equine Ambulatory (3)		
	SACS	1	Radiology	2	Neurology, Radiology
	Total Lost	6	Total Recruited	3	

Year	Department	Lost	Discipline	Recruited	Discipline
2010-11	Admin				
	BDS	3	Endocrinology, Epidemiology, Microbiology	2	Epidemiology, Microbiology
	LACS	4	Emergency Medicine, Equine Ambulatory, Equine Medicine, Farm Animal Medicine	3	Equine Ambulatory (2), Equine Medicine
	SACS			3	Behavior Medicine, Dermatology, Radiation Oncology
	Total Lost	7	Total Recruited	8	

Year	Department	Lost	Discipline	Recruited	Discipline
2011-12	Admin				
	BDS	4	Cancer & Alzheimer Research (3), Parasitology		
	LACS	2	Emergency Medicine, Farm Animal Ambulatory	1	Emergency Medicine
	SACS	4	Oncology, Radiology, Surgery (2)	3	Cardiology, Radiology, Theriogenology
	Total Lost	10	Total Recruited	4	

Year	Department	Lost	Discipline	Recruited	Discipline
2012-13	Admin				
	BDS	5	Anatomy, Cancer Research, Histology, Microbiology, Physiology	2	Parasitology, Shelter Medicine
	LACS	1	Farm Animal Medicine	3	Farm Animal Ambulatory, Farm Animal Medicine, Farm Animal Surgery
	SACS	7	Dermatology, General Medicine, Internal Medicine, Neurology, Oncology, Surgery (2)	9	Dentistry, Dermatology, Critical Care Medicine, General Medicine, Integrative Medicine (2), Internal Medicine, Oncology (2)
	Total Lost	13	Total Recruited	14	



Year	Department	Lost	Discipline	Recruited	Discipline
2013-14	Admin	1	Associate Dean	1	Associate Dean
	BDS	4	Clinical Pathology, Laboratory Animal Medicine, Pathology, Public Health	1	Endocrinology
	LACS			1	Emergency Medicine
	SACS	4	Cancer Research, Nutrition, Out-Patient Imaging, Radiology	7	Critical Care Medicine, Emergency Medicine, General Medicine, Oncology, Shelter Medicine, Surgery (2)
	Total Lost	9	Total Recruited	10	

Table A: Summary Faculty Lost and Recruited					
Year	Department	Lost	Discipline	Recruited	Discipline
2009-14	Admin	2	Associate Dean (2)	1	Associate Dean
	BDS	17	Anatomy, Cancer & Alzheimer Research (4), Clinical Pathology, Endocrinology, Epidemiology, Histology (2), Laboratory Animal Medicine, Microbiology (2), Parasitology, Pathology, Public Health, Physiology	6	Cancer & Immunology Research, Endocrinology, Epidemiology, Microbiology, Parasitology, Shelter Medicine
	LACS	10	Emergency Medicine (2), Equine Ambulatory (4), Equine Medicine, Farm Animal Ambulatory, Farm Animal Medicine (2)	8	Emergency Medicine (2), Equine Ambulatory (2), Equine Medicine, Farm Animal Ambulatory, Farm Animal Medicine, Farm Animal Surgery
	SACS	16	Cancer Research, Dermatology, General Medicine, Internal Medicine, Neurology, Nutrition, Oncology (2), Out-Patient Imaging, Radiology (3), Surgery (4)	24	Behavior Medicine, Cardiology, Critical Care Medicine (2), Dentistry, Dermatology (2), Emergency Medicine (2), General Medicine (2), Internal Medicine, Integrative Medicine (2), Neurology, Oncology (3), Radiation Oncology, Radiology, Shelter Medicine, Surgery (2), Theriogenology
	Total Lost	45	Total Recruited	39	

**12.8.1 Staff Support for Teaching and Research**

Table B: Staff FTE for Teaching, Research, and College/Hospital Support			
Support Area	Staff FTE		
	Clerical Support	Technical Support	Other Support
Clinical Teaching	33.1	130.5	1.0
Non-Clinical Teaching	11.2	3.8	1.2
Research	13.6	15.2	4.8
Total	57.9	149.5	7.0

**UT CVM Staff Titles and Classifications as Clerical, Technical, or Other Expertise**

**Clerical Titles**

- Acct Ast I, II, III
- Acct Spec I, II, III
- Adm Ast
- Adm Coord I
- Adm Serv Ast
- Adm Spec I, II, III
- Adm Support Ast II
- Client Serv Ast
- Client Serv Spec I, II
- Commun Coord II
- Counselor
- Dir, Acct Receivable
- Dir, Budget
- Health Info Clk II, Lvl 1, 2
- Health Info Spec II
- Med Adm Ast III
- Mgr, Business
- Patient Accounts Spec
- Patient Representative
- Prgm Adm
- Prgm Resource Spec
- Scheduler II
- Sr Account Clerk
- Sr Budget Clerk
- Sr Word Process Spec
- Student Serv Ast II

**Technical Titles**

- Central Sterile Aide
- Central Sterile Super
- Central Sterile Tech
- Clinical Spec II
- Computer Spec
- Coord I, II, III
- Dir, IACUC
- Dir, Referral Coord
- Dir, Vet Tech
- Emerg Serv Shift Leader
- Farrier
- Histo Tech I
- Info Spec I, II
- IT Adm II, III
- IT Leader
- Lab Anim Ast III
- Lab Anim Tech I, II
- Lab Ast I, II, III
- Lab Section Chief III
- Lab Tech I, II
- Lg Anim Vet Ast II
- Lg Anim Vet Ast Super
- Med Illustrator
- Media Coord
- Mgr, Client Serv
- Mgr, Lab Anim Facilities

- Mgr, Lg Anim Vet Ast
- MRI Tech
- Pharmacist
- Pharmacy Tech
- Physical Therapist
- Producer, Video
- Res Nurse Coord
- Res Spec I, II, III
- Sm Anim Vet Ast II
- Sm Anim Vet Ast Super
- Sr Clinical Spec I
- Sr Computer Spec I
- Sr Histo Tech I
- Sr Lab Tech I, II
- Sr Med Tech I, II
- Sr Vet Ast I
- Sr Vet Tech I, II
- Supervisor, Surgery
- Vet Ast I, II
- Vet Tech I, II

**Other Titles**

- Building, Grounds Serv
- Facility Super II
- Gen Superintendent
- Maint Spec Foreman
- Serv Ast II
- Sr Maint Spec

Only regular employees were considered for **Table B: Staff FTE for Teaching, Research, and College/Hospital Support**. Headcount data on June 30, 2014 showed 223 staff representing 214.4 FTE. Due to complexities in the human resources system as well as large overlapping responsibilities of staff employees, it was estimated that the split of staff support between ‘Non-Clinical Teaching’ and ‘Research’ approximated a 20% effort toward non-clinical teaching and 80% effort toward research endeavors. In addition to these official university recognized staff, the college also employed an additional 14 temporary individuals representing 3.5 FTE who likewise contributed to the teaching, research, and service missions of the college and hospital. The college also has 3 full-time staff assigned from the University of Tennessee Foundation, whose responsibilities focus solely on college advancement through alumni engagement, private gift support, and thoughtful financial stewardship.

**12.8.2 Non-Veterinary and Veterinary Academic Faculty – snapshot data as of June 30, 2014**

Table C: Non-Veterinarians					
Title	MS	PhD	Brd Cert	MS & Brd Cert	PhD & Brd Cert
Administrator					
Prof†		6			
Aso Prof†		6			
Ast Prof†	1‡	3			
Instructor					
Lecturer					
Part-Time Faculty (<0.75 FTE)					
Total	1‡	15	0	0	0
† Includes non-tenure track faculty with clinical and research titles					
‡ Faculty member holds MS, MPH, and Ed D degrees					

Table D: Veterinarians						
Title	DVM (only)	MS	PhD	Brd Cert	MS & Brd Cert	PhD & Brd Cert
Administrator				2	1	2
Prof†			5	5	12	4
Aso Prof†		1	1	4	8	10
Ast Prof†	5	1	2	14	6	5
Instructor	2			1		
Lecturer						
Part-Time Faculty (<0.75 FTE)	2		1	3	3	
Total	9	2	9	29	30	21
† Includes non-tenure track faculty with clinical and research titles						

## 12.8.5 Promotion and Tenure Policy, and Policy to Assure Stability for Non-Tenured, Long-Term Faculty

### Promotion and Tenure Policy

Promotion and tenure nominations are prepared according to directives defined by the:

- Board of Trustees Policies Governing Academic Freedom, Responsibility, and Tenure,
  - [http://policy.tennessee.edu/bot\\_policy/bt0006/](http://policy.tennessee.edu/bot_policy/bt0006/)
- University Faculty Handbook,
  - <http://provost.utk.edu/faculty/manuals/faculty-handbook/>
- University Faculty Evaluation Manual,
  - <http://provost.utk.edu/faculty/manuals/faculty-evaluation-manual/>
- and, College of Veterinary Medicine Faculty Bylaws.
  - <http://www.vet.utk.edu/pdf/Bylaws-20100509.pdf>

The following is a general summary of the promotion and tenure policy.

**General.** Promotion and tenure decisions represent an evaluation by the appropriate Department and College of the nominee's total value to the University and her/his future academic potential as evidenced by her/his past record. Both decisions require consideration of the nominee's performance in fulfillment of assigned duties in teaching, research, service, and extension. Administration, governance, and professional society activities are included under service. Clinical duties in the Veterinary Medical Center generally are included under teaching, but some portion of these may be properly classified as service (e.g., section chief duties).

Tenure nomination for faculty who were recruited at the rank of assistant professor without a prior faculty appointment is ordinarily concurrent with nomination for promotion to the rank of associate professor.

Distinction for promotion or tenure is defined as national or international recognition for significant and original scholarly contributions to one's field and high quality performance in one's major time assignment(s). Evidence of a reputation as a leading expert in the field includes the acknowledged recognition in external letters of evaluation by leaders in the field. Quality performance for research is balanced against time assigned for research and includes publications, research support, and requests for presentations on original research results. Quality performance for teaching includes outcomes of all relevant teaching evaluations, performance of students on dependent topics, and may include some of the following activities: coordination of (1) clinical services and specialties, (2) continuing education courses and publications, or (3) teaching aids and techniques that lead to an enhanced reputation of the College of Veterinary Medicine.

The College falls under the administrative governance of the University of Tennessee Institute of Agriculture (UTIA). Dr. Larry Arrington, UTIA Chancellor and Chief Academic Officer, is the final academic authority in evaluating faculty candidates and in providing a recommendation to the President and subsequently to the Board of Trustees. Several administrative levels of promotion and tenure review occur, each review level is advisory to those levels that follow, and the review order always progresses from department faculty, department head, college committee, dean, chancellor, and president to the board of trustees.

**Criteria for Promotion and Tenure.** Promotion to Assistant Professor requires the same qualifications as appointment to this rank. These criteria include holding a doctorate or other terminal degree, having shown promise as a teacher, evidence of developing a program in an area of research, scholarship, or creative activity that is gaining external recognition, evidence of a developing record of institutional, disciplinary, and/or professional service, and having shown evidence that s/he works well with colleagues and students in performing professional responsibilities.

Promotion to Associate Professor requires demonstration of the same recognition required for appointment to this rank. Candidates are expected to hold a doctorate or other terminal degree of the discipline, be good teachers, have achieved and be expected to maintain a record in disciplinary research, scholarship, or creative activity, have achieved and be expected to maintain a record of institutional, disciplinary, and/or professional service, have served as an assistant professor for five years, and have demonstrated s/he works well with colleagues and students in performing her/his university responsibilities. Tenure will be recommended only if the candidate is of high quality, as judged competitively from a national perspective. Nominations for promotion and tenure before the conclusion of the five-year period normally required for an assistant professor is considered rare. Early nomination for promotion and tenure requires demonstration of qualifications and performance equivalent to that required of candidates in similar positions for five years.

Promotion to Professor requires demonstration of the same recognition required for appointment to this rank. Candidates must hold a doctorate or other terminal degree of the discipline, be accomplished teachers, have achieved and be expected to maintain a nationally recognized record in disciplinary research, scholarship, or creative activity, have achieved and be expected to maintain a record of significant institutional, disciplinary, and/or professional service, serve as mentors to junior colleagues, have normally served as an associate professor for at least five years, and have demonstrated beyond doubt that s/he works well with colleagues and students in performing her/his university responsibilities.

Distinguished Professor is awarded only on recommendation of the dean and requires a distinguished and exceptional record of achievement beyond the level of professor in one or more of the areas of teaching, research, and professional and public service.

Policies concerning promotion and tenure at the University of Tennessee are available at the Provost's website (<http://provost.utk.edu/faculty/>). In addition, our college provides Promotion and Tenure Guidelines documents on our secure college website (<https://vetmed.tennessee.edu/VetNet/StaffAndFacultyInfo/SitePages/Home.aspx>).

### **Policy to Assure Stability for Non-Tenured, Long-Term Faculty**

**General.** Departments may make research and clinical track faculty appointments when programmatic needs can best be met by appointing persons whose responsibilities would make appointment to the tenure track inappropriate. The faculty of the College of Veterinary Medicine recognize the vital contributions these faculty members make to the College mission, and is committed to a full partnership to the extent that university policies permit. This partnership includes mechanisms for promotion and career advancement, and includes voting privileges in all college concerns except those related to tenure. In addition to evaluation in the traditional areas of research, teaching, and service, criteria for promotion of research and clinical track faculty must take into account the unique job descriptions of these faculty members and allow for evaluation and recognition of the candidate's contributions to the college and profession in the area of academic excellence. Non-tenure accrual faculty at the assistant professor level are provided annual employment contracts, associate-level faculty are provided 3-year renewable employment contracts, and professor-level faculty are provided 5-year renewable employment contracts.

**Criteria for Promotion.** Promotion of faculty in non-tenure accruing titles of Research or Clinical appointed positions require demonstration of the same national or international recognition for scholarship or expertise in the appointed area as for appointment at the comparable Associate Professor or Professor levels. For research positions, productivity is evidenced by authorship or co-authorship of significant publications in the candidate's field and evidence of a significant role in the acquisition of substantial external financial research support in the form of grants or contracts. For clinical positions, productivity is evidenced by documented impact on the candidate's area of clinical specialty, innovation in techniques of clinical care, and demand for clinical service.

## 12.9.6 Curriculum Digest

### Freshman-Year Professional Curriculum Outline: All courses required of all students

First Year - Fall Semester			First Year – Spring Semester		
Course No.	Title	Credits	Course No.	Title	Credits
VMD 801	Application Based Learning Exercise I	1	VMD 802	Application Based Learning Exercise II	2
VMD 811	Infection & Immunity II (Bact/Mycology)	3	VMD 815	Infection & Immunity III (Virology)	2
VMD 813	Infection & Immunity I (Immunology)	2	VMD 816	Clinical Correlations & Ethics	2
VMD 814	Clinical Correlations & Ethics	1	VMD 822	Veterinary Anatomy II	4
VMD 821	Veterinary Anatomy I	4	VMD 824	Physiology II	4
VMD 823	Physiology I	4	VMD 826	Veterinary Microscopic Anatomy II	2
VMD 825	Veterinary Microscopic Anatomy I	2	VMD 833	Epidemiology & Evidence-Based Medicine	2
VMD 831	Physical Diagnosis	1	VMD 873	Infection & Immunity IV (Parasitology)	3

### Freshman-Year Course Descriptions

- VMD 801 Application Based Learning Exercise (ABLE) I.** ABLEs are Application Based Learning Exercises, where students work together in small groups and follow through a simulated case, using problem-based learning techniques. They receive sequential information from a facilitator and come up with learning issues, facts, mechanisms and problems throughout the week trying to try to solve the diagnostic case. There is an expectation to integrate basic science and clinical material. *Grading Restriction: Satisfactory/No Credit grading only.*
- VMD 802 Application Based Learning Exercise (ABLE) II.** ABLEs are Application Based Learning Exercises, where students work together in small groups and follow through a simulated case, using problem-based learning techniques. They receive sequential information from a facilitator and come up with learning issues, facts, mechanisms and problems throughout the week trying to try to solve the diagnostic case. There is an expectation to integrate basic science and clinical material. *Grading Restriction: Satisfactory/No Credit grading only.*
- VMD 811 Infection and Immunity II – Bacteriology and Mycology.** The course covers fundamental aspects of microbiology and cell biology relative to pathogenesis of bacterial and fungal diseases of animals, including antimicrobial actions and mechanisms of bacterial resistance. The course introduces students to a broad array of bacterial and fungal taxa with emphasis on general approaches to diagnosis, treatment and prevention of diseases.
- VMD 813 Infection and Immunity I – Immunology.** This course provides an overview of the immune system of mammals. The first part of the course discusses the basics of immunology. There is a focus on the development and function of lymphocytes, the crux of the specific immune response. Immune effector mechanisms, both specific and nonspecific are covered. The second part of the course focuses on clinical applications of immunology, including immune-mediated diseases, immunodeficiencies, immunity to infection, diagnostic testing, and vaccines.
- VMD 814 Clinical Correlations and Ethics I.** Correlations between basic science material from concurrent courses and practice of veterinary medicine. Thoughts on wide spectrum of current veterinary ethical issues are discussed.
- VMD 815 Infection and Immunity III – Virology.** This course provides an overview of viruses of veterinary importance. Areas covered include viral terminology, how viruses spread and replicate, how they cause disease, and how they are controlled. General concepts as well as individual virus families are included. The goal of this course is to develop a working knowledge of viruses in order to make sense of immunology, pathology, diagnostics, therapeutics, epidemiology and epizootiology, preventive medicine and control. This course enhances the understanding of the role of viruses in veterinary and human medicine, including common diseases, foreign diseases, and zoonoses.
- VMD 816 Clinical Correlations and Ethics II.** The objective of this class is to provide pertinent clinical information to enhance the learning of the material being covered in the other courses being concurrently studied by the freshman veterinary students such as anatomy, virology, parasitology, and physiology. Visiting lecturers provide information about clinical cases, situations, or topics. Most classes are interactive and student input is encouraged.
- VMD 821 Veterinary Anatomy I.** Lectures, laboratories, and demonstrations are used in an integrated approach to the study of macroscopic (gross) clinically relevant anatomy, including neuroanatomy, and embryology of common domestic animals. Dissections of embalmed specimens, prosections, plastinated specimens, and radiographs of common domestic species (canine and feline) are examined for comparative purposes.
- VMD 822 Veterinary Anatomy II.** Lectures, laboratories, and demonstrations are used in an integrated approach to the study of macroscopic (gross) clinically relevant anatomy, including neuroanatomy, and embryology of common

- domestic animals. Dissections of embalmed specimens, prosections, plastinated specimens, and radiographs of common domestic species (equine, bovine, ovine, caprine and porcine) are examined for comparative purposes.
- VMD 823 Physiology I.** Introduction to concepts and problems in veterinary physiology which form the basis for clinical applications and for formal training in pharmacology, medicine, pathology, and surgery. The first semester of physiology includes basic cell physiology, body fluid compartments, basic neurophysiology, the autonomic nervous system, cardiovascular physiology, the physiology of blood and respiratory physiology. The course also includes six in-class demonstrations that support and emphasize the practical and or experimental importance of topics covered in lecture.
- VMD 824 Physiology II.** Introduction to concepts and problems in veterinary physiology which form the basis for clinical applications and for formal training in pharmacology, medicine, pathology, and surgery. The second semester of physiology includes gastrointestinal physiology, basic endocrinology, reproductive physiology, renal physiology and advanced neurophysiology (posture, movement and special senses). The course also includes four in-class demonstrations that support and emphasize the practical and or experimental importance of topics covered in lecture.
- VMD 825 Veterinary Microscopic Anatomy I.** This course uses a combination of lectures and laboratories to teach embryology and the microscopic anatomy (histology) of organ systems in common domestic animals. The relationships of the structures to their functions are highlighted. This courses focuses on the basic components of all organ systems (epithelia, connective tissue, muscle etc.).
- VMD 826 Veterinary Microscopic Anatomy II.** This course uses a combination of lectures and laboratories to teach the microscopic anatomy (histology) of organ systems in common domestic animals. The relationships of the structures to their functions are highlighted. This course focuses on how the basic components from Microscopic Anatomy I (VM825) combine to form specific organ systems (gastrointestinal tract, urinary tract, special senses etc.).
- VMD 831 Physical Diagnosis.** Physical Diagnosis presents information about basic animal restraint, safe interaction with common pet and livestock species, physical examination techniques, administration of medications, specimen collection and breed differentiation as used by veterinarians.
- VMD 833 Epidemiology and Evidence-Based Medicine.** This course provides an overview of epidemiological concepts necessary to practice evidence-based medicine. The course covers basic concepts of infectious disease epidemiology, disease causation, epidemiological study designs and concepts necessary to understand the usefulness of diagnostic tests and effectiveness of clinical therapies.
- VMD 873 Infection and Immunity IV – Parasitology.** Principles of parasitology: protozoology, helminthology, and entomology and relationship to diseases in animals.

### Sophomore-Year Professional Curriculum Outline: All courses required for all students

Second Year - Fall Semester			Second Year – Spring Semester†		
Course No.	Title	Credits	Course No.	Title	Credits
VMD 804	ABLEs/Clinical Exposure I	2	VMD 805	ABLEs/Clinical Exposure II	2
VMD 832	Anesthesiology	2	VMD 837	Zoonoses/Food Hygiene	2
VMD 835	Principles & Practice of Surgery	2	VMD 842	Alimentary System	4
VMD 836	Toxicology	2	VMD 845	Veterinary Nutrition	2
VMD 851	Urinary System	3	VMD 853	Endocrine System	2
VMD 861	Pharmacology I	2	VMD 856	Ophthalmology	2
VMD 871	General Pathology	3	VMD 857	Nervous System	3
VMD 888	Clinical Pathology	3	VMD 862	Pharmacology II	2
			† Elective I 1-2 semester credits		

### Sophomore-Year Course Descriptions

- VMD 804 ABLE and Clinical Exposure I.** ABLEs are Application Based Learning Exercises, where students work together in small groups and follow through a simulated case, using problem-based learning techniques. They receive sequential information from a facilitator and come up with learning issues, facts, mechanisms and problems throughout the week trying to try to solve the diagnostic case. There is an expectation to integrate basic science and clinical material. *Grading Restriction: Satisfactory/No Credit grading only.*
- VMD 805 ABLE and Clinical Exposure II.** ABLEs are Application Based Learning Exercises, where students work together in small groups and follow through a simulated case, using problem-based learning techniques. They receive sequential information from a facilitator and come up with learning issues, facts, mechanisms and problems throughout the week trying to try to solve the diagnostic case. There is an expectation to integrate basic science and clinical material. *Grading Restriction: Satisfactory/No Credit grading only.*

- VMD 832 Anesthesiology.** This is a core course within the veterinary curriculum to teach the basic principles of veterinary anesthesia. This course introduces students to the art and science of veterinary anesthesia, teaches the basic pharmacokinetics and pharmacodynamics of anesthetic drugs and common indications and contra-indications for their use, teaches the basic structure and function of anesthetic machines, circuits, and monitoring equipment, teaches the importance of adequate monitoring and support of patients under anesthesia and the skills required to monitor and support anesthetized patients, and introduces the concepts of pain recognition and various methods to provide analgesia.
- VMD 835 Principles and Practice of Surgery.** Principles of veterinary surgery: aseptic technique, patient and surgeon preparation, control of surgical hemorrhage and infection, and general operating room procedures. Proper methods of tissue handling, surgical instrumentation, and selection of suture materials and suturing patterns. Pathophysiology of surgical and accidental wounds; wound healing and management.
- VMD 836 Toxicology.** Principles of toxicology, molecular mechanisms, pathologic processes and clinical features of animal diseases caused by common toxic agents.
- VMD 837 Food Hygiene and Zoonoses.** This course focuses on the role veterinarians play in public health. Topics covered include food inspection, safety and security of milk, eggs, poultry, meat and seafood, as well as food borne zoonoses. Animal bites and the epidemiology of zoonoses associated with domestic and wild animals are also discussed.
- VMD 842 Alimentary System.** This course integrates basic concepts that have been learned in parasitology, clinical pharmacology, gastrointestinal physiology, anatomy, and clinical pathology with the basic concepts of clinical medicine and surgery related to the alimentary system. Students develop an understanding of the clinical signs, pathophysiology, diagnosis, and management of common gastrointestinal diseases affecting companion animals and food-producing animals. An introduction to basic surgical techniques is taught.
- VMD 845 Veterinary Nutrition.** Principles of nutrition, and nutrition of animals in health and disease. Applied nutrition relating to individual small or large animal patients or to herd situations.
- VMD 851 Urinary System.** The overall objective of this course is to provide students the basic pathophysiologic mechanisms, clinical signs, treatment and prognosis of urinary disease in small and large animals. With this information, students should be able to recognize and logically work through small and large animal clinic cases and generate a list of differential diagnoses, management plan, and indicate a prognosis. The course is taught by clinical faculty that are specialists in the topics that they teach. The topics are divided into sections that include a review of urinary physiology, introduction to diuretics, upper and lower urinary tract diseases of small animals, surgical procedures of the urinary tract in small animals, upper and lower urinary tract diseases of large animals, surgical procedures in large animals, and pathology of the urinary system.
- VMD 853 Endocrine System.** This course is designed to help students gain a thorough understanding of the pathophysiology, diagnosis and treatment of endocrine and related metabolic disorders in small and large animals. Students will learn to integrate the history and physical examination in assessing the likelihood of differing diseases, understand and apply the principles of endocrine testing to successfully diagnose and manage endocrine diseases; and develop problem-solving skills based on historic findings, physical abnormalities and clinicopathological findings. Material will be provided through slides/lecture presentations and case-based laboratories.
- VMD 856 Special Senses.** This course includes both lecture and laboratory sessions to study ocular disease in domestic animals. Ocular diagnostic methods as well as medical and surgical therapies for a variety of eye diseases are described. The entire eye, from eyelids to retina, is covered. Most of the course focuses on the dog, but some lectures on the cat and large animals are also included.
- VMD 857 Nervous System.** Pathophysiology, special pathology, medicine and surgery of diseases of nervous system in small and large animals: clinical neurology and neuropathology.
- VMD 861 Pharmacology I.** Principles of pharmacokinetics and pharmacodynamic properties of veterinary drugs; mode of action and pharmacologic effects including important metabolic aspects, chemical and physical properties, side effects (toxicities) and clinical application.
- VMD 862 Pharmacology II.** Continuation of 861: modes of action, pharmacologic effects, and clinical application of drugs to control specific disease conditions.
- VMD 871 General Pathology.** This course includes lectures that explain and give examples of the underlying mechanisms common to most diseases, such as reversible and irreversible cell injury, mineralization, pigments, protein misfolding, circulatory disturbances, inflammation, neoplasia, and genetic diseases. There are laboratories that use microscope slides, virtual microscope slides, and gross specimens to help students to understand, recognize, describe, and interpret the lesions associated with these processes.
- VMD 888 Clinical Pathology.** The main objective of this course is to enable students to interpret routine laboratory data – to make logical deductions regarding the results of a complete blood count, coagulation profile, serum or plasma



biochemistry, and urinalysis in pursuit of the diagnosis of disease in common domestic species. Achieving this objective will require students to learn terminology and facts, and *develop clinical reasoning skills*.

### Junior-Year Professional Curriculum Outline: All courses required for all students

Third Year - Fall Semester			Third Year – Spring Semester†		
Course No.	Title	Credits	Course No.	Title	Credits
VMD 806	ABLEs/Clinical Exposure III	2	VMD 840	Integumentary System	3
VMD 841	Reproductive System	3	VMD 843	Musculoskeletal System I (Sm Anim)	3
VMD 846	Multispecies Medicine	3	VMD 844	Musculoskeletal System II (Lg Anim)	3
VMD 852	Cardiovascular System	2	VMD 864	Infectious Diseases	2
VMD 854	Respiratory System	3	VMD 874	Oncology	2
VMD 855	Radiology	3	VMD 890	Transition & Accreditation Seminars	2
VMD 868	Introduction to Animal Behavior	2			
† Elective II 1-2 semester credits			† Electives III & IV 2-6 semester credits		

### Junior-Year Course Descriptions

- VMD 806** **ABLE and Clinical Exposure III.** ABLEs are Application Based Learning Exercises, where students work together in small groups and follow through a simulated case, using problem-based learning techniques. They receive sequential information from a facilitator and come up with learning issues, facts, mechanisms and problems throughout the week trying to try to solve the diagnostic case. There is an expectation to integrate basic science and clinical material. *Grading Restriction: Satisfactory/No Credit grading only.*
- VMD 840** **Integumentary System.** This course covers dermatological diseases of animals including pathomechanisms of disease, diagnostic approach, and treatment. Laboratories consist of both hands-on and case discussion formats. Most of the course focuses on dogs and cats; however, several lectures are dedicated to equine and farm animal dermatoses.
- VMD 841** **Reproductive System.** Pathogenesis, diagnosis, pathology, medical and surgical treatment, prevention of, and relevance to production of diseases of the male and female reproductive systems are discussed. All domestic species including bovine, equine, ovine, caprine, porcine, canine and feline are included.
- VMD 843** **Musculoskeletal System I.** Pathophysiology, clinical description and basic treatment modalities of common diseases and conditions of skeletal system of small animals: development of basic diagnostic and treatment skills.
- VMD 844** **Musculoskeletal System II.** This course is designed to provide students basic information related to the diagnosis, treatment and management of common musculoskeletal problems encountered in large animals. It is not the intent to cover all conditions but instead to provide a basic understanding of function related to the musculoskeletal system and the veterinarians' role in care of functional abnormalities. In order to recognize the abnormal, one must have an appreciation for the normal. This information will be provided through videotapes, slide/lecture presentations, and through hands-on laboratory participation.
- VMD 846** **Multispecies Medicine.** This course covers the anatomy, pathophysiology, medicine, and surgery of avian species, laboratory and zoo animals, and reptiles. Species and diseases seen by practicing veterinarians is a focused area of the course. Current topics on foreign animal diseases are also discussed.
- VMD 852** **Cardiovascular System.** Covers the principles of cardiac diseases (physiology, pathology) to give a basis for understanding specific cardiac disorders. The course includes lectures on cardiac diseases and their recognition and treatment. It also includes laboratories, which include case studies, hands-on examination of horses and clinical patients with heart diseases, heartworm diagnostic lab, and pathology lab with heart specimens. The goal is to teach students to be able to recognize, diagnose, and treat common cardiac problems in veterinary patients.
- VMD 854** **Respiratory System.** This course provides information on the pathophysiology, pathology, diagnosis and treatment of respiratory diseases in small animal, equine, and food and fiber animal species. Students will develop knowledge and the diagnostic skills necessary to identify the respiratory system as a potential cause of a patient's symptoms, to use physical and other forms of diagnosis to localize the problem to a particular portion of the respiratory system, to develop a problem list and subsequent list of differential diagnoses, to logically arrive at a definitive diagnosis and to have a basic understanding of treatment and supportive care for patients with respiratory disease. The student will learn to relate pathologic changes to the physiology and clinical diagnosis and treatment of respiratory diseases.
- VMD 855** **Radiology.** The initial portion of the course gives an overview of the basic principles and physics of diagnostic radiology. The remaining majority of the course focuses on development of skills necessary for interpretation of radiographs of veterinary patients using the roentgen sign approach through lectures, autotutorials, and lab exercises. The course is divided into sections on diagnostic radiology physics and radiation safety, small animal

orthopedic radiology, large animal orthopedic radiology, neuroradiology, thoracic radiology, cardiac radiology, general abdominal radiology, radiology of the gastrointestinal tract, and urogenital radiology. The goal of the course is to develop entry-level skills in diagnosis of clinically relevant problems using radiographs. The course assumes a basic knowledge of normal radiographic anatomy.

- VMD 864 Infectious Diseases.** This course covers some of the major infectious diseases of domestic animals. Pathogens include viruses, bacteria, and fungi. The first part of the course covers diseases of dogs and cats, the second part covers equine diseases, third part covers food animal diseases, and the last section covers a few diseases of exotic animals. The topics are covered on a systems basis, e.g. diseases of feline upper respiratory tract, etc. The emphasis is on pathogenesis of each organism. Discussions include nature of the agent, clinical signs, diagnosis, treatment, and epidemiology and control.
- VMD 868 Introduction to Animal Behavior.** This course is a discussion of normal and abnormal behaviors in domestic animals. Behavior modification, psychoactive medication, and non-pharmaceutical behavioral therapeutics in cats, dogs, and horses are heavily emphasized through lectures, laboratories, and case discussions. Species-specific behavior problems and the role of behavior in assessing animal welfare are discussed.
- VMD 874 Oncology.** This course provides information about diagnosis and staging of common cancers in veterinary patients. Gives an overview of treatment options and general prognosis for patients with these cancers.
- VMD 890 Transition and Accreditation Seminars.** Discussion of USDA, state, and local animal laws and regulations: preparation of animal movement forms, veterinary ethics, jurisprudence, basic practice management, and other topics involved in practice of veterinary medicine.

### Curriculum Electives

- VMD 830 Swine Medicine Production.** 2-6 credits. Clinical education in swine production medicine at the Swine Medical Education Center at Iowa State University. This clerkship occurs in an on-farm setting and covers swine production, management, consultation, pharmacology, and PRRSV diagnosis and management.
- VMD 848 Bovine Production Medicine.** 2 credits. The course teaches techniques and procedures used by veterinarians in modern dairy and beef cattle production practice. Class includes travel and overnight stay at various production facilities. Course work includes data analysis and use of common reproductive and productivity software. Students participate in developing productivity plans, disease surveillance, and herd health maintenance programs.
- VMD 849 Beef Cow-Calf Summer Institute Elective.** 2 credits. An intensive two-week field experience in production management of beef cow-calf operation in partnership with Virginia-Maryland Regional College of Veterinary Medicine. Content focuses on the beef cattle industry, beef production, herd health reproductive performance, genetics, financial management, and critical thinking skills.
- VMD 867 Clinical Microbiology Laboratory.** 1 or 2 credits. This course is tailored to meet individual students wanting advanced exposure to techniques and procedures of modern microbiology. Areas of study can involve bacteriology, mycology, virology, and/or immunology. Independent and directed work totaling 2-4 hours per week will be required.
- VMD 867 Issues & Opportunities in Shelter Medicine.** 1 credit. Lectures and discussions on topics related to animal sheltering, geared towards helping the student understand and be able to become involved in animal shelter medicine in his or her community upon graduation. The student is expected to participate in at least 9 hours of clinical exposure at Young Williams Animal Center including: Dog Adoption Floor Screening, Community Spay/Neuter Programs, Animal Intake - Lost & Found, Animal Adoptions, Animal Control, and Veterinary Clinic.
- VMD 867 Responsible Pet Ownership.** 1 credit. This course provides veterinary students with a knowledge base and access to resource materials which will allow them to prepare and implement public education programs on various aspects of responsible pet ownership. Two of the purposes of this course are to: 1) provide the community with high quality programs on responsible pet ownership and 2) to provide an opportunity for veterinary students to further develop their communication skills.
- VMD 867 Skeletal Modeling Course.** 1 credit. The purpose of the course is to build in the veterinary medical student a mental repository of 3D perspectives of skeletal anatomy for use in the interpretation of diagnostic images, as well as for use in the execution of certain surgical procedures. Students are provided an experiential-based set of exercises in the sculpturing and modeling of selected bones in clay.
- VMD 867 Supplemental Topics in Veterinary Anatomy.** 2 credits. Topics covered in this course include normal canine radiographic anatomy, gross anatomy of exotic species, feline gross anatomy, feline spay/neuter/declaw and teratology. Exotic species which will be dissected include the snake, turtle, rabbit, pigeon and ferret. Preserved portions of many other exotics will also be studied during laboratory sessions.

- VMD 877 Advanced Ophthalmic Pathology.** 1 credit. This elective demonstrates and correlates the clinical, gross, and histologic findings of various common ophthalmic conditions. The specific cases can be targeted to species interests of the enrolled students (i.e. emphasis on large, small or exotic animals). Clinical and gross images as well as histology slides are made available for review and then discussed in detail during the sessions. This course is targeted to students with a strong interest in either ophthalmology or pathology.
- VMD 877 Diagnostic Cytology.** 2 credits. This course is constructed to provide students an opportunity to develop skills as diagnostic cytopathologists.
- VMD 877 Surgical Pathology.** 1 credit. This course introduces students to surgical pathology. Surgical biopsy specimens submitted from UTCVM and outside practitioners are examined and discussed with a pathologist. Students are taught to describe, diagnose, and review the literature regarding selected cases.
- VMD 879 Advanced Swine Production Medicine.** 1 credit. This is a facilitated on-line course. There are 14 core modules covering swine production medicine produced and taught by Iowa State University faculty of the Swine Medicine Educational Center in collaboration with the UT CVM. In addition, 20 short videos provide students first-hand experience of sow farms, boar studs, nursery facilities, and best practices in modern swine production.
- VMD 887 Advanced Diagnostic Imaging.** 2 credits. This course is designed to introduce students to imaging modalities and procedures not covered in the VMD 855 Radiology and provides an introduction to CT, MR, and nuclear imaging. The course delivers basic understandings of the principles of imaging, knowledge of the commonly performed procedures and their advantages and limitations, and educates students regarding when it is appropriate to request these advanced imaging studies.
- VMD 887 Advanced Small Animal Clinical Nutrition.** 1 credit. This course provides in-depth discussion of nutritional management of common medical disorders, assisted feeding techniques, and formulation of homemade diets for dogs and cats. There are 2 laboratories: the first provides hands-on experience formulating diets using computer software and the second focuses in techniques for placing feeding nasal, esophageal and gastric feeding tubes.
- VMD 887 Advanced Small Animal Orthopedics.** 2 credits. This course exposes students to basic small animal surgical orthopedics. The laboratory exercises include stifle and hip surgery, and fracture stabilization techniques using plates, external fixation splints, and pins. All exercises involve cadaver specimens with emphasis on surgical anatomy and proper use of orthopedic instruments and implants.
- VMD 887 Advanced Soft Tissue Surgery.** 1 credit. This course presents a variety of soft tissue surgery topics and procedures commonly performed on dogs and cats by private practitioners. Two non-survival surgical laboratories focus on the abdominal cavity, including intestinal, liver, and kidney biopsies; gastropexy; cystotomy; and other common procedures. Three or four cadaver laboratories focus on perineal, head, neck, and skin procedures, including urethrostomies, ear canal resections, skin flaps, anal saccullectomies, esophageal feeding tubes, and perineal hernia repair.
- VMD 887 Aquatic Animal Health.** 1 credit. This elective introduces important and common diseases of aquatic invertebrates, fresh and marine water fish, aquatic birds, and marine mammals. The course, which includes a field trip to Ripley's Aquarium of the Smokies, emphasizes husbandry aspects as they pertain to normal health and specific disease processes in aquatic animals.
- VMD 887 Feline Medicine.** 1 credit. This elective covers multiple aspects of feline medicine to a greater degree than is presented in the core curriculum. Topics covered include: internal medicine (infectious disease, endocrine disorders, respiratory disease etc.), cardiology, ophthalmology, nutrition, dermatology, analgesia and anesthesia, soft tissue and orthopedic surgery, oncology, diagnostic imaging as well as special considerations of exotic felids.
- VMD 887 Mindfulness in Veterinary Medicine.** 1 credit. This course teaches the basic principles, skills, and research regarding mindfulness practice in veterinary medicine. Students read and present salient research articles about the human effects of stress and attend experiential lab sessions where mindfulness techniques are practiced. The objective of this elective is to train veterinary students in mindfulness techniques for stress management as well as for maintaining excellent practice in veterinary medicine.
- VMD 887 Pain Management.** 1 credit. This elective explores clinical pain and pain management with emphasis on typical veterinary clinical problems. Fundamentals of nociception and comparative algology underlie the focus on clinical pain relief. Nociceptive pain, procedural pain, postoperative pain, maladaptive pain, chronic pain, cancer pain, and related syndromes are addressed. Case scenarios and practical examples serve to reinforce the principles of pain management, including preemptive analgesia, balanced analgesia, and recognition of varying patient needs. We will discuss typical and atypical uses of the principle classes of analgesics including NSAIDs, opioids, and local anesthetics, as well as adjunctive medications and non-drug methods of providing pain relief. A cadaver lab session provides for hands-on practice with regional and local techniques.
- VMD 887 Practice Management.** 1 credit. To prepare new veterinarians for the business of their practice. Five primary focuses of the course are: What is going on in the veterinarian industry? What are the important decisions about working as an associate veterinarian? What are the major decisions about buying into an existing practice? What

are the critical decisions about starting a new practice from scratch? What tools can a veterinarian use to make the above decisions?

- VMD 887 Seminars in Zoological Medicine.** 1 credit. This course covers advanced topics including conservation, medicine and surgery of captive and free-ranging reptiles and amphibians, with an emphasis on common species.
- VMD 887 Small Animal Clinical Practice Preceptorship.** 2-8 credits. A 2-8 week structured preceptorship under the direction of approved small animal practices. Practice mentors provide an externship/preceptorship to rising junior-year students. The course develops student skills in history acquisition, physical examination, critical thinking, and problem-solving at the level appropriate to their training. Students are required to log cases daily and complete an assigned workbook, later reviewing with their mentor in case rounds and workbook review. This allows a significant level of self-determined learning of new case content. The workbook content is based off of chapter content from Ettinger's Textbook of Internal Medicine.
- VMD 887 Small Animal Dental Education.** 1 credit. This course is an intensive study of modern dentistry techniques for dogs and cats. Each module stresses the importance of a thorough knowledge of canine and feline dental and parodontal anatomy in the recognition and treatment of dental problems in dogs and cats. Clinical applications of anatomic information are utilized to reinforce important concepts. Specific topics feature dental pathology, radiology, extractions, and periodontal disease.
- VMD 887 Small Animal Emergency And Critical Care Elective.** 1 credit. This elective provides specific topics related to small animal emergency and critical care. The topics include, Triage of the critically ill animal, Cardiopulmonary resuscitation, Transfusion Medicine, Acid/Base Abnormalities and Math for the Emergency Veterinarian. There is also a 3 hour lab focused on common ECC procedures including central lines, nasogastric and esophageal feeding tubes, urinary catheters and thoracostomy tubes.
- VMD 887 Small Animal Surgery, Spay/Neuter Clinic.** 1 credit. This course has major emphasis on students gaining 'hands on' experience in small animal surgery. Dogs and cats from a variety of humane animal shelters are brought to the Surgery Teaching Facility once weekly for a sterilization procedure. The student acts in the capacity of a primary surgeon approximately 50% of the time. The remaining time is spent assisting classmates with surgery and anesthesia.
- VMD 887 Small Animal Ultrasound.** 1 credit. The course introduces students to basic diagnostic ultrasound imaging and common sonographic findings in a variety of diseases of small animals. Students acquire a basic knowledge of how diagnostic ultrasound is used in examination of the canine and feline heart and abdomen. Hands on labs introduce the students to basic operation of a diagnostic ultrasound scanner using phantoms and live dogs. Students should be able to locate and identify the major structures of the heart and major organs of the abdomen in the normal dog at the end of the course. Students will be able to interpret normal and entry-level abnormal ultrasound images of the more common diseases of the small animal heart and abdomen.
- VMD 889 Equine Performance Medicine and Rehabilitation.** 2-3 credits. Clinical education in Equine Performance Medicine and Rehabilitation (EPR), including lameness diagnosis, advanced orthopedic surgery, podiatry and rehabilitation of the equine.
- VMD 897 Advanced Companion Exotic Animal Medicine.** 1 credit. This class integrates information learned in VMD 846 Multispecies Medicine and applies it to clinical cases. The class consists of case presentations, radiographic presentations, lectures, and laboratories.
- VMD 897 Camelid.** 1 credit. The goal of this course is to familiarize students with camelid handling, management, and their most common medical problems.
- VMD 897 Case Discussion in Equine Internal Medicine.** 1 credit. This course: 1) incorporate information from other courses into discussions of equine internal medicine cases; 2) encourage the development of effective problem-solving skills by forcing students to make decisions regarding the management of cases; 3) provide instruction in areas of equine internal medicine that are only briefly discussed in other courses.
- VMD 897 Cultural Influences on Animal Health Care.** 1 credit. This elective introduces students to cultural differences that impact the receptiveness of pet owners to veterinary medical care. The course includes seminars, field experiences, and class reading assignments. The elective explores various cultures and groups, including underserved populations (elderly, homeless, disabled, low income) and cultures (Native American, Appalachian, Latino, and African American). In addition, students learn about animal perspectives of several religions and veterinary care for animals of military families. Students attend a wellness event for pets of homeless people as part of the elective.
- VMD 897 Equine Dentistry.** 1 credit. This elective is designed to improve student knowledge in dental hygiene and disease in horses. It consists of a mixture of lectures and labs.
- VMD 897 Equine Special Topics.** 1 credit. This elective is a series of lectures highlighting important information for the future equine practitioner. The information covered in these lectures is not covered in other lectures or will cover topics in greater depth than in other areas of the curriculum. The goal of these classes is to assist new graduates in their day to day activities as an equine practitioner.

- VMD 897 Food Animal Production Medicine Elective.** 1 credit. This elective covers: 1) Introduction to production medicine. 2) Mastitis 3) Internal/external parasite control 4) Update on toxicology in beef/dairy cattle 5) Castration, implants 6) General management of beef cattle 7) Anesthetic protocols on the field for surgeries in cattle 8) BVD 9) Topics on food animal pharmacology 10) Swine management 11) Foot care 12) Breeding management program beef/dairy cattle 13) Current topic: bioterrorism/agro terrorism – biosecurity 14) The critical periods of nutrition in beef cattle. Economics 15) Dairy/beef health programs – Vaccinations.
- VMD 897 Introduction to Large Animal Ultrasound.** 1 Credit. Students learn the basic techniques of ultrasound as a diagnostic tool in large animal veterinary medicine. The elective covers abdominal, thoracic, and tendon ultrasound techniques along with ultrasound of swellings, masses, etc. The students learn the basics of the ultrasound machine and be able to use different types of machines available.
- VMD 897 Large Animal Clinical Skills.** 1 credit. An elective for second year students which introduces students to skills common to equine and food animal practice. After completing this class students should be able to perform many of the basic clinical activities which will be expected of them in practice.
- VMD 897 Potbellied Pig.** 1 credit. This elective covers the main healthcare issues veterinarians are confronted with in dealing with pet pigs in practice. Topics include general management, restraint, immunization, deworming, tusk and claw trimming, nutrition and body condition score, anesthesia and surgical conditions such as spay and castration, and common medical problems.
- VMD 897 Theriogenology.** 2 credits. This elective covers bovine and equine reproduction. Students are given the opportunity to advance previously taught skills and will be exposed to techniques not taught in VMD 841 Reproductive System.
- VMD 897 University of Tennessee Arthritis Case Manager Course.** 1 credit. This course embraces the multimodal treatment of arthritis and provides an evidence-based approach to treatment options. Students learn the basic pathophysiology of osteoarthritis, common conditions causing osteoarthritis, appropriate methods to examination arthritic patients, and the various treatment options for osteoarthritis and their application to clinical patients.

### Senior-Year Professional Curriculum Outline

The senior-year clinical curriculum occupies a 54-week time period. Senior students are required to complete a minimum of 50 weeks of clinical clerkships during the summer, fall, and spring semesters of their senior year, regardless of the number of credits they have accumulated toward graduation; a minimum of 165 credits are needed to graduate. This phase of the professional curriculum provides students essential knowledge and experiences in medicine and surgery to equip them with entry-level clinical skills.

#### Required Clinical Clerkships: Senior-Year Curriculum

Required Core Clinical Clerkships	Credits
VMD 838 Pathology Clerkship	3
VMD 847 Radiology Clerkship	3
VMD 870 Anesthesiology Clerkship	3
VMD 881 Small Animal Clinical Sciences I (Small Animal Medicine Clerkship)	3
VMD 882 Small Animal Clinical Sciences II (Community Practice & Dentistry Clerkship)	3
VMD 883 Small Animal Clinical Sciences III (Small Animal Soft Tissue Surgery Clerkship)	3
VMD 891 Large Animal Clinical Sciences I (Equine Medicine Clerkship)	3
VMD 892 Large Animal Clinical Sciences II (Farm Animal Medicine & Surgery Clerkship)	3
VMD 893 Large Animal Clinical Sciences III (Equine and Farm Animal Field Services Clerkship)	3
VMD 898 Externship	2
VMD 899 Externship	2

#### Elective Clinical Clerkships: Available Throughout Senior Year

Elective Clinical Clerkship	Credits
VMD 803 Advanced Pathology	1-3
VMD 807 Advanced Veterinary Anesthesiology	1-3
VMD 808 Advanced Diagnostic Imaging	2-3
VMD 809 Advanced Small Animal Medicine	2-3
VMD 810 Advanced Veterinary Dermatology	1-2
VMD 818 Shelter Medicine	3
VMD 819 Integrative Medicine and Wellness	1-2
VMD 850 Avian and Zoological Medicine & Surgery	2
VMD 859 Veterinary Cardiology	2
VMD 860 Veterinary Dermatology	2
VMD 863 Veterinary Oncology	2
VMD 866 Veterinary Ophthalmology	2
VMD 869 Veterinary Neurology	2
VMD 870 Anesthesiology Clerkship	3
VMD 872 Small Animal Orthopedic Surgery and Physical Rehabilitation	3
VMD 875 Veterinary Ultrasonography	2
VMD 876 Small Animal Nutrition	1-2
VMD 878 Elective Clinical Rotation I (Special topics in veterinary medicine)	1-3
VMD 879 Elective Clinical Rotation II (Behavior)	1-3
VMD 880 Small Animal Emergency Medicine	1-3
VMD 882 Small Animal Clinical Sciences II (Community Practice & Dentistry Clerkship)	3
VMD 883 Small Animal Clinical Sciences III (Small Animal Soft Tissue Surgery Clerkship)	2-3
VMD 884 Zoological Medicine	2
VMD 885 Clinical Rotation in Laboratory Animal Medicine (in house)	2
VMD 886 Clinical Rotation in Theriogenology	2-3
VMD 891 Large Animal Clinical Sciences I (Equine Medicine Clerkship)	3
VMD 892 Large Animal Clinical Sciences II (Farm Animal Medicine & Surgery Clerkship)	3
VMD 893 Large Animal Clinical Sciences III (Equine and Farm Animal Field Services Clerkship)	3
VMD 894 Equine Surgery	2
VMD 895 Large Animal Emergency Medicine and Critical Care	3
VMD 898 Externship	1-3
VMD 899 Externship	1-6

### 12.9.8 Testing/Grading System and Procedures for Upholding Academic Standards

**Testing, Grading, and Skill Assessment.** Testing is an integral part of the DVM educational process. It provides critical feedback on student learning and teaching effectiveness. The Office for Academic and Students Affairs coordinates exam scheduling and attempts to schedule exams to allow adequate student preparation. Each instructor is free to choose the test format considered optimal for their course. Course coordinators are responsible for final course grade determination based on student performances on all tasks, including exams, laboratory exercises, and reports.

Academic grading is established by UT policy and can be found in the veterinary student handbook or Hilltopics: <http://dos.utk.edu/files/Hilltopics2014-2015.pdf>. For didactic courses, a letter grading scale of A-F (including plus values) is based on the following percentage points for all examinations and scored projects within a course: 90-100% A; 88-89% B+; 80-87% B; 78-79% C+; 70-77% C; 68-69% D+; 60-67% D; 0-59% F. Clinical clerkships are similarly letter graded, based on a rubric utilizing the 9 core clinical competency domains. Professionalism is an independent criterion for grading within individual clinical clerkships. Passing scores for clerkships and externships are C, C+, B, B+, and A (70-100%) with any grade below 70% recorded as a failing (F) grade. Any score below satisfactory for professionalism results in an automatic clerkship failure, regardless of total score. Satisfactory and unsatisfactory grading is used for courses assessing nontechnical skills (ABLES and Clinical Exposure) and where the graduate catalog stipulates such grading standards. Incomplete grades (I), which are given when course requirements have not been completed due to legitimate reasons, convert automatically to 'F' if all requirements are not completed by the conclusion of the subsequent semester.

Direct assessment of technical skills is provided through electronic accounting and verification of a clinical skills log. In order to graduate, students are required to complete at the level of competent or higher, 130 core technical skills and 94 global technical skills for a total of 224 completed skills out of 523 identified skills. Skills are scored as competent and efficient, competent, or difficulty performing skill. Only skills scored as competent and efficient or competent are successfully logged into the One45 system. While many skills are rotation specific, skills log assessment is independent of the clinical clerkship grade. All skills must be logged within 3 days (excluding weekends and holidays) by the student and assessed within another similar 3 days by the supervising clinician or service technician witnessing the skill proficiency.

**Academic Standards.** Student performance is evaluated by subjective and objective methods, including examinations given by the various teaching units throughout the curriculum and subjective evaluations prepared by the members of the faculty. Supervision and oversight of academic credits earned by enrolled students is administered by the associate dean for academic and student affairs. Any student whose record indicates unsatisfactory performance is notified in writing of such deficiencies by the associate dean for academic and student affairs prior to referral to the academic progress committee; the student is given the opportunity to correct suspected clerical errors in his/her record or append explanations for reported unsatisfactory evaluation entered in his/her record.

Students who fail a required course may not advance to the next semester. A meeting of the academic progress committee is held and a determination of whether the student is suspended and invited back to repeat the semester on academic probation or whether the student is dismissed is made. All factors regarding the student's performance are considered in the academic progress committee meeting. Students who receive a grade(s) below C within a given semester are considered to not be performing well. Students who obtain more than one D in their cumulative academic performance typically are required to meet with the academic progress committee. Again, all factors regarding the student's performance are considered in the academic progress committee meeting. Students whose cumulative GPA is below 2.20 are at a significant risk for dismissal.

Academic dismissal is the end result of a pattern of receiving grades that are below the university's standards for good academic standing. Students who have been academically dismissed are not eligible to enroll in classes, either full-time or part-time at the University of Tennessee. Registration for courses in the UTCVM program by students dismissed from the program is not permitted.

**Academic Honesty.** The College of Veterinary Medicine expects students to be honest in all their class work. Therefore, students are required to commit themselves to academic honesty by signing the following statement as part of the admissions process: *“An essential feature of The University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.”*

**Student Conduct Code, Grievance, and Appeals Process.** Veterinary students, as members of the University Community, are subject to the University Student Conduct Code as described in the CVM Professional Student Handbook and the University of Tennessee Student Handbook, Hilltopics:

<http://dos.utk.edu/publications/hilltopics/index.shtml>. Each student is asked to sign the Honor Statement pledge at orientation. Violations of the Code may result in penalties that include expulsion or lesser sanctions. Violations include academic dishonesty, plagiarism, furnishing false information to the University, unauthorized use or destruction of University property or disruption of the orderly operation of the University. Cases of alleged academic dishonesty on the part of all students fall under jurisdiction of the University of Tennessee at Knoxville student judicial system. Professional students violating professional standards or ethics may also be separately addressed as an extension of academic dishonesty of other violations of the standards of Conduct by the Judicial Graduate Council.

In all matters related to personal and professional concerns, the College of Veterinary Medicine is committed to a policy of treating all members of the college community fairly. In order to ensure that students know appropriate procedures for resolving a problem (grievances) or filing an appeal, the office of the Associate Dean for Academic and Student Affairs provides guidance to students requesting assistance with problems or grievances and helps to guide students through the process of the official appeal procedure. The following information outlines the official procedures available to veterinary students choosing to file a grievance or appeal. The Graduate Council Appeal Procedure Guidelines are located at:

<http://gradschool.utk.edu/GraduateCouncil/AppComm/AppealProcedureApproved2009>.

1. A grievance is defined as dissatisfaction occurring when a student feels they are affected by a condition that is unjust, inequitable, or creates hardship. Such grievances include academic problems (except for matters involving academic performance or progress), mistreatment by a University employee, wrongful assessment or processing of fees, and records/registration errors. Grievances related to discrimination based on race, gender, sexual orientation or handicap should file a formal complaint with the Office of Equity and Diversity with a copy to the appropriate academic department head and dean.
2. The initial phase of the student grievance procedure requires an oral discussion between the student and the person(s) alleged to have caused the grievance. If the discussion fails to resolve the matter to the student's satisfaction, the grievance should be put in writing and filed with the next level supervisor (Course Coordinator, Service Chief or Section Head, Department Head, or Dean).
3. Any student who is dissatisfied with the response from the foregoing process can present a formal complaint in writing to the Graduate Council through the office of the Assistant Dean of The Graduate School, but only after the grievance has been duly processed, without resolution, through appropriate appeals procedure at the department and college level. The initial appeal (lowest level) must be filed no later than 30 days after the incident that caused the appeal.
4. Appeals concerning grades, policies, or procedures must first follow departmental procedures. At a minimum, the student must confer with the faculty member, advisor, or graduate director and if the issue remains unresolved they may then appeal to the department head. If the appeal is denied, the student may then appeal in writing to the dean of the college within 30 days of the departmental decision. Further appeals of the college decision will be filed with the Graduate Council Appeal Committee through the Office of the Assistant Dean of Graduate School within 30 days of the college decision.



**12.11.1.b Student Attrition Rates, (Table B)**

Table B: Student Attrition (2009-10 through 2013-14 academic years)						
Relative Class	Academic Year	Total Attrition	Reason for Relative Attrition†		Reason for Absolute Attrition‡	
			Academic	Personal	Academic	Personal
Freshmen	2009-10	5	3		1	1
	2010-11	2		2		
	2011-12	4	3		1	
	2012-13	6	2		3	1
	2013-14	1		1		
Sophomores	2009-10	3	1	1	1	
	2010-11					
	2011-12	5	4			1
	2012-13					
	2013-14					
Juniors	2009-10	2		1		1
	2010-11					
	2011-12	2	1		1	
	2012-13	4	2		1	1
	2013-14	1		1		
Seniors	2009-10					
	2010-11					
	2011-12					
	2012-13	1		1		
	2013-14					

† Relative Attrition – students who withdrew or were academically decelerated and returned.

‡ Absolute Attrition – students who withdrew or were academically decelerated and never returned or were dismissed.

**12.11.1.d Summary of DVM Graduate Initial Employment Data: Classes of 2010-14**

Grad Year	No. Students	Clinical Practice	Post-Graduate Clinical Education	Post-Graduate Research Education	Unknown
2010	65	29	16	2	18
2011	63	22	16	1	24
2012	93	18	22	0	53
2013	79	65	9	1	4
2014	79	60	10	1	8
Total	379	194 (52%)	73 (19%)	5 (1%)	107 (28%)

**12.11.1.c AVMA COE Clinical Competencies and Associated Assessment Rubrics**

Direct assessments of student competencies are achieved through all required and elective clerkships. Standard clinical competencies are assessed in the following areas using the below defined rubric.

**AVMA COE Competency 1: Comprehensive Patient Diagnosis**

## History Assessment Skills

- Exceptional: Takes thorough, organized, and accurate patient histories.
- Good: Usually complete, organized, and accurate with minor omissions or lapses in organization.
- Satisfactory: Identifies most primary information, but may lack completeness or organization.
- Unacceptable: Frequently incomplete, inaccurate, or disorganized.

## Physical Examination Skills

- Exceptional: Performs thorough and timely physical examinations and prepares detailed records.
- Good: Performs complete physical examinations with occasional minor omissions.
- Satisfactory: Performs basic physical examinations, but sometimes misses abnormalities or fails to complete thorough examination.
- Unacceptable: Examinations are typically incomplete; recordings of findings are incomplete or inaccurate.

## Diagnostic Planning Skills

- Exceptional: Consistently identifies all problems, most likely differential diagnoses, and appropriate initial diagnostic steps.
- Good: Identifies major problems, appropriate differential diagnoses, and initial diagnostic plans.
- Satisfactory: Creates initial problem list and diagnostic plan, but sometimes has difficulty identifying problems or differentials.
- Unacceptable: Typically unable to identify major problems, differential diagnoses, or diagnostic steps.

## Use of Laboratory/Diagnostic Tests and Interpretation

- Exceptional: Consistently identifies key diagnostic tests and provides accurate interpretation of results.
- Good: Usually identifies key diagnostic tests and provides accurate interpretation of results.
- Satisfactory: With additional preparation, provides basic interpretation of common diagnostic tests.
- Unacceptable: Difficulty selecting appropriate diagnostic tests, or fails to provide accurate interpretation.

## Record Management

- Exceptional: Progress notes, orders, and discharge instructions are clear, detailed, timely, and accurate.
- Good: Progress notes, orders, and discharge instructions are good, but occasionally lack clarity, have minor omissions, or are delayed in completion.
- Satisfactory: Progress notes, orders, and discharge instructions include core information, but lack detail, timeliness, or organization.
- Unacceptable: Progress notes, orders, and discharge instructions are frequently incomplete, unorganized, late, or missing.

**AVMA COE Competency 2: Comprehensive Treatment Planning**

## Treatment Plans

- Exceptional: Consistently develops complete treatment plan for primary disease and potential complications, with clear written orders.
- Good: Usually develops appropriate treatment plan, with clear written orders.
- Satisfactory: Develops basic treatment plan for primary disease, but may not address all possible problems or include clear written orders.
- Unacceptable: Has difficulty developing appropriate treatment plans, responding to patient changes, or determining specific orders.

**AVMA COE Competencies 3 and 4: Basic Surgical/Medical Skills and Case Management**

## Basic Technical or Surgical Skills

- Exceptional: Knowledge of procedures is complete and accurate; technical skills performed well and with attention to possible complications.
- Good: Demonstrates accurate knowledge of procedures and performs technical skills well with minor need for improvement.
- Satisfactory: Demonstrates necessary knowledge and skills required to adequately perform technical skills.
- Unacceptable: Does not demonstrate adequate knowledge of procedures or is unable to perform basic technical skills.

## Surgical Techniques

- Exceptional: Always uses aseptic technique and displays proper instrument use; suturing technique and other surgical skills are exceptional.
- Good: Typically uses aseptic technique and displays proper instrument use; suturing technique and other skills are good.
- Satisfactory: Sometimes does not use aseptic technique; sometimes has difficulty with proper instrument use; suturing technique and other skills are adequate.
- Unacceptable: Does not consistently use aseptic technique; instrument use is poor; suturing technique and other skills are poor.

## Basic Medical Skills

- Exceptional: Consistently describes detailed pathophysiology of disease process and pharmacologic rationale for treatments.
- Good: Usually describes detailed pathophysiology of disease and pharmacologic basis for treatment.
- Satisfactory: Describes basic pathophysiology and pharmacologic information with adequate level detail.
- Unacceptable: Does not describe pathophysiologic or pharmacologic principles pertinent to case management.

## Case Management and Follow Through

- Exceptional: Consistently organizes daily activities efficiently, responds to patient changes; administers and provides appropriate updates to clinicians, clients.
- Good: Organizes daily activities well, usually responds to patient changes, administers treatments as ordered and provides regular updates.
- Satisfactory: Completes daily activities and treatments; provides basic patient updates in rounds and daily client communications.
- Unacceptable: Frequently arrives late, is disorganized, or fails to provide timely treatments or updates regarding patient status.

**AVMA COE Competency 5: Basic Anesthesia, Pain Management, and Welfare Skills**

## Basic Anesthesia/Sedation, Pain Management

- Exceptional: Accurately assess and monitors pain or anticipated discomfort; knowledge and choice of protocols is detailed and accurate.
- Good: Usually assesses and monitors pain or anticipated discomfort; knowledge and choice of protocols is accurate.
- Satisfactory: Demonstrates knowledge and adequate administration of common protocols.
- Unacceptable: Does not demonstrate anticipation, assessment, or ability to manage pain or provide basic sedation.

## Animal Welfare and Patient Care

- Exceptional: Exceptional level of concern with patient care; provides extra attention to patient needs.

- Good: Conscientious level of concern with patient care; frequently interacts with patient and responds to patient needs.
- Satisfactory: Provides care for acceptable patient comfort as needed and responds to changing patient needs.
- Unacceptable: Unacceptable concern with patient care; fails to provide basic patient comfort or respond to patient needs.

**AVMA COE Competency 6: Basic Emergency and Intensive Care Case Management Skills**

## Emergency and Intensive Care Skills

- Exceptional: Identifies emergent issues in admitted and critical patients and demonstrates ability to provide initial supportive emergency care.
- Good: Usually has sound judgment with emergency or intensive care cases and is able to plan supportive emergency treatments.
- Satisfactory: Displays good judgment, but needs close supervision.
- Unacceptable: Does not identify emergent patient issues, exhibits poor judgment regarding critical cases, and does not demonstrate knowledge of necessary initial emergency care.

**AVMA COE Competency 7: Health Promotion, Disease Prevention/Biosecurity, Zoonoses, and Food Safety**

## Health Promotion and Disease Prevention Skills

- Exceptional: Proactively demonstrates comprehensive and current knowledge of disease prevention and control measures, including optimal wellness programs for maintenance of individual and population health; understanding of zoonotic or biohazard threats is excellent.
- Good: Usually demonstrates accurate knowledge of disease prevention and control measures, including good quality wellness programs for maintenance of individual and population health; understanding of zoonotic or biohazard threats is good.
- Satisfactory: When prompted, demonstrates acceptable knowledge of disease prevention and control measures, including adequate wellness programs for maintenance of individual and population health; understanding of zoonotic or biohazard threats is limited.
- Unacceptable: Lacks adequate awareness and knowledge of disease prevention and control measures, including wellness programs for maintenance of individual and population health; understanding of zoonotic or biohazard threats is poor.

**AVMA COE Competency 8: Communication and Ethical Conduct Skills and Knowledge**

## Communication with Clients

- Exceptional: Consistently communicates with clients by eliciting and giving accurate, thorough, timely information that meets the needs of owner/agent and animal patient.
- Good: Usually communicates with clients by eliciting and giving accurate, thorough, timely information that meets the needs of both owner/agent and animal patient.
- Satisfactory: sometimes has difficulty eliciting and/or giving accurate, thorough, and timely information. Needs to consider client's perspective and/or maintaining professional boundaries with clients.
- Unacceptable: Typically does not interact well with clients. Grievances often occur in client interactions.

## Communication with Medical Personnel

- Exceptional: Consistently communicates with other professionals providing accurate, thorough, timely information that promotes effective medical care and teamwork.
- Good: Usually communicates well with other professionals, giving and eliciting accurate, thorough, timely information that promotes effective medical care and teamwork.
- Satisfactory: Sometimes has difficulty giving and eliciting accurate, thorough, timely information that promotes effective medical care and teamwork. Needs to listen more and consider/respect others' perspectives.
- Unacceptable: Typically does not interact well with other professionals. Grievances often occur in team interactions.

**Rounds: Includes Daily Rounds, Grand Rounds, and Seminars**

- **Exceptional:** Participates regularly; respectfully engages in group discussions; provides organized, complete and concise case presentations; responds effectively to questions.
- **Good:** Participates regularly; respectfully engages in group discussions; provides organized and complete case presentations with minor omissions; responds well to questions.
- **Satisfactory:** Participates when addressed; provides adequate case presentations, but presentations need improvement in organization or delivery.
- **Unacceptable:** Rarely participates; case presentations lack major components or organization; does not respond to questions or engage in discussions.

**Medical Ethical Concerns**

- **Exceptional:** High level of relevant ethical awareness and skills; anticipates, asks questions, discusses, and uses diplomacy in ethical dilemmas.
- **Good:** Appropriate level of ethical awareness and skills; asks questions, discusses and uses diplomacy in implementing solutions to ethical dilemmas.
- **Satisfactory:** Acceptable level of ethical awareness and skills; discusses and asks questions about ethical dilemmas; at times lacks diplomacy.
- **Unacceptable:** Unacceptable level of ethical awareness; inability to recognize ethical issues or to demonstrate ethical decision making consistently; not diplomatic when communicating ethical dilemmas.

**Overall Contribution to Medical Team and Participation**

- **Exceptional:** Always assists others on rotation; takes initiative to keep clinical areas orderly; always on time and engaged in rotation.
- **Good:** Usually assists others on rotation; usually keeps clinical areas orderly; usually on time and engaged in rotation.
- **Satisfactory:** If prompted, assists others on rotation and contributes to keeping clinical areas orderly; sometimes not on time or engaged in rotation.
- **Unacceptable:** Does not assist others on rotation or in keeping clinical areas orderly; is often late and unengaged in rotation.

**AVMA COE Competency 9: Appreciation for Role of Research (Searches Effectively for Evidence Applicable to Clinical and Diagnostic Cases)****Clinical Research Skills**

- **Exceptional:** Consistently identifies, analyzes, and presents relevant current literature and other sources.
- **Good:** Identifies and presents relevant information from textbooks and other sources.
- **Satisfactory:** Identifies and presents basic relevant information from textbooks.
- **Unacceptable:** Does not demonstrate knowledge or acquisition of basic relevant information.

**Professionalism****Overall Professionalism**

- **Exceptional:** Demonstrates high level of maturity, is always prepared and dependable, interacts respectfully with clinicians, staff, classmates, and clients; appears eager to learn and participate.
- **Good:** Demonstrates good level of maturity, is usually prepared and dependable, interacts respectfully with clinicians, staff, classmates, and clients; appears eager to learn and participate.
- **Satisfactory:** Demonstrates acceptable levels of maturity, preparedness and dependability; interacts respectfully with others or has minor areas for improvement in professional behavior.
- **Unacceptable:** Does not display appropriate professionalism; is unrealistic about learning and participation; demonstrates gaps in professionalism behavior identified based on UTCVM guidelines.

12.11.1.c Clinical Competencies Assessment Map

Clinical Competency	VMD 838 Pathology Core	VMD 847 Radiology Core	VMD 870 Anesthesiology Core	VMD 881 Small Animal Medicine Core	VMD 882 Community Practice & Dentistry Core	VMD 883 Small Animal Soft Tissue Surgery Core	VMD 891 Equine Medicine Core	VMD 892 Farm Animal Medicine & Surgery Core	VMD 893 Equine & Farm Animal Field Services Core	VMD 850 Avian & Zoological Medicine	VMD 859 Veterinary Cardiology	VMD 860 Veterinary Dermatology	VMD 863 Veterinary Oncology	VMD 866 Veterinary Ophthalmology	VMD 869 Veterinary Neurology	VMD 872 Sm Anim Orthopedic Sx & Phys Rehab	VMD 880 Small Animal Emergency Medicine	VMD 894 Equine Surgery	VMD 895 Lg Animal Emergency Med & Critical Care
1. Comprehensive patient diagnosis (problem solving skills), appropriate use of clinical laboratory testing and record management																			
(a) History and physical examination assessment skills																			
(b) Diagnostic planning skills																			
(c) Use of laboratory/diagnostic tests and interpretation																			
(d) Record management																			
2. Comprehensive treatment planning including referral when indicated																			
3. Basic surgery skills, experience, and case management																			
(a) Basic technical or surgical skills																			
(b) Surgical Techniques																			
4. Basic medicine skills, experience, and case management																			
(a) Basic medical skills																			
(b) Case management and follow through																			
5. Anesthesia and pain management, patient welfare																			
(a) Basic anesthesia/sedation, pain management																			
(b) Animal welfare and patient care																			
6. Emergency and intensive care case management																			
7. Health promotion, disease prevention/biosecurity, zoonosis, and food safety																			
8. Client communications and ethical conduct																			
(a) Communication with clients																			
(b) Communication with medical personnel																			
(c) Medical ethical concerns																			
9. Critical analysis of new information and research findings relevant to veterinary medicine																			

Presence of blue shading indicates formal evaluation of the respective clinical competency within the indicated clinical clerkship.

## 12.11.1.c Outcomes Assessment: Senior Student Clinical Performance

<b>2010-11 Academic Year; Class of 2011 (66 students)</b>			
<b>Clinical Assessment† Category</b>	<b>No. Assessments</b>	<b>Mean ± SD</b>	<b>Assessments Below Competent</b>
History taking skills	1500	3.1 ± 0.5	2
Physical examination skills	1492	3.1 ± 0.5	0
Diagnostic planning skills	1477	3.0 ± 0.5	10
Use of laboratory/diagnostic tests and interpretation	1441	3.0 ± 0.6	7
Record management	1438	3.3 ± 0.4	5
Treatment plans	1458	3.1 ± 0.4	8
Basic technical or surgical skills	1457	3.1 ± 0.7	3
Surgical techniques	949	3.0 ± 1.1	0
Basic medical skills	1488	2.9 ± 0.4	14
Case management and follow through	1468	3.4 ± 0.4	7
Basic anesthesia/sedation, pain management	1045	3.2 ± 1.3	2
Animal welfare and patient care	1457	3.5 ± 0.6	2
Emergency and intensive care skills	787	3.0 ± 1.1	4
Health promotion and prevention skills	802	3.1 ± 1.3	3
Communication with clients	1497	3.5 ± 0.6	1
Communication with medical personnel	1527	3.5 ± 0.4	4
Rounds: includes daily rounds, grand rounds, and seminars	1487	3.2 ± 0.4	10
Medical ethical concerns	1219	3.3 ± 1.1	0
Overall contribution to medical team and participation	1527	3.5 ± 0.4	6
Clinical research skills	875	3.0 ± 0.9	6
Overall professionalism	1532	3.5 ± 0.4	2
† Clinical performance based on established category rubrics and evaluation criteria of exceptional performance (4), good performance (3), satisfactory performance (2), and unacceptable performance (1).			

<b>2011-12 Academic Year; Class of 2012 (96 students)</b>			
<b>Clinical Assessment† Category</b>	<b>No. Assessments</b>	<b>Mean ± SD</b>	<b>Assessments Below Competent</b>
History taking skills	2075	3.2 ± 0.4	1
Physical examination skills	2041	3.2 ± 0.4	3
Diagnostic planning skills	2020	3.1 ± 0.5	1
Use of laboratory/diagnostic tests and interpretation	1949	3.1 ± 0.5	3
Record management	1991	3.4 ± 0.6	8
Treatment plans	2016	3.1 ± 0.6	1
Basic technical or surgical skills	1918	3.1 ± 0.6	6
Surgical techniques	1089	3.1 ± 1.2	2
Basic medical skills	2080	3.0 ± 0.5	6
Case management and follow through	1985	3.4 ± 0.6	5
Basic anesthesia/sedation, pain management	1474	3.2 ± 1.0	1
Animal welfare and patient care	1964	3.5 ± 0.6	0
Emergency and intensive care skills	1100	3.1 ± 1.3	3
Health promotion and prevention skills	1152	3.2 ± 1.3	0
Communication with clients	2020	3.5 ± 0.5	0
Communication with medical personnel	2094	3.5 ± 0.5	5
Rounds: includes daily rounds, grand rounds, and seminars	2054	3.3 ± 0.8	3
Medical ethical concerns	1551	3.4 ± 1.1	1
Overall contribution to medical team and participation	2088	3.6 ± 0.6	5
Clinical research skills	1324	3.1 ± 1.1	4
Overall professionalism	2110	3.6 ± 0.6	0
† Clinical performance based on established category rubrics and evaluation criteria of exceptional performance (4), good performance (3), satisfactory performance (2), and unacceptable performance (1).			

<b>2012-13 Academic Year; Class of 2013 (79 students)</b>			
<b>Clinical Assessment† Category</b>	<b>No. Assessments</b>	<b>Mean ± SD</b>	<b>Assessments Below Competent</b>
History taking skills	1673	3.2 ± 0.3	3
Physical examination skills	1636	3.2 ± 0.3	2
Diagnostic planning skills	1640	3.1 ± 0.3	5
Use of laboratory/diagnostic tests and interpretation	1596	3.1 ± 0.3	1
Record management	1618	3.4 ± 0.4	3
Treatment plans	1635	3.2 ± 0.3	4
Basic technical or surgical skills	1567	3.1 ± 0.4	3
Surgical techniques	827	3.1 ± 0.8	5
Basic medical skills	1660	3.0 ± 0.3	4
Case management and follow through	1578	3.5 ± 0.5	4
Basic anesthesia/sedation, pain management	1196	3.2 ± 0.7	2
Animal welfare and patient care	1493	3.6 ± 0.3	0
Emergency and intensive care skills	824	3.1 ± 0.8	3
Health promotion and prevention skills	997	3.2 ± 0.7	0
Communication with clients	1617	3.6 ± 0.4	0
Communication with medical personnel	1674	3.6 ± 0.3	1
Rounds: includes daily rounds, grand rounds, and seminars	1636	3.4 ± 0.3	1
Medical ethical concerns	1209	3.5 ± 0.6	0
Overall contribution to medical team and participation	1660	3.6 ± 0.3	0
Clinical research skills	1159	3.1 ± 0.7	4
Overall professionalism	1686	3.7 ± 0.3	1
† Clinical performance based on established category rubrics and evaluation criteria of exceptional performance (4), good performance (3), satisfactory performance (2), and unacceptable performance (1).			

<b>2013-14 Academic Year; Class of 2014 (79 students)</b>			
<b>Clinical Assessment† Category</b>	<b>No. Assessments</b>	<b>Mean ± SD</b>	<b>Assessments Below Competent</b>
History taking skills	1673	3.2 ± 0.3	3
Physical examination skills	1636	3.2 ± 0.3	2
Diagnostic planning skills	1640	3.1 ± 0.3	5
Use of laboratory/diagnostic tests and interpretation	1596	3.1 ± 0.3	1
Record management	1618	3.5 ± 0.4	3
Treatment plans	1635	3.2 ± 0.3	4
Basic technical or surgical skills	1567	3.1 ± 0.4	3
Surgical techniques	827	3.1 ± 0.7	5
Basic medical skills	1660	3.0 ± 0.3	4
Case management and follow through	1578	3.6 ± 0.4	4
Basic anesthesia/sedation, pain management	1196	3.2 ± 0.4	2
Animal welfare and patient care	1493	3.7 ± 0.4	0
Emergency and intensive care skills	824	3.1 ± 0.6	3
Health promotion and prevention skills	997	3.3 ± 0.5	0
Communication with clients	1617	3.6 ± 0.3	0
Communication with medical personnel	1674	3.6 ± 0.3	1
Rounds: includes daily rounds, grand rounds, and seminars	1636	3.3 ± 0.4	1
Medical ethical concerns	1209	3.5 ± 0.4	0
Overall contribution to medical team and participation	1660	3.7 ± 0.3	0
Clinical research skills	1159	3.1 ± 0.6	4
Overall professionalism	1686	3.7 ± 0.2	0
† Clinical performance based on established category rubrics and evaluation criteria of exceptional performance (4), good performance (3), satisfactory performance (2), and unacceptable performance (1).			



**12.11.1.c Outcomes Assessment: Select Veterinary Core and Global Skills (full listing available)****Core Veterinary Skills**

- 
- Abdominocentesis (Farm Animal)
  - Administer intranasal vaccine (Equine)
  - Administer local anesthetic (Farm Animal)
  - Apply a distal limb bandage (Equine)
  - Apply claw block (Farm Animal)
  - Auscult and classify heart murmur (Small Animal)
  - Auscult and interpret respiratory sounds (Equine)
  - Catheterize urethra and collect urine (Equine)
  - Complete a health certificate (Equine)
  - Constant rate infusion (calculate - Small Animal)
  - Cystocentesis (Small Animal)
  - Cytology Slide Prep, Gram Stain (Farm Animal)
  - Demonstrated quick release knot (Equine)
  - Dental float (participate - Equine)
  - Epidural injection (Farm Animal)
  - Estimate age from dentition (Equine)
  - Fecal floatation (Small Animal)
  - Field anesthesia (participate - Equine)
  - Hoof exam (Farm Animal)
  - IM or IV injection (Equine)
  - Interpret hemogram (Equine)
  - IV catheter placement (Small Animal)
  - IV, IM, SQ, & PO medications (administer - Equine)
  - Jugular venipuncture (Small Animal)
  - Laceration repair (Equine)
  - Lymph node aspirate (Small Animal)
  - Nasal swab for sample collection (Equine)
  - Neurologic examination (Equine)
  - Obtain blood (tail vein - Bovine)
  - Open wound management (Equine)
  - Oral fluid administration (Farm Animal)
  - Perform ECG (Any species)
  - Tusk trim or removal (Porcine)
  - Place and interpret pulse oximeter (Small Animal)
  - Pregnancy Diagnosis (Farm Animal)
  - Pressure check anesthesia machine (Small Animal)
  - Radiograph horse in field setting (participate - Equine)
  - Rectal examination (Small Animal)
  - Restrain and halter (Bovine)
  - Restraint (halter) (Farm Animal)
  - Select and administer sedatives (Equine)
  - Teeth trim or removal (Camelid)
  - Use of hoof testers (Equine)
  - Venipuncture (Small Animal)
- 

**Global Veterinary Skills**

- 
- Analgesic plan (develop and institute - Small Animal)
  - Apply a foot bandage and/or poultice (Equine)
  - Arthrocentesis and cytology (Small Animal)
  - Beef herd vaccination plan (Farm Animal)
  - Blood glucose curve (Small Animal)
  - Blood pressure (Small Animal)
  - Bone marrow aspirate/biopsy (Small Animal)
  - Breeding Soundness Evaluation (Farm Animal)
  - Bronchoalveolar lavage (participate - Equine)
  - Buccal mucosal bleeding time (Small Animal)
  - Calculate daily energy requirements
  - California Mastitis Test (Farm Animal)
  - Castration (Farm Animal)
  - Close abdominal wall (Small Animal)
  - Colitis work up (Equine)
  - Colostrum management (Farm Animal)
  - Drug administration via balling gun (Farm Animal)
  - Ear cleaning (Small Animal)
  - Euthanasia (assist or observe - Small Animal)
  - Fine needle aspirate cytology (Any Species)
  - Gavage feeding of wildlife (Exotic Animal)
  - Interpret urine sediment (Small Animal)
  - Local/regional anesthetic technique (Large Animal)
  - Mass removal (participate - Small Animal)
  - Nasal biopsy (Small Animal)
  - Otic cytology and interpretation
  - Palmer/plantar digital nerve block (Equine)
  - Perform thoracocentesis (Small Animal)
  - Perform abdominocentesis (Small Animal)
  - Perform caudal fold TB test (Farm Animal)
  - Perform rumenocentesis (Farm Animal)
  - Place a nasal oxygen line (Small Animal)
  - Place a tail wrap (Equine)
  - Restraint with rope (demonstrate - Farm Animal)
  - Scale and clean teeth (Small Animal)
  - Semen analysis (Farm Animal)
  - Schirmer tear test (Small Animal)
  - Toxic plant identification (Farm Animal)
  - Tracheotomy (participate - Equine)
  - Trichomoniasis test (Farm Animal)
  - Vaginal examination (Farm Animal)
  - Wing and nail trim (Exotic Animal)
-

## 12.11.1.e Alumni Assessments

Evaluative Statements	Graduation Year				
	2008	2009	2010	2011	2012
1. How prepared were you to pursue professional activities following graduation?	3.3	3.7	4.3	3.6	3.9
2. Please rate your current ability to:					
• Diagnose patient conditions	4.0	4.4	4.5	4.2	3.9
• Communicate effectively with clients	4.0	4.4	4.2	4.2	4.4
• Complete a patient history	4.5	4.5	4.1	4.6	4.4
• Interpret radiographs	4.2	4.1	3.6	3.7	3.7
• Interpret ultrasound images	2.8	3.3	2.9	2.8	3.0
• Interpret laboratory results	4.3	4.3	4.1	4.1	4.0
• Discuss euthanasia decisions with clients	4.8	4.7	4.5	4.4	4.5
• Communicate effectively with other veterinarians	4.3	4.5	4.3	4.4	4.1
• Communicate effectively with staff	4.2	4.3	4.3	4.5	4.1
• Know when to refer a patient	4.5	4.5	4.3	4.2	4.3
• Perform spays or neuters	4.3	4.1	3.3	4.2	3.1
• Perform general surgeries	2.8	3.7	2.7	3.8	2.5
• Perform complex orthopedic surgeries	1.5	1.5	2.1	2.1	1.3
• Perform complex soft tissue surgeries	2.3	2.4	2.4	2.8	1.6
• Interpret published research findings	3.8	3.7	3.7	3.9	3.9
• Obtain current medical research from computer searches	3.7	4.1	4.2	4.1	4.1
• Work with others in a team environment	4.0	4.5	4.5	4.6	4.5
• Problem solve	4.5	4.4	4.0	4.6	4.3
• Have an understanding of basic mechanisms of disease	4.8	4.2	4.0	4.1	4.1
• Continue life-long learning	4.2	4.4	4.5	4.4	4.4
• Utilize evidence-based medicine	4.2	4.2	4.0	4.1	4.1
• Utilize business management skills	3.7	2.7	3.6	3.6	2.7
• Utilize personnel management skills	4.2	3.2	3.6	4.2	3.4
• Utilize time management skills	4.5	3.9	4.1	4.3	4.0
• Speak to community groups or schools	4.5	3.4	3.2	3.4	2.9
• Be active in veterinary issues impacting communities	3.8	3.4	3.3	3.3	3.0
• Be involved in local disaster planning activities	3.3	2.6	2.6	2.7	2.1
• Answer questions concerning public health issues	3.7	3.4	4.4	3.3	2.9
• Conduct an interview with news media	3.1	2.5	2.6	2.7	2.1
• Be active in veterinary professional organizations	4.2	3.4	3.2	3.4	2.9
3. What is your overall opinion of the quality of education you received at UTCVM?	4.2	4.4	4.3	4.0	3.9
4. My co-workers have a positive impression of UTCVM.	4.5	4.0	4.0	4.4	3.9
5. UTCVM should allow students to focus their education along specific career paths.	3.8	3.1	3.5	3.7	3.6
6. UTCVM should provide more options to prepare students for non-practice careers.	3.8	2.8	3.1	3.5	3.3
Numerical results in the table represent arithmetic means for all respondents to the survey. Descriptive responses were converted to numerical scores based upon the following: Highly Prepared, High Capability, or Strongly Agree = 5; Prepared, Good Capability, or Agree = 4; Fair Capability or Neutral = 3; Somewhat Prepared, Poor Capability, or Disagree = 2; Not Well Prepared, No Capability, or Strongly Disagree = 1. Respondents who selected the option 'No Basis for Evaluation' were not assigned any point value.					

12.11.1.f Employers' Assessments of New Graduates' Readiness to Practice

SURVEY QUESTIONS	GRADUATION YEAR (percent surveys returned)			
	2010 (59%)	2011 (42%)	2012 (63%)	2013 (47%)
<b>In general, my view of UTCVM's preparation of graduates is: [Excellent (4), Very Good (3), Fair (2), or Poor (1)]</b>	3.3†	3.4	3.2	3.2
<b>How do UTCVM graduates compare with employees from other DVM programs? [Above (3), Similar (2), or Below Ability (1)]</b>	2.3	2.5	2.3	2.3
<b>Communication Skills [Excellent (4), Very Good (3), Fair (2), Poor (1)]</b>				
• Ability to communicate effectively with clients	3.4	3.3	3.2	3.4
• Ability to communicate with other veterinarians	3.5	3.3	3.2	3.3
• Ability to communicate effectively with staff	3.4	3.4	3.1	3.3
• Ability to handle conflict effectively	3.2	3.1	3.0	2.8
<b>Knowledge &amp; Performance [Excellent (4), Very Good (3), Fair (2), Poor (1)]</b>				
• Ability to complete a thorough patient history and physical examination	3.4	3.5	3.3	3.4
• Ability to diagnose patient conditions	2.8	3.0	2.9	3.0
• Ability to interpret laboratory results	3.1	3.2	3.2	3.1
• Ability to interpret radiographs	2.9	3.0	2.9	2.9
• Ability to perform common surgical procedures including OHE, neuter, declaw, laceration repair, biopsy, other procedures	2.9	2.7	2.8	2.8
• Ability to perform major surgical procedures including bone fracture fixation, GDV, intestinal anastomosis, other procedures	1.7	2.2	2.4	2.3
• Ability to develop a patient treatment plan	3.1	3.2	3.0	3.4
• Knowledge of medical principles	3.2	3.4	3.3	3.2
• Knowledge of surgical principles	1.7	3.0	3.0	3.0
• Ability to administer general anesthesia	3.2	3.2	3.1	3.1
• Ability to manage emergency cases	2.9	3.0	2.9	2.9
• Knowledge and ability of veterinary dentistry	2.4	2.7	2.7	2.7
• Skill in handling animals	3.2	3.2	3.1	3.2
• Ability to obtain biological specimens from patients	3.1	3.0	2.9	3.2
• Ability to splint/bandage patients	2.8	2.8	2.9	3.0
<b>Professional Skills [Excellent (4), Very Good (3), Fair (2), Poor (1)]</b>				
• Stays current with new medical findings	3.5	3.3	3.2	3.2
• Works effectively with others in a team environment	3.6	3.4	3.3	3.4
• Displays effective problem solving abilities	3.3	3.4	3.1	3.2
• Has an understanding of basic mechanisms of disease	3.3	3.4	3.3	3.4
• Is able to locate appropriate medical resources	3.5	3.4	3.4	3.3
• Conducts duties with professionalism	3.6	3.6	3.4	3.4
<b>Overall effectiveness of UTCVM graduates? [Highly Effective (4), Very Effective (3), Moderately Effective (2), or Not Effective (1)]</b>	3.5	3.2	3.2	3.2

† Values are arithmetic means for returned surveys.

## 12.11.1.g Faculty and Student Survey of Professional Curriculum (Selected General Questions)

Overall Professional Curriculum Assessment†	Percent of Survey Respondents				
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
<b>Clinical year curriculum content has practical relevance</b>					
Faculty Response (mean 4.1)	32%	55%	5%	6%	2%
Student Response (mean 4.1)	28%	60%	3%	7%	2%
<b>The college is effective at producing entry level small animal veterinarians</b>					
Faculty Response (mean 3.9)	15%	65%	15%	3%	2%
Student Response (mean 3.2)	13%	73%	5%	5%	3%
<b>The college is effective at producing entry level large animal veterinarians</b>					
Faculty Response (mean 3.2)	3%	38%	42%	12%	5%
Student Response (mean 2.8)	0%	31%	24%	39%	7%
<b>The college is effective at producing entry level mixed animal veterinarians</b>					
Faculty Response (mean 3.8)	5%	50%	36%	9%	0%
Student Response (mean 3.0)	0%	39%	32%	22%	7%
<b>The college is effective at producing entry level non-practice veterinarians</b>					
Faculty Response (mean 2.7)	2%	26%	42%	29%	2%
Student Response (mean 2.8)	0%	16%	47%	33%	5%
† Numerical results represent arithmetic means for all respondents to the survey. Descriptive responses were converted to numerical scores based upon the following: Strongly Agree = 5; Agree = 4; Neither Agree or Disagree = 3; <b>Disagree = 2;</b> <b>Strongly Disagree = 1.</b>					

Results of a 2013-14 academic year faculty survey to determine the levels of satisfaction with individual years of the professional curriculum. The survey response rate was 49% (65/133) of faculty and house officers teaching in the professional curriculum and 79% (60/76) of senior students (Class of 2014).