

Hands-on Experiences

for First and Second Year Veterinary Students

There are many opportunities for first and second-year veterinary students to gain **hands-on experience with animals and clinical procedures** prior to the start of their curricular clinical rotations in the third year of the program. Experiences are available within the academic curriculum (classes), club wet labs and field trips, attendance at clinical rounds, participation in clinical “teams”, employment opportunities, externships/field experiences, and various research and clinical volunteer opportunities. These opportunities give students a chance to become familiar with the clinical facilities, faculty, and staff while gaining practical experience and developing clinical skills. **First and second year students have 24/7 access to the Veterinary Teaching Hospital, and they need only wear their clinical smocks and name badges to be welcomed in any section of the clinics.**

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Curricular Experiences - First and Second Year

- **“Foundations in Veterinary Medicine” course series for 1st year students** includes physical exams, veterinary ethics, case-based discussion, client communication experiences and small and large animal handling skills. Students will also learn about history taking skills, how to generate a problem list, and start to generate diagnostic plans.
 - **“Foundations in Veterinary Medicine” course series for 2nd year students** includes physical exams and ophthalmology, cardiology, dermatology, & orthopedic exams in addition to veterinary ethics, case-based discussion, & client communication experiences.
 - **Anatomy** (1st year) – Students learn anatomical structures on cadavers, live animals, and multimedia tools.
 - **Anesthesia machine use** (2nd year)– Students learn the mechanics of both Rebreathing and Non-Rebreathing circuit machines. All students must pass an Anesthesia Machine Practical Exam during their second year, including identifying the components and operation of each system.
 - **Bovine/Equine/Canine Reproduction** (2nd year) – Students practice calving procedures with calf cadavers and mock cows with normal and abnormal presentation and orientation of the calf. They learn how to tease mares with stallions to detect which mares are in estrus, ultrasound mares for pregnancy, and practice procedures for collecting vaginal and cervical cytology.
 - **Community Practice** (1st & 2nd year) – Community Practice is designed to provide the student with an opportunity to evaluate and manage typical cases seen in a bond-centered private practice. The schedule currently includes medicine appointments (preventative health appointments and any non-referred, non-emergency appointments), elective surgery and dentistry. Community Practice provides unique hands-on experience. While all plans need to be cleared with the veterinarian on the service, 4th year students are responsible for the development and implementation of all diagnostic plans and veterinary care in a timely manner. First and second year students are encouraged to volunteer as their class schedule allows and will work with 4th year students honing history taking and physical exam skills as well as learning the standard operating procedures of the James L. Voss Veterinary Teaching Hospital. Interested students should contact Rebecca Ruch-Gallie at rgallie@colostate.edu.
 - **Food & Fiber Animal Field Trips** (1st year) – In small groups, students visit cow/calf operations, cow dairies (conventional and organic), goat dairies, turkey farms, beef feedlots, and lambing farms.
 - **Forelimb amputation** (2nd year)
 - **Heart auscultation** (1st & 2nd year) – Students use stethoscopes with an auscultation machine to identify murmurs, arrhythmias, and normal heart sounds of dogs, cats, and horses.
 - **Neurologic Exams** (1st - year) – Students volunteer their animals in laboratory to practice neurological exams on both normal and abnormal neurological cases.
 - **Neuroanatomical Diagnosis** (1st year) – Using patients with normal and abnormal neurological status, students diagnose the abnormalities based on the neurological exams performed. This is done in person and with multimedia presentations.
- Physical exams** (1st year) – Students volunteer their animals in laboratory to practice physical exams.
- **Surgical Procedures** (1st & 2nd year) – Students practice instrument handling, knot tying, suture patterns, and surgical techniques.

Club Wet Labs and Field Trips (Student Chapters)

- **American Animal Hospital Association**
 - > Canine physical exam wetlab (Students work closely with faculty and learn how to perform a thorough physical exam...an essential diagnostic tool for any veterinarian.)
 - > Abdominal ultrasound wetlab (Students perform abdominal ultrasound and learn proper technique using live dogs.)
 - > Clinical procedures wetlab (Students learn and practice common clinical procedures including bone marrow sample collection, trans-tracheal wash, and cerebrospinal fluid tap.)
 - > Dental radiography wetlab (Students learn and practice how to take dental radiographs at a local, specialty dental clinic.)
- **American Association of Bovine Practitioners**

- > Feedlot Necropsies: Saturday morning necropsies are performed by students. A clinician is available to talk through diagnosis and answer questions about necropsy technique, sampling procedures and potential causes of death.
- > Bovine Physical Exam Lab: students practice rectal palpation, gastric intubation, blood draws, epidural blocks and gastro-intestinal auscultation.
- **American Association of Equine Practitioners** www.aaep.org
 - > Wetlabs: Joint Injection Labs, 2 per year: Students practice injecting joints on equine limbs. Clinicians are available to demonstrate and help assist students in finding the joints.
 - > Farrier Short Course: A 2-day short course focusing on what veterinarians need to know about trimming and shoeing horses. The first day is primarily lecture and the second day is a lab on equine limbs. This is an excellent way to learn anatomy and how to handle the tools.
 - > Reproduction Short Course: A 2-day short course focusing on equine reproduction. Students learn how to palpate mares, artificially inseminate mares, collect stallions, and analyze semen.
 - > Dental Short Course: A 2-day short course focusing on equine dentistry. Students learn how to do a physical exam on the equine oral cavity, what instruments are used in equine dentistry, and how to fix equine oral problems. The students get to use the knowledge they learn on horses and learn how to operate the instruments.
 - > Nasogastric intubation lab: Students learn how to pass a nasogastric tube and practice passing one on a horse. This lab also includes a demonstration of an abdominocentesis.
 - > Ophthalmology lab: Students learn how to perform an equine ophthalmic exam, learn the anatomy of the eye, and practice suturing corneal and eye lid lacerations. .
 - > Equine Chiropractic and Saddle Fitting Lab: With the help of a DVM Doctor of Chiropractic, students learn the basic techniques of equine chiropractic techniques, as well as the biomechanics of saddle fitting.
 - > Equine lameness and pre-purchase exam lab: Students learn about lameness evaluation and testing procedures in addition to general pre-purchase exam guidelines under direction of Equine Medicine Faculty.
 - > SCAAEP Equine Conference: A 2-day conference covering many current topics in equine practice across all aspects of equine medicine.
 - > Large Animal Emergency Team: Volunteer to be on call for after hours emergencies of horses or animals.
- **American Association of Feline Practitioners** <http://www.cvms.colostate.edu/aafp/>
 - > Feline Physical Exam Wet lab: Practice your physical exam skills on live felines!
 - > Procedures Wet lab: Practice techniques every veterinarian should know, including CSF sampling, esophageal tube placement, bone marrow aspiration, thoracocentesis, and cystocentesis (procedures are practiced on cadavers).
 - > Field Trip to Rocky Mountain Wildlife Conservation Center: See BIG cats up close and tour the facility that provides these animals with a chance to live out their lives comfortably.
 - > Feline Neurological Exam Wet lab: Practice your neurological exam skills.
 - > Cat Handling Techniques Wet lab: Learn how to handle and restrain your feline patients!
- **American Association of Small Ruminant Practitioners** <http://www.csuaasrp.org/>
 - > Small Ruminant physical exam lab: Students learn basic information and anatomical differences between small ruminants then practice hands-on physical exams of many small ruminant species.
 - > Sheep Reproduction Laboratory: Students have the opportunity to volunteer with local producers to aid in laparoscopic artificial insemination of ewes.
 - > Small ruminant show veterinary checks: Students assist local veterinarians with show health checks for camelids, goats, and sheep at county fairs, regional, and national shows.
 - > Sheep ultrasound lab: Students learn about proper sheep handling, positioning, and ultrasound techniques for pregnancy checking ewes.
 - > Camelid Shearing Day: Students volunteer at the VTH Camelid shearing day to help shear clients' alpacas and llamas.
 - > Camelid Castration Day: Students participate in castrating client-owned camelids at the VTH.
- **American College of Veterinary Pathologists**
 - > Saturday Necropsy: Students help with the pathologists on necropsy Saturday morning.

- > Weekly Morbidity and Mortality Rounds with Diagnostic Laboratory Pathologists, consisting of discussing pathology from cases that came to the hospital that week.
- **American Holistic Veterinary Medicine Association**
 - > Canine massage
 - > Acupuncture (Canine, Feline, Equine, Bovine, exotics, and military pets)
 - > Organic dairy veterinary medicine
 - > Integrative oncology medicine
 - > Bach Flower Remedy therapy
 - > Small animal physical therapy
 - > Integration of western and complementary medicine in small animal and exotic practices
- **American Veterinary Society of Animal Behavior**
 - > Manners for Mutts- clicker training of local shelter animals
 - > Clicker training wetlabs for your own pets
 - > Low stress animal handling in combination with the Feline Practitioners Club
- **Colorado State University Pet Hospice Program**
 - > This is a volunteer program to reach out to the local community through providing end of life support for client's pets. First year through third year veterinary students undergo a training program, and are then assigned to cases from the VTH and surrounding area to assist in the end of life decision-making process and work as a liaison between the client and their veterinarian.
- **Colorado Veterinary Medical Association www.colovma.com**
 - > Students have the opportunity to attend the annual CVMA conference for free (under the sponsorship of a Colorado veterinarian) to network, attend CE conferences, and socialize with local veterinarians.
 - > Students are welcome at CVMA's monthly meeting to network with local veterinarians.
 - > CVMA's veterinary mentorship program: Students are paired with a veterinarian in Colorado for mentorship during their four years of veterinary education.
- **International Veterinary Medicine Club**
 - > Students have the opportunity to travel to international countries to perform vaccination, provide animal care, and provide animal education to local clients and animals
- **Laboratory and Research Club**
 - > Meetings involve faculty/clinicians presenting information on their scientific endeavors.
 - > Wet labs include a rodent dissection by one of the laboratory animal medicine residents. This offers students an opportunity to get an in depth view of small mammal anatomy which is not provided by the core courses in the veterinary program.
 - > Wet labs involve laboratory techniques including flow cytometry and ELISAs.
 - > Rabbit Spay and Neuter: Students will get to learn handling and medical procedures on rabbits, then spay or neuter with the help of the laboratory animal residents.
- **Pain Management Club**
 - > Nerve Block Lab: Students practice nerve blocks for various regions of the body for specific surgeries and procedures as well as epidurals on cadavers.
 - > Acupuncture Lab: Lecture given about the scientific basis, implementation of acupuncture and the benefits. Demonstrations given on volunteer pets.
 - > Students have the opportunity to attend a tour of a local clinic that focuses on rehab and pre-surgical therapy.
 - > Pain Management Team: Spend time in the hospital going over the pain management strategies for the patients in the hospital with an anesthesiologist.
- **Radiology Club**
 - > Weekly rounds on interesting radiology cases.
- **Student Association of Veterinary Surgeons**
 - > Lectures in flexible endoscopy, ophthalmology, cardiology, oncology/ limb spare, Dr. Turner's Comparative Orthopedic research, Small Animal GI emergency, Equine GI emergency, Food Animal GI emergency, neurosurgery and fracture repair in large and small animals.
 - > Monthly wet labs; equine intestinal resection/anastomosis, Fracture IM Pinning, SA bandaging, LA bandaging/casting, gowning/gloving, Laser Sx (continuing education), Suturing (instrument ties, hand

ties, cadavers). We open these labs up typically to 25-40 people depending on the amount of equipment required and the number of doctors needed.

- > Mentor/mentee program specifically designed for people interested in pursuing a surgical residency.
- **Student Chapter of the Association of Shelter Veterinarians** <http://www.cvmb.colostate.edu/scasv>
 - > Annual micro-chipping clinic for the school and community.
 - > Opportunity to go to a local shelter and aid in physical exams and learn about their shelter.
- **Students for Human/Animal Relationship Education** <http://www.argusinstitute.colostate.edu/define.htm>
- **Student Veterinary Emergency & Critical Care Society** <http://www.cvmb.colostate.edu/sveccs/>
 - > Volunteering in the Critical Care Unit
 - > Emergency Procedures Wet Lab
 - > FAST Ultrasound Wet Lab
 - > First Aid Day for the Community
 - > Small Animal CPR lecture and lab
 - > Clinician Lectures and Case Presentations
- **Students for Human/Animal Relationship Education** <http://www.argusinstitute.colostate.edu/define.htm>
- **Theriogenology Club**
 - > Ewe ultrasound wetlab- student were able to take turns ultrasounding sheep and determining their pregnancy status.
 - > Mare Reproduction Wetlab- student are exposed to stallion collection, semen evaluation, and mare artificial insemination techniques. Basic reproductive anatomy is reviewed.
- **Zoological Medicine** http://www.cvmb.colostate.edu/zoo_med_soc/
 - > Behind-the-scenes tour of the Downtown Denver Aquarium (formerly Ocean Journey): Tour led by Dr. Campbell, Exotics Department clinician and veterinarian for the aquarium. Highlights include: observe training sessions of the exhibit's mammals, tour of quarantine area, learn about aquarium veterinarian job, and petting the manta rays.
 - > Tour of the hospital at the Denver Zoo: Dr. Knightly leads students through the hospital, explaining how she uses operant conditioning to make Veterinary procedures easier (such as giving vaccinations, weighing newborns, and anesthetizing animals). She shows students the necropsy area, surgical suites, quarantine, and a nursery, where the baby and the veterinarian are on exhibit!

Clinical Rounds

- **Grand Rounds** – Each 4th year student must present one case during the year to the entire veterinary school. All students and faculty are welcome and encouraged to attend. These are great learning experiences for both the student presenter and those in attendance. The case presented is a real case that the student has worked on during one of his/her rotations. There is a question/answer session following each presentation. Grand Rounds are presented each Friday morning.
- **Noon-time Livestock and Equine Rounds** – Livestock and Equine clinicians will present cases and various topics during the lunch hour. All students are encouraged to attend.
- **Twice-daily rounds on each service** (morning and afternoon) – Each rotation group reviews discharged patient cases, discusses ongoing cases, and prepares for incoming cases. Clinicians expect students to prepare and be able to answer questions pertaining to each case on the service. Though required of 3rd and 4th year students on the service, students from the 1st and 2nd years of the program are invited to attend rounds as time permits.

Clinical Seminars

- Advances in Clinical Research Seminar Series
 - > Clinical faculty and residents present cutting edge research projects
 - > First Monday of each Month, VTH-ACC 120, 11:30-12:30
- Practice Management Seminars

Clinical Teams (1st, 2nd, 3rd, and 4th year)

- **Foal Care Team** - On-call teams care for and observe neonates and mares in the barn. Monitoring as necessary, the 2-person foal care team will stay with the foal and notify clinicians of the status of the neonate.
- **Large Animal Emergency Team** - The Large Animal Emergency Team is a great chance for students to get hands on experience in the large animal barn before the 3rd and 4th years of school. Students carry a pager and are "on-call" for equine and livestock medicine emergencies. Some of the emergencies include colics, lacerations, dystocias, septic crias and foals, etc. After-hours help is always needed and students get to do much more than just stand around. LAET is a great opportunity for students to familiarize themselves with the veterinary hospital, meet clinicians and residents, and get great hands on experience. LAET is also open to anyone regardless of experience or interests.
- **Llama Care Team** - Each group of two students is assigned to two llamas, which they are expected to visit and take on walks, trail hikes, etc. These llamas are residents of the Veterinary Medical Center.
- **Small Animal Surgery Team** - There is an on-call schedule for students to observe small animal surgeries. If there are surgeries in progress, or if any surgical emergencies are admitted, students on the SAST are called to Small Animal Surgery to help with and observe surgery.

Employment Opportunities

- Equine Emergency Surgery Technicians
- Livestock Medicine and Surgery Technician's Intern
- Radiology Technicians
- Small Animal Emergency Technicians

Externships/Field Experiences

- Click here for Links & Information – <http://www.cvmbs.colostate.edu/cvmbs/externinfo.htm>
- Humane Society Veterinary Medical Association Field Services (HSVMA) - <http://www.ruralareavet.org>
- International Veterinary Medical Association Club – The objective of the International Veterinary Medicine Club is to encourage veterinary student involvement in the field of international veterinary medicine in conjunction with the International Veterinary Student Association (IVSA) and to provide opportunities for members to gain professional knowledge in this field. The club sponsors guest speakers who talk about their international veterinary medicine experiences and sponsors veterinary education based trips to foreign countries for CSU PVM students. Faculty Advisor: Dr. Kristy Pabilonia
- Rural Veterinary Experience, Training, and Service- www.R-VETS.org
 - > Equine veterinary care and castration provided at low cost to horses on reservations in North Dakota and South Dakota.
- VIDAS (International Veterinarians Dedicated to Animal Health) <http://www.vidas.org>

Research Opportunities

- Merck Summer Research Program – This is a 10-week summer program funded by Merck at CSU.
- Individual lab opportunities working with clinicians on various research projects.

Volunteer Opportunities

- All clinical departments eagerly want 1st and 2nd year students to observe and assist as enthusiasm and time permit
- CSU Pet Hospice – volunteer opportunity through Argus Institute at CSU, open to 1st - 3rd year students – <http://www.argusinstitute.colostate.edu/pethospice.htm>
- Ride with ambulatory services (equine and livestock)
- Watch your email – clinical faculty send out emails requesting 1st and 2nd year participation in various field projects.
- **Always ask** – If you have a special area of interest, just ask a faculty or staff member involved if there are volunteer opportunities.