

# **PRACTICAL CONSIDERATIONS FOR THE ACCOMMODATION OF PERSONS WITH LOW VISION IN VETERINARY MEDICINE**

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## **ABSTRACT**

There is historically low participation of persons with disabilities in veterinary medical practice. The following case study presents matriculation to graduation of a legally blind student with a bachelor's degree in veterinary technology from Purdue University College of Veterinary Medicine. Over the course of this program, our team helped the student with practice-based laboratory and clinical activities by providing technological expertise and accommodations. Along with some of the physical challenges, interventions and their implementation will be discussed. A post-graduation interview was also performed to assess the student's experience as well as obtain useful best practices with an aim to encourage future enrollment of students with disabilities in such specialized disciplines.

## **INTRODUCTION**

Unlike other postsecondary science, technology, engineering and mathematics (STEM) majors, students with disabilities enrolling in professional degree programs, such as medicine, veterinary medicine, dentistry, and optometry, face unique challenges. In addition to needing to prove successful learning in typical lecture and practical coursework, students must also demonstrate proficiency in performing specific tasks, such as taking vitals, drawing blood from a vein, and properly restraining patients safely. These expectations are no different for students with disabilities wishing to enter the veterinary medical field (AVMA, 2017).

In order to graduate and later become licensed to practice veterinary medicine successful performance of specific technical skills is required, which can be challenging for

students with physical disabilities (Tynan, 2001). These technical standards are determined by the college and its accreditation body, such as the American Medical Association (AMA) and American Veterinary Medical Association (AVMA) (AVMA, 2017).

The AVMA is the main accreditation body for institutions educating students to become future veterinarians earning a Doctor of Veterinary Medicine (DVM) and veterinary technicians receiving an associate or bachelor's degree in veterinary technology. AVMA accreditation is a prerequisite for licensure or certification for professional practice in the majority of state licensing boards and credentialing agencies. The purpose of accreditation is to assure prospective graduates meet competency thresholds when entering practice, educational institutions meet national standards, and that public health and safety needs are being addressed (AVMA, 2017).

Despite the fact that there are many licensed veterinarians and veterinary technicians with disabilities that are successfully practicing veterinary medicine in the United States with accommodations and assistance (JAVMA News, 2009; Source, 2016; VIN News, 2012), it is difficult for students with pre-existing disabilities to not only gain admission to, but graduate from veterinary programs, and become licensed veterinarians or veterinary technicians. This is due to both the perceived and actual barriers that exist for these students (Tynan, 2001).

This case study and others like it highlight individuals with disabilities who have graduated from veterinary medical programs and become licensed veterinary professionals are important. They bring attention to and exemplify the far reaching value this inclusive diversity has on the veterinary profession as a whole (JAVMA News, 2016).

## METHODS

### Test Subject

The main subject for this pilot study was a student, accepted into the Veterinary Technology program, with congenital low vision resulting in legal blindness even with corrective lenses. She identified limited visual acuity as her main physical difficulty.

The subject was referred to us by the Purdue Disability Resource Center (DRC) after she requested accommodation services. The DRC accommodation specialist knew of our pilot program to assist students in STEM fields and reached out to us for help. The DRC typically assists undergraduate students in general educational activities but have limited capacity and expertise to assist with the specific and specialized accommodation needs our subject required. Institutional Review Board approval was obtained to observe and interview the subject throughout and at the conclusion of her experience.

### Accommodation Approach

Our team used an iterative approach to find technical accommodations for our subject. The first step was to interview the subject and her course instructors. The next step was to research equipment, including commercial AT, standard off-the-shelf equipment, and customized or adapted technologies. The third step was to train the student and instructors on how to use the recommended technologies and to receive feedback during this training session. This often required modification or replacement of the standard technology solution. Once an AT solution was agreed upon by the subject and instructors, the subject would proceed in using it during course activities. Follow-up inquiries to the subject were made by our team to ensure successful incorporation of the accommodation and facilitation of course activities and objections. This supportive interventions were usually associated with laboratory classes.

### Post-graduation Interview

The subject was interviewed immediately after she had graduated with her bachelor's degree and passed the National Association of Veterinary Technology of America (NAVTA)

national examination. Inclusion of this element was two-fold, to ensure a candid discussion with the subject avoiding any feelings of pressure to provide favorable responses and reflect upon the extent and success of the interventions.

## RESULTS

### Course Accommodation

The subject identified specific learning tasks that she had difficulty performing due to her vision impairment. Figure 1 shows three AT devices used specifically for accomplishing veterinary-related tasks that the subject was required to independently perform during courses. Her ability to independently and accurately perform these practical skills without human assistance is mandatory for passing the vet tech program and to be a licensed veterinary technician.



Figure 1: A. Digital video camera mounted on a light microscope connected to a computer monitor used for histology and cytology activities. B. Head loupe for gross anatomy, surgical procedures, dentistry, and other near observation tasks. C. Monocular for viewing gait behavior in horses and other distant activities.

### Subject Post-graduation Interview Responses

Tables 1-4 represent different categories of questions that span from her initial thoughts about what the vet tech program would be like, what barriers and accommodations she needed

to be successful, her thoughts about pursuing a job in veterinary medicine, and main lessons that she took away from her experiences.

Table 1: Interview Questions on Completing the Veterinary Technology Program

Interview Questions	Subject Responses
What was your view about enrolling in the Vet Tech Program?	"When I applied for the veterinary technician program I even put in my application that I had a legally-blind disability. I didn't think I was going to get in... So I was really surprised when I got in... <b>I never let my disability determine what I do, but I'm also realistic about it.</b> "
Based on your prior experiences, what disability-related challenges did you anticipate?	"I knew it was going to be <b>hard to see the smaller structures</b> , especially when we did anatomy..."; "Same thing with the microscopes."
Reflecting on your vet tech education, what do you think is your proudest moment?	"My proudest moment was coming in for the (Anatomy) final and completely blowing it out of the water and getting an 'A' on that, simply because I actually had tools to help me see the structures that I needed to see..."
	"It made me realize... "You know what...it might take me a little bit longer to do some things, but I can do them." ...just as efficiently as everyone else can, and <b>there's nothing to say that I can't be as good of a technician as my classmates</b> , even though I'm the only one in my class that has a disability."
What changes would you recommend for providing needed support?	"... I think it would be really cool if students like me knew... there were <b>people who could help me</b> . I didn't know that. I just thought coming in, I was just going to have to suffer through it on my own..."

Table 2: Interview Questions Pertaining to Accommodations Provided by the Veterinary Technology Program

Interview Questions	Subject Responses
What kinds of support did you receive from Vet Tech instructors?	"So it was really cool because if they anticipated me having a problem, they would say something and be like, "Oh yeah, next semester we're going to be doing this, so you might want to think about either <b>getting help if you need it, or just being prepared.</b> "
Did you require more time to take tests?	"Normally... I get extra time just because that's what my

	accommodation letter says, but I've never actually had to... Unless it was a test where I had to really be looking at things. Like Anatomy, I actually <b>had to use the extra time simply because it was all sight.</b> "
How about notetaking?	"And now that I have an iPad, it's really nice, because they put all their lectures on BlackBoard so then I can upload the document onto my iPad and then have it sitting right next to me, and then <b>take notes off of my iPad as well listening to the professor.</b> "

Table 3: Interview Questions Pertaining to Beginning a Veterinary Career

Interview Questions	Subject Responses
What are your goals 10 years from now; what do you see yourself doing?	"Ten years from now, <b>I would have liked to establish a behavioral facility in a veterinary clinic</b> , and work with animal behavior, and work with basically animal psychology."; "...that's something I could do on my own and not have to worry about the vision thing."
What barriers do you think you will have to overcome in order to get to that point?	"Well, I know it's going to be really hard going in for job interviews and explaining to potential employers that yes, I have this degree, and <b>yes I can be a technician and I can do all of this, but you also have to understand that I have a disability</b> , so I need a little bit more time to do certain things in regards to my classmates or other technicians, simply because of the fact it does take me a little longer to see things."

Table 4: Interview Questions About Keys to Being Successful or Lessons Learned

Interview Questions	Subject Responses
What advice would you give other students with disabilities?	" <b>Know your limitations.</b> Being – since I was born with my disability... I know what I can and cannot do... I am my own advocate. So don't do something that you know you cannot do safely."
	"At the same coin... <b>don't hesitate to try and do (new) things, 'cause you never know</b> ; you might, with the proper equipment, be able to actually do something you didn't know you could do before."

## DISCUSSION

This case study reaffirms that students with disabilities have reason to be concerned about their success in enrolling in a professional program and graduating to become a veterinarian or veterinary technician. There are not many examples of students with disabilities being successful. Moreover, information on how to navigate through vet programs is scarce. Though efforts to increase diversity of medical education programs have begun, attention to incoming students with disabilities is fairly nascent. Data regarding the number of students from other underrepresented groups, including racial and ethnic minorities, has been collected. Less is known about persons with disabilities (JAVMA News, 2016). This step is crucial in determining the scope of the problem.

College and university disability accommodation specialists often focus on postsecondary and postgraduate education but may not be adequately equipped to help students with disabilities entering professional schools (Duerstock et al., 2014). The search for viable AT for our subject to use was accomplished by a team member (L.H.), who had previous experience as a course instructor in the Veterinary College. Not all solutions were perfect. For example, the field of view of the digital microscope system was much smaller through the monitor than the eyepieces. Therefore, we had to develop a mathematical correction to count the number of cells. This estimate turned out to correctly approximate the instructor's numbers.

## CONCLUSIONS

Veterinarians that become disabled after being licensed often chose medical specialties, such as pathology or radiology, that accommodate their physical limitations, work in a practice that they can refer certain procedures to another veterinarian, and/or have a veterinary technician assist them with procedures. Unfortunately, these options do not extend to veterinary students with disabilities. Limited licensure has been discussed but is controversial due to the current ideal that all veterinarians must be able to handle all situations by themselves (Tynan, 2001).

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