Traditional Laboratory Animal Skills List

A minimum of 80% (72 of 90 skills) of the skills must be mastered and performed within the last 5 years prior to submitting application. Mastery is defined as being able to perform a task consistently and completely without being coached or directed no less than four times period mastery requires having performed the task in a wide variety of patients and situations.

Husbandry Requirements

	Skill	Case Log Number(s)	DVM or VTS Signature
1.	Ability to recognize and identify different species of rodents, lagomorphs, marsupials, primates, canines, felines and mustelids commonly used as research models.		
2.	Mastery of husbandry requirements for the most common canine, feline, mustelid, rodent, marsupial, lagomorph and primate species including, but not limited to nutritional requirements, caging/housing, substrate, temperatures, humidity, lighting, grooming, bathing habits.		
3.	Expertise in the application of husbandry requirements in the research setting to maximize patient care, disease control and comfort.		
4.	Proficiency in the education of research staff in the proper care of individual species.		
5.	Understanding and use of various enrichment techniques for a minimum of two species classified within this skills category.		
6.	Understand the zoonotic disease risks when working with various species within this skills category. A minimum of two species must be described with potential of disease risks.		
7.	Proper storage of animal feed.		

General Nursing

	Skill	Case Log Number(s)	Vet or VTS Signature
8.	Perform a comprehensive physical exam: identify normal/abnormal eyes/ears/nares/oral/vent/cloaca, heart/lung sounds, pain assessment, body condition score, hydration status for purposes of study candidacy and health evaluation.		
9.	Recognize signs of respiratory failure and shock.		
10.	Accurately and efficiently triage patients presenting for emergent conditions, recognize adverse effects related to a research procedure or chemical catalyst.		
11.	In association with other medical team members, administer CPR (following VECCS RECOVER guidelines), evaluate effectiveness, and troubleshoot therapy.		
12.	Thorough knowledge of substances that are being used in research protocol and their potential negative side-effects.		
13.	Efficient and accurate calculation of drug doses, solutions, and IV fluid rates for mammals species.		
14.	Demonstrate thorough knowledge of metric conversions.		
15.	Mastery of venipuncture in thoracic limb vessels in healthy, sick, and/or debilitated animals. Cases should describe the thoracic limb vessel used.		

16.	Mastery of venipuncture in pelvic limb vessels in healthy, sick, and/or debilitated animals. Cases should describe the pelvic limb vessel used.		
17.	Mastery of venipuncture in tail vessels in healthy, sick, and/or debilitated animals.		
18.	Mastery of jugular or peripheral IV catheter placement in a variety of sites in healthy, sick, and/or debilitated animals.		
19.	Mastery of intraosseous catheterization in a variety of sites in healthy, sick, and/or debilitated animals.		
20.	Set up and maintain an IV fluid pump and syringe pump and be able to troubleshoot equipment malfunction.		
21.	Mastery of various methods of centesis (cysto, percutaneous, thora and abdominal). A minimum of two techniques must be referenced.		
22.	General knowledge of the reproductive system and cycles for a minimum of two species for research and breeding purposes.		
23.	Proper placement and/or maintenance of at least two (2) of the following types of temporary enteral feeding tubes: nasogastric, nasoesophageal, esophageal, gastric and jejunal in at least one species.		
24.	Ability to safely handle and restrain different species with minimal stress to the animal and describe methods. A minimum of two species should be reflected in the case logs.		
25.	Set up and perform non-invasive blood pressure monitoring, evaluate blood pressure status, and troubleshoot equipment malfunction.		
26.	Set up and monitor heart rate and rhythm with ECG monitoring, recognize normal and abnormal tracings, and troubleshoot equipment malfunction.		
27.	Set up a pulse oximeter, evaluate oxygen status, understand its limitations and troubleshoot equipment malfunction.		
28.	Administration of fluids and medications via various parenteral administration sites (IM, SC, IV, IO, IP). A minimum of three administration routes must be references and described.		

Anesthesia/Analgesia

	SKILL	**Case Log Number(s)**	**Vet or VTS Signature**
29.	Assign appropriate ASA status after reviewing patient history, PE, and diagnostic results in collaboration with a veterinarian for at least two different species.		
30.	In collaboration with a veterinarian, determine appropriate anesthetic and peri-anesthetic protocols to provide effective pain management and maximum anesthetic safety and effectiveness for at least two different species.		
31.	Perform local and regional nerve blocks. Describe the type and technique for at least two types of local or regional nerve blocks.		
32.	Evaluate the effects of common pre-anesthetic, induction, and maintenance drugs with protocol rational and potential variables to the research.		
33.	Evaluate and respond to adverse reactions to and/or complications from pre-anesthetic, induction, and maintenance medications.		
34.	Implement appropriate pre-oxygenation techniques and know the rationale.		
35.	Mastery of endotracheal intubation and tube placement with regard to size, length, safe technique, and when to use cuffed vs. non-cuffed tubes in routine and emergent situations for at least two different species.		

36.	Thorough knowledge of the risks associated with intubation and the appropriate steps to avoid these risks for at least two different species.		
37.	Set up a capnography end-tidal CO2 monitor, evaluate ventilation status, and troubleshoot equipment malfunction.		
38.	Set up a continuous respiratory rate monitor, evaluate respiratory rate status, and troubleshoot equipment malfunction.		
39.	Perform manual intermittent positive pressure ventilation with an anesthesia breathing bag and evaluate its effectiveness.		
40.	Mastery of blind intubation in at least one species of rodent or lagomorph.		
41.	Set up and monitor temperature (esophageal, rectal, external), evaluate patient status, and troubleshoot machine malfunction.		
42.	Implement techniques to prevent hypothermia/hyperthermia and resolve these issues by safely and effectively using devices such as warm air blankets, circulating water blankets, IV fluid warmers, radiant heating devices, and incubators pre and post surgically.		
43.	Monitor and evaluate patient status and anesthetic depth using established protocol parameters such as outward involuntary physical response (i.e. jaw tone, palpebral reflex, eye position), blood pressure, ECG, pulse oximetry, heart rate, respiratory rate, and ventilation status for at least two different species.		
44.	Administer and evaluate the effects of IV fluid (crystalloid and colloid) during anesthesia.		
45.	Ability to assess appropriate extubation time with regard to various species, (such as monkeys versus ferrets), regurgitation/aspiration, and emergence from anesthesia.		
46.	Set up, maintain, and troubleshoot a non-rebreathing system.		
47.	Set up, maintain, and troubleshoot a rebreathing system.		
48.	Set up, maintain, and troubleshoot an anesthesia machine (oxygen tank, vaporizer, CO2 absorbent, scavenger system).		
49.	Set up, maintain, and troubleshoot an anesthetic induction chamber.		
50.	Set up, maintain, and troubleshoot a waste gas scavenging system.		
51.	Ability to intubate lagomorphs.		
52.	Ability to safely setup and monitor an animal using the forced mask technique.		

Surgical Nursing

	Skill	**Case Log Number(s)**	**Vet or VTS Signature**
53.	Mastery of the unique and varied individual surgical nursing requirements for at least two different species, such as positioning with special holding devices and protocol requirements.		
54.	Extensive knowledge of and ability to set up necessary equipment and supplies for a variety of surgeries (i.e. reproductive tract, GI tract, ophthalmic, orthopedic, soft tissue, rigid and flexible endoscopy, laparoscopy/coelioscopy) for at least two different species and three different surgery types must be reflected in the case logs.		
55.	Coordinate the process of preparation, safe use, and maintenance of suction equipment and electrocautery units.		
56.	Coordinate the process of preparation and positioning of patients for a variety of surgical procedures (i.e. reproductive tract, GI tract,		

	ophthalmic, orthopedic, soft tissue, rigid and flexible endoscopy, laparoscopy/coelioscopy) for at least two different species and three different surgery types must be reflected in the case logs.		
57.	Coordinate pre and post-operative care of surgical patients keeping in mind best husbandry practices.		
58.	Mastery of the care and maintenance of surgical instruments.		
59.	Mastery of proper surgical sterilization procedures (autoclave, ethylene oxide, glutaraldehyde, etc.).		

Laboratory

	Skill	**Case Log Number(s)**	**Vet or VTS Signature**
60.	Utilize, maintain, and troubleshoot in-house hematology and clinical chemistry analyzers and evaluate results for at least two different species.		
61.	Demonstrate the ability to perform at least 2 different in-house clotting tests (BMBT, ACT, Platelet evaluation, PT, APTT).		
62.	Properly collect, handle, and store samples of excretion, secretion, and effusion for laboratory evaluation.		
63.	Properly collect, handle, and submit cytology and samples for laboratory evaluation.		
64.	Properly collect, handle, and submit samples for bacterial and fungal culturing.		
65.	Properly collect, handle, and submit samples for histopathology.		
66.	Ability to perform a gross necropsy for a minimum of two species and collect tissue samples per project protocol.		
67.	Ability to work with micro volumes of blood for research samples or health status of animals.		
68.	Ability to assess the best euthanasia technique for preservation of tissues for research samples and understand the AVMA recognized methods of humane euthanasia for at least two different species.		
69.	Demonstrate the ability to obtain samples for tests such as, but not limited to, CBC, clinical chemistries, PCR, serology, and virology. This includes: appropriate fasting protocols, correct timing of sample collection, and correct sample collection and handling.		

Diagnostic Imaging

	Skill	**Case Log Number(s)**	**Vet or VTS Signature**
70.	Demonstrate accuracy and efficiency in positioning patients for a variety of radiographic studies (thorax, abdomen, spine, skull, extremity, pelvis, dental) of diagnostic quality for at least two different species.		
71.	Ability to position animals for advanced imaging techniques such as MRI, CT scan or PET scan.		
72.	Perform and/or demonstrate the ability to set up and assist in contrast studies (i.e. GI studies, double contrast, cystograms, myelograms,		

	epidurograms) including the set-up of necessary equipment, patient preparation, and administration of contrast media.		
73.	Demonstrate the ability to set up, maintain equipment, and assist with or perform ultrasonography.		

Dentistry

	Skill	**Case Log Number(s)**	**Vet or VTS Signature**
74.	Thorough knowledge of dental anatomy for all species mentioned in case logs.		
75.	Efficiently perform a comprehensive oral exam to identify oral pathology and anatomic abnormalities for all species mentioned in case logs.		
76.	Ability to perform and/or assist with incisor teeth trimming OR cleaning.		

Pharmacology

	Skill	**Case Log Number(s)**	**Vet or VTS Signature**
77.	Extensive knowledge of pain medications and their application in mammalian species, including but not limited to opioids, NSAIDS, local anesthetics.		
78.	Extensive knowledge of all groups of antibiotics, their mechanisms, clinically relevant side effects, and accurate evaluation of therapeutic responses.		

Behavior

	Skill	**Case Log Number(s)**	**Vet or VTS Signature**
79.	Knowledge of basic behavioral learning concepts (i.e. punishment, positive reinforcement, rewards, operant conditioning).		
80.	Ability to recognize appropriate and inappropriate behaviors in all species mentioned in applicant case logs.		
81.	Familiarity with a variety of training tools and their uses.		
82.	Train research staff in recognizing and managing aggressive and/or stereotypic behavior in the research setting (i.e. use of proper restraint techniques, muzzles, SSRI's, anxiolytics, sedation, etc.).		

Leadership Roles

	Skill	**Case Log Number(s)**	**DVM or VTS Signature**

83.	Supervise or assist with the creation and/or maintenance of all appropriate facility records and logs in compliance with regulatory guidelines (e.g. radiology, surgery, anesthesia, laboratory, controlled substances)		
84.	Instruct and supervise staff in the accurate recording of medical information for GLP or GLP like studies.		
85.	Establish and supervise the maintenance of appropriate sanitation and nosocomial protocols for a research veterinary facility including patient and laboratory areas.		
86.	Educate research staff in the recognition and proper handling and housing of patients with potentially infectious diseases.		
87.	Proficient at developing and providing clinical skills or protocol related training in a clear and accurate manner at the level research staff understands (i.e. oral and written form including educational handouts).		
88.	Command of animal welfare guidelines set by the USDA especially in the areas of pain management and humane endpoints.		
89.	Proper storage, handling, recording and disposal of controlled substances.		
90.	Outstanding interpersonal and public relations skills dealing with the sensitivity surrounding animal research.		

I, the undersigned, declare that I have read the entire ALAVTN application packet. I further attest that the above-named applicant has achieved the ALAVTN definition of mastery for the above skills that are marked with my signature.

_____/_____
Printed Name and Degree Signature

_____/_____
Printed Name and Degree Signature

_____/_____
Printed Name and Degree Signature

_____/_____
Printed Name and Degree Signature

_____/_____
Printed Name and Degree Signature

Please provide the names and credentials of all persons who have signed this form attesting to your mastery of advanced skills in clinical practice.