

This is the first in a series of articles about the potential job outlook in the veterinary industry.

By Nancy S. Loving, DVM

s many new graduates embark upon careers in veterinary medicine, all that might be considered is a thirst for entering

into clinical practice. Yet there are many other career possibilities that some might find stimulating and satisfying. In this series, we are going to take a look at other potential ways to use a comprehensive veterinary education and skill set.

As Eleanor Green, DVM, DACVIM, DABVP, past president of AAEP, current president of the Association of American Veterinary Medical Colleges (AAVMC) and dean of Texas A&M University's College of Veterinary Medicine and Biomedical Sciences, pointed out, "A veterinary degree provides a very strong education that allows graduates to seek seemingly unlimited career paths—private practice, aca-

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demic veterinary medicine, research in all of its forms, corporate, government, public service, business and entrepreneurship, service, philanthropy and many more."

One avenue an equine practitioner might choose to pursue is to work within a university system. Green said, "Within academic veterinary medicine, the career paths seem equally unlimited. Opportunities for veterinarians in an academic setting are plentiful and as varied as in the private sector, government and corporate settings."

Besides having worked many years in private clinical practice, Earl Gaughan, DVM, DACVS, has enjoyed a varied career of 20 years at several university veterinary teaching hospitals. While job possibilities within universities range in description from clinical, research and administrative to teaching positions, he noted that in many cases, a veterinarian often participates in a combination of these positions.

To achieve a faculty position, Gaughan remarked that it is necessary to possess a DVM or the equivalent. Green noted that having a PhD and even a post-doctoral fellowship are preferred credentials for an academic research position. The PhD degree can be an asset for a clinician scholar, as well, and might be the only credential needed for a basic science research position.

"A board-certified specialty credential is desirable, if not a prerequisite, because it implies that the veterinarian has an internship (or equivalent) and residency background, and therefore is familiar with a university environment," said Gaughan.

Experience requirements vary, depending upon the position the veterinarian is seeking to fill. According to Green, board certification is very important in an academic setting to ensure that requirements by the Veterinarian Specialty Organizations for residency training programs can be met.

Gaughan explained that administrative positions usually come from the ranks of the faculty. "Advanced degrees, such as those achieved in business (MBA), administration or education, are pre-

ferred," he said. For a pure, 100% research position, Gaughan advised that a PhD is typically a requisite. "For clinical faculty to obtain a position with a research assignment, it is desirable to have attained advanced clinical credentials, such as board certification, with a track record of research publications," he added.

Tasks Within a University Venue

Tasks of veterinarians within a university setting are diverse. As Gaughan explained, "For a clinical department position, typically assignments center around 33-50% clinical, 25-50% research, 15-25% teaching or instruction, and the remaining proportion attributed to 'college/university service,' such as involvement with committees. The clinical effort involves performing clinical medicine and instructing students on clinical case material. A clinical veterinarian is also engaged in phone communications, seeing patients in routine and emergency appointments, and communicating with clients and other veterinarians. Classroom teaching efforts include lecturing and teaching labs in one's area of expertise. Research might be performed either as an original investigator or in collaboration with a team."

Research appointment positions might be 90% research with the rest of time involved in teaching and service. "Research assignments require pursuit of original concepts accompanied by grant writing, securing funding, conducting the experimentation and reporting the results in published form," said Gaughan. Publication is ever important and a measure of the veterinarian's value to the university. He noted that the comment "publish or perish" holds true when faculty seek tenure.

While these are the classical tasks experienced within a university venue, Gaughan added, "Task allotment is evolving. There appear to be more and more 'clinical track' appointments that involve 75-80% in-hospital clinical work, and the remaining percentage of time is spent in

classroom teaching and other service."

For other than clinical track faculty positions, research in some form is typically required for advancement and tenure. "Traditionally, a veterinary school in the United States that is accredited by AVMA has had to have documented success in teaching, research and service," said Gaughan. "Some of this is different for the more recently AVMA-accredited veterinary schools, as well as private veterinary schools—many of these have no research base and no teaching hospital."

Green added that those schools must provide that training for veterinary students to meet accreditation standards. They do so in a variety of ways, such as outsourcing and partnering.

How to Find a University Job

"Job positions are posted in appropriate journals, such as JAVMA, AJVR, discipline aligned research journals, and diversity journals," said Green. "They are also posted on state employment sites, electronically on appropriate Listservs and shared among colleges of veterinary medicine."

Gaughan added, "Positions are also posted in species-specific organizations like AAEP or discipline-oriented veterinary specialty organizations (ACVS, ACVIM, etc.)."

What is the Process for Being Hired at a University?

The initial application for hire is presented to a search committee for screening. As Green explained, "Universities require compliance with a well-structured system of policies and procedures defined by the university. Search-and-screen committees include members appropriate for the position, such as a good representation of faculty ranks within and beyond the department, often across the university and sometimes from the constituency. All members undergo formal training in the search-and-screen process to ensure integrity and fairness. There are requirements



Clinical work and teaching often go together in the university vet school setting. Having an advanced degree or board certification is important.

for ensuring diversity and where positions must be posted with required and desired qualifications. Metrics are developed for identification and acceptance of candidates for interview, with consistent interview questions presented to all candidates."

Once the applicant pool is reduced to a short list, in-person interviews are conducted, often to include a formal lecture by the candidate, reported Gaughan. Following review of the applicants by faculty and administration, a choice is made and an offer presented to the candidate. Upon an agreeable negotiation, a final decision is made.

What About Salary and Benefits?

"Rather than a set salary, salaries are usu-

ally determined by the 'going rate' in that discipline, with some disciplines demanding a higher salary than others," said Green.

"Experience, performance, rank and credentials influence salary offers, although final salary still falls within individual university salary guidelines and restrictions," Gaughan said. For example, a senior position hired at full professor level has an entering salary higher than an entry-level assistant professor.

As for typical compensation included in the hiring package, Gaughan and Green noted that one can expect salary, health insurance (medical, dental, other) that likely extends to family, retirement funds in variable amounts and designs dependent on the school, variable paid vacation, sick leave and family benefits, professional travel funds and some form of 'start-up research funds.'

Green added, "Every year, most universities look at faculty salaries to identify inequities, e.g., gender inequity. Outliers are identified and the salary is justified or adjusted. Top faculty performers are rewarded accordingly. Many universities require that the raise pools be distributed according to merit and documentable performance. One challenge is that other universities are constantly recruiting top performers. While this is a way to increase salaries more quickly, retention packages are used to entice faculty not to leave."

Tasks Within a University Setting

Eleanor Green, DVM, DACVIM, DABVP, past president of AAEP, current president of the Association of American Veterinary Medical Colleges (AAVMC) and dean of Texas A&M University's College of Veterinary Medicine and Biomedical Sciences, identified examples of potential tasks of a veterinarian involved with an academic position:

Teaching

- classroom teaching, such as lecture—all four years, from anatomy to surgery
- flipped and blended classrooms—distance education
- trend today towards learning rather than teaching; i.e., high-impact, hands-on learning experiences, clinical skills labs, small group problem solving
- clinicians teaching in hospital as they see cases—the ultimate high-impact, hands-on learning experience
- pathologists, etc., teaching in labs and on necropsy floor
- academicians also being required to participate in the scholarship of education; i.e., developing new educational methods and pedagogical advances, studying which educational methods are most effective
- participation in curriculum development, review and revision
- participation in student admissions process and development and modification of admissions procedures to ensure an effective, fair process
- continuing education—at the college and within the discipline
- client education
- diversity—ensuring that students become culturally aware
- involving students in research—clinical trials, basic research
- international programs—leading study-abroad experiences, arranging international visitors, presenters, visitors

Research

- everything from basic discovery to translational to commercialization
- in all disciplines
- studying animal models of human disease, e.g., cancer, spinal cord disease, traumatic brain injury, diabetes, Duchenne's muscular dystrophy, heart disease
- clinical trials—with owner's permission, enrolling hospital patients into clinical trials, such as testing novel, promising new drugs, treatments, etc.
- developing new diagnostic, therapeutic and surgical procedures
- performing Phase 2 clinical trials, such as for cardiac devices
- epidemiology—population studies, such as disease incidence, risk factors for disease
- creating discoveries leading to intellectual property, patents and licenses
 with the goal of commercialization to make discoveries available to animals and people in society
- pedagogical research
- transdisciplinary research—forming research teams across units, colleges, universities, private entities and across disciplines
- big data research, such as mining data to elucidate trends and to drive decisions

Career Development

It is possible to climb the academic ladder from entry-level assistant professor to tenured associate professor to full professor. Gaughan noted that usually a raise in pay accompanies each step. He said that administrative positions typically pay more than "regular" faculty positions, thus making it more attractive for faculty members to look toward administrative positions as a way to move up the pay ladder.

Green noted that some academic administrative positions come from private, corporate or government settings; however, most administrators come from within faculty ranks, with credentials dependent upon the administrative position. For example, an MBA, hospital administration degree and/or management experience are solid foundations for a hospital director position. In most cases, department heads must be tenured and hold the rank of professor. A DVM degree would most likely be required for a head of a clinical department, while a PhD degree would be required in a basic science department. A DVM degree is typically required for deanships.

Green described the classic path for a faculty member to pursue a tenure track in a clinical department: "The faculty member 1) would have completed an internship, or equivalent experience, and residency program; 2) may have spent time in private practice (or elsewhere); 3) would be board certified in an AVMA-recognized Veterinary Specialty Organization; and 4) may have completed an MS and/or PhD."

As one example of a typical pattern seen in career mobility within the university, initially the candidate is hired as an assistant professor with a six-year plan to reach tenure. To be considered for tenure position requires satisfactory completion of assignments



Many university positions combine teaching, research and other duties.

in teaching, clinics, research and service. Green explained, "While universities may vary slightly, an entry-level assistant professor undergoes a three-year comprehensive review to determine if she/he is progressing well toward tenure to be considered for tenure after six years.

"The tenure process requires submission of a comprehensive tenure packet that is then reviewed by tenure and promotion committees at department and college levels and submitted to the dean for review. The review is based upon the faculty member's assigned responsibilities and expectations for performance. The dean's letter accompanies the packet to the university level. The provost usually makes the final recommendation. Usually tenure and promotion to associate professor are granted in tandem."

Gaughan added, "One can 'go up for tenure' early if desired. Some places will

allow a refusal of tenure on the first effort and permit reapplication the following year. In other cases, if the applicant does not receive tenure the first time, then they are excused from the university system."

The best way to achieve a good outcome for both a veterinarian and the university system is based on maximizing a veterinarian's potential. Gaughan said, "Acquiring and holding a veterinary job at a university should involve identifying a faculty member's strengths and having that faculty member live up to or exceed the expectations associated with those strengths."

Take-Home Message

Green is enthusiastic about her experiences in an academic setting: "I have been in private practice and was very fulfilled in that role. For me, the academic setting is exciting and stimulating every single day. Being a part of constant innovation,

creativity, enormous intellect among colleagues, everyday discoveries of impact, the cutting edge of technology and unlimited scholarly pursuits has kept me tied to the university setting. Combine that with the invigoration resulting from students with their youthful energy and inquiring minds, and I might be entrenched.

"In addition, academic veterinary medicine has afforded me many opportunities I may have missed otherwise—referral-level cases, excellent referring veterinarians, learning by teaching, answering some of the perplexing clinical problems through research, sharing research results, international travel, organized veterinary medicine, administration, leadership training, learning from colleagues across an entire campus and beyond, and working with dedicated, compassionate colleagues. These are just a few of the incredible benefits of being involved in an academic setting."