

**Program Assessment Report
DBCALFS ANSC PhD Program
University of Arkansas
May 2016**

1. Student Learning Outcome #1:

Graduate students will demonstrate a basic knowledge of statistics, an in-depth knowledge of their specific thesis research area and a general knowledge of other research in the Department. Areas of emphasis may include animal nutrition, genetics, physiology, muscle foods, parasitology and forages.

A. Assessment Measure 1 – Indirect

- Completion of the dissertation and successful defense to the faculty.
- Results:
 - Thus far in the 2015-2016 Academic Year (fall and spring) there was 1 dissertation defense and that student passed, a 100% success rate.
 - The target for an acceptable outcome is 100% - thus this goal was met.

B. Assessment Measure 2 – Direct

- During the qualifying exam and dissertation defense students will be assessed using a rubric by the faculty members serving on their respective graduate committees.
- Results:
 - This rubric has not yet been developed, so it is not yet being used.
- Recommendation:
 - The assessment committee will develop a rubric and use it at the conclusion of the student's defense or exit exam.

2. Student Learning Outcome #2

Graduate students will demonstrate problem solving skills.

A. Assessment Measure 3 – Direct

- During the qualifying exam and dissertation defense students will be assessed using a rubric by the faculty members serving on their respective graduate committees.
- Results:
 - This rubric has not yet been developed, so it is not yet being used.
- Recommendation:
 - The assessment committee will develop a rubric and use it at the conclusion of the student's defense or exit exam.

3. Student Learning Outcome #3

Graduate students will demonstrate critical thinking skills and be able to organize, analyze, and apply scientific and technical information

A. Assessment Measure 4 – Direct

- During the dissertation defense students will be assessed using a rubric by the faculty members serving on their respective graduate committees.

- Results:
 - This rubric has not yet been developed, so it is not yet being used.
- Recommendation:
 - The assessment committee will develop a rubric and use it at the conclusion of the student's defense or exit exam.

4. **Student Learning Outcome #4**

Graduate students will be able to communicate effectively in a) oral and b) written form.

A. Assessment Measure 5 – Direct

- During the qualifying exam and dissertation defense, students will be assessed using rubrics for a) oral and b) written communication skills by the faculty members serving on their respective graduate committees.
- Results:
 - These rubrics have not yet been developed, so they are not yet being used.
- Recommendation:
 - The assessment committee will develop a rubric and use it at the conclusion of the student's defense or exit exam.

5. **Overall Recommendations**

The assessment committee should develop rubrics that evaluate problem solving, critical thinking skills, as well as oral and written communication skills. The rubrics would be utilized at the conclusion of the student's defense or exit exam.

6. **Action Plan**

- **The student committee will develop rubrics that will be created to assess graduate student problem solving, critical thinking, as well as oral and written communication skills.**

2016 Survey of ANSC Graduates

Major(s): _____

Student ID: _____

Minor(s): _____

Do you have a pre-professional/pre-vet concentration? Yes No

Do you have an equine concentration/minor? Yes No

On a scale of 1 – 5, please rate your general competence in the areas listed below.

1 = I don't feel competent in this area; 5 = I feel I have a general competence in this area

	Area of Competence	Score (1-5)
1	Physiology	
2	Genetics	
3	Nutrition	
4	Meat Production	
5	Animal production management & animal welfare and sustainability practices	
6	Animal handling, restraint and general animal care skills	
7	Technical competency	
8	Environmental consciousness	
9	Ethical responsibility	
10	Leadership ability	
11	Oral communication	
12	Written communication	
13	Critical thinking/problem solving skills	
14	Basic and applied research skills	
15	Creativeness	
16	Writing and presenting scientific information in a professional manner	

For Equine concentration/minor ONLY:

17	Equine reproduction management	
18	Fundamentals of equine care	
19	Equine evaluation	
20	Equine marketing	

For Pre-professional, Pre-vet ONLY:

21	General knowledge of advanced disciplines of basic sciences and mathematics	
22	Fundamentals of animal health	

Have you applied to vet or grad school? Yes No

Have you been accepted to vet or grad school? Yes No If yes, where? _____

If not attending grad/vet school, do you have an offer of employment? Yes No

If you have an offer of employment, where? _____

Please list one or two content areas that you feel the ANSC Dept. should improve:

Please list one or two strengths of the overall ANSC Dept.:

This survey will be used for departmental assessment purposes. Honestly completing this survey will help professors in the Department of Animal Science better serve students toward the goal of obtaining a quality degree.

Name _____ ID # _____

1. Class Status:
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
 - e. Continuing Ed. student
2. ANSC Degree Plan
 - a. General ANSC
 - b. Pre-Professional
 - c. Equine
 - d. Other, not ANSC
3. Citizenship:
 - a. U.S.
 - b. Other
4. Gender:
 - a. ___ Male
 - b. ___ Female
 - c. ___ Transgender
 - d. ___ Prefer not to respond
5. Race/Ethnicity:
 - a. ___ African American
 - b. ___ Asian/ Pacific Islander
 - c. ___ Other
 - d. ___ Hispanic/Latino
 - e. ___ Caucasian
6. Age:
 - a. ___ Under 18
 - b. ___ 18-19
 - c. ___ 20-21
 - d. ___ 22-24
 - e. ___ 25 and above
7. Are you considered in-state or out-of-state for tuition purposes?
 - a. ___ In state
 - b. ___ Out of state
8. How many hours do you work for pay?
 - a. ___ None
 - b. ___ 1-10 hrs. /week
 - c. ___ 11-20 hrs. /week
 - d. ___ 21-30 hrs. /week
 - e. ___ More than 30 hrs. /week

9. Please check the organizations that you have been associated with:

- a. FFA
- b. 4H
- c. Judging team
- d. All of the above
- e. None of the above

10. Transfer student?

- a. No
- b. Yes, transferred from 2 year college
- c. Yes, transferred from other University or 4 year college

11. What type of background do you come from?

- a. Rural
 - b. Urban
-

12. Milk fever...

- a. is most common in animals consuming lush spring pasture
- b. can be caused by feeding a diet deficient in Ca prior to calving
- c. results in muscle spasms and paralysis due to low blood K
- d. could be treated by infusing Ca and/or PTH into the blood of the cow

13. Which of the following hormones may be given to sows to stimulate uterine contractions?

- a. Oxytocin
- b. Oxycontin
- c. Estrogen
- d. Swine growth hormone

14. What is the most reliable sign of estrus?

- a. Holds tail out
- b. Lordosis or standing heat
- c. Rides other animals
- d. Excessive grunting

15. This protein hormone is produced and released by the anterior pituitary and stimulates the formation and retention of the corpus luteum. It also initiates ovulation.

- a. Progesterone
- b. Estrogen
- c. Luteinizing hormone
- d. Insulin.

16. What hormone is important in seasonal breeders, is inhibited by light, and the major source is the pineal gland?

- a. Melatonin
- b. Estrogen
- c. Oxytocin
- d. Progesterone

17. Where does spermatogenesis occur?
- Seminal vesicles
 - Seminiferous tubules
 - Prostate
 - Epydidymus
18. Hormone produced and released by the hypothalamus that causes release of follicle stimulating hormone and luteinizing hormone is:
- Progesterone
 - Prostaglandin F2alpha
 - Gonadotropin releasing hormone
 - Estrogen
19. The type of placenta attachment common to ruminant animals is:
- Diffuse
 - Discoid
 - cotyledonary
 - zonary
20. Hormone produced by the corpus luteum and/or placenta that maintains pregnancy is:
- placental lactogen
 - prolactin
 - relaxin
 - progesterone
21. Phase of the estrous cycle when progesterone is the dominant hormone:
- estrus
 - diestrus
 - proestrus
 - metestrus
22. Farm animal that has a specific site (ovulation fossa) on their ovary where ovulation occurs:
- sow
 - mare
 - cow
 - ewe
23. During the early stages of a fast, it is critical that glycogen from liver and muscle, and amino acids from body tissues supply the precursors for the critical nutrient _____. Without this nutrient, the animal loses consciousness.
- Fatty acids
 - urea
 - phosphorus
 - glucose

24. Endocrinology is one of two internal communication systems within vertebrates. Ligands synthesized and released by the anterior pituitary directly control many physiological systems. Which of the following systems is not directly affected by the anterior pituitary?
- Growth
 - Lactation
 - Stress
 - Sense of smell
25. Which breed of dairy goat has very small almost-nonexistent ears??
- Dorper
 - Boer
 - La Mancha
 - Oberhasli
26. From the mating of two homozygous polled parents, what percentage of the offspring would you expect to have a homozygous polled genotype? (You may assume that polled is dominant)
- 0%
 - 25%
 - 50%
 - 75%
 - 100%
27. If a heterozygous black bull is mated to 100 red cows, approximately how many of the resulting calves will be red?
- 0
 - 25
 - 50
 - 75
 - 100
28. When a Charolais bull is mated to a black Angus cow, a gray calf results. That is an example of _____.
- Shared dominance
 - Incomplete dominance.
 - Complete dominance
 - Over dominance.
29. What is the term for those traits in which there is no sharp distinction between phenotypes, with a gradual variation from one phenotype to another? Usually gene pairs and environmental influences are involved.
- Qualitative traits
 - Quantitative traits
 - Dominant traits
 - Non-dominant traits

30. What term describes the appearance and performance characteristics of an animal?
- Heterozygote
 - Mitosis
 - Genotype
 - Phenotype
31. What is the general model describing phenotypic variation?
- Phenotype = Genotype + Environment
 - Phenotype = Genetics + Diet
 - Phenotype = Breed Average + yearly adjustment factor
 - None of the above
32. What is a SNP?
- A location in the genome where a single nucleotide variation exists used for genetic associations used in breeding.
 - A short nuclear proliferation effect
 - A genetic phenomenon that always causes variation in traits
 - A small nucleotide parameter
33. What is a valid description of an epigenetic effect?
- An effect that appears to be genetic but is not
 - An effect that is partially impacted by the environment
 - An effect on DNA methylation in the parents that impacts the phenotype of the offspring
 - Both B and C
34. Which of the following terms can be defined as: the expression of genes at one locus depends on alleles present at one or more other loci.
- Incomplete dominance
 - Single genetic decision
 - Single trait selection
 - Epistasis
35. The proportion of phenotypic variation that can be passed from parent to offspring is referred to as:
- Selection differential
 - Selective breeding
 - Genotype
 - Heritability
36. Which of the following is the fourth stomach compartment in ruminants, known as the true stomach?
- Rumen
 - Reticulum
 - Oakum
 - Abomasum

37. What is the term for a high-acid condition in the rumen (pH 5.3-5.7) caused by rapid consumption or overconsumption of readily fermentable feed; may cause digestive disturbance and/or death?
- Colic
 - Acidosis
 - Black leg
 - Bloat
38. What mineral and vitamin are deficient in neonates suffering from White Muscle Disease?
- Iron and vitamin B
 - Selenium and vitamin C
 - Iron and vitamin A
 - Selenium and vitamin E
39. In a typical corn-soybean meal based diet for a monogastric, which amino acid is most limiting?
- Methionine
 - Tryptophan
 - Lysine
 - Tyrosine
40. Which sulfur containing amino acid is most likely to be deficient in swine?
- Tryptophan
 - Glycine
 - Leucine
 - Methionine
41. What are the two main gases produced in the rumen?
- Methane and oxygen
 - Methane and carbon dioxide
 - Oxygen and helium
 - Oxygen and carbon monoxide
42. Ruminant's ability to break down _____ allows them to utilize forage more efficiently than monogastrics.
- Saturated fats
 - Cellulose
 - Lignin
 - Simple carbohydrates
43. Volatile Fatty Acids (VFA's) are an important source of _____ for ruminants?
- Energy
 - Protein
 - Fat
 - Fiber
44. The fermentative organ of hindgut fermenters, comparable in function to the rumen, is the:
- Colon
 - Cecum
 - Rectum
 - Small Intestine

45. Which of the following is a fat-soluble vitamin?
- Vitamin K
 - Pantothenic acid
 - Vitamin B12 (cobalamin)
 - Vitamin C
46. Which of the following is NOT an essential amino acid?
- Isoleucine
 - Histidine
 - Riboflavin
 - Threonine
47. What is the most abundant nutrient in the body?
- Minerals
 - Water
 - Protein
 - Carbohydrates
48. Which of the following agency is responsible for meat grading?
- The Food Safety Inspection Service (FSIS) within USDA
 - The Agricultural Marketing Service (AMS) within FDA
 - The Agricultural Marketing Service (AMS) within USDA
 - The United States Meat Export Federation (USMEF)
 - Meat grading is not regulated by a governmental agency.
49. What is the average dressing percentage for a beef animal?
- 52%
 - 62%
 - 72%
 - 82%.
50. What is name of the pigment responsible for fresh meat color?
- Myoglobin
 - Myosin
 - Myostatin
 - Marbling
51. To what minimum temperature should ground beef be cooked to ensure safety?
- 100 C
 - 120 F
 - 145 F
 - 160 F
 - 185 F

52. _____ The point at which Fat begins to increase in proportion and muscle begins to decrease in proportion of carcass wt.
- onset of fattening
 - Point of inflection
 - Birth
 - Puberty
53. _____ This type of fat develops within the muscle and is referred to as Marbling.
- Subcutaneous
 - Intramuscular
 - Visceral
 - Intermuscular
54. Proper refrigeration of foods is important because:
- Most harmful bacteria are killed at temperatures below 40 degrees F.
 - Most harmful bacteria do not grow at temperatures below 40 degrees F.
 - It prevents cross-contamination of food
 - Refrigeration is not important
55. Which of the following is true about Organic Beef producers?
- Cattle may have been given antibiotics if they were sick and their welfare was compromised
 - Forage from pastures that have not had pesticides for 1 year is allowed for cattle marketed as organic
 - The USDA states that this beef is safer and more nutritious
56. During skeletal muscle contraction, what ligand initiates skeletal muscle contraction and how is calcium directly involved with skeletal muscle contractions?
- Acetylcholine stimulates muscle fibers, and calcium binds to calmodulin
 - Acetylcholine stimulates muscle fibers, and calcium binds to troponin
 - Oxytocin stimulates muscle fibers, and calcium binds to calmodulin
 - Oxytocin stimulates muscle fibers, and calcium binds to troponin
57. Lactating animals work very hard to provide a nutritious product. Milk ejection is caused by contraction of the smooth muscle myoepithelial cells. What ligand initiates myoepithelial cell contraction and how is calcium directly involved with smooth muscle contractions?
- Acetylcholine stimulates muscle fibers, and calcium binds to calmodulin
 - Acetylcholine stimulates muscle fibers, and calcium binds to troponin
 - Oxytocin stimulates muscle fibers, and calcium binds to calmodulin
 - Oxytocin stimulates muscle fibers, and calcium binds to troponin
 - The USDA has a set of national standards regulating using the organic label
58. In order to achieve optimal passive transfer of antibodies from the dam to neonate, colostrum must be ingested by the neonate by _____ after birth.
- 24 hours
 - 48 hours
 - 3 days
 - None of the above

59. In order to be compliant with Beef Quality Assurance standards, vaccines should only be given in the _____ area of cattle.
- rump
 - flank
 - neck
 - none of the above
60. How much do beef calves typically weigh (live weight) at birth?
- 20 - 30 lbs
 - 30 - 40 lbs
 - 60 - 90 lbs
 - 120 - 140 lbs
61. Which body condition score would be expected to be the "fattest?"
- 3
 - 4
 - 5
 - 6
62. Which disease is detected using the Coggins test?
- Encephalitis
 - Equine infectious anemia
 - Equine protozoal myelitis
 - Tetanus
63. How many days is the average gestation length in sheep?
- 114 days
 - 148 days
 - 3 months, 3 weeks, 3 days
 - 204 days
64. What is the standard bull to cow ratio for a mature breeding bull?
- 1:10 to 1:12
 - 1:24 to 1:30
 - 1:60 to 1:75
 - 1:100 to 1:120
65. Sometimes tall fescue can cause problems for pregnant broodmares. What specifically can cause fescue to be a problem?
- A chemical produced by the plant
 - A chemical produced by an endophytic fungus living in the plant
 - An allergic reaction by the broodmare from touching the plant
 - An insect living on the leaves of the plant

66. We test the specific gravity of a dam's colostrum in order to estimate the _____ content.

- a. Calcium
- b. Vitamin
- c. Immunoglobulin
- d. Nutrition
- e. Antioxidant

67. Which of the following best describes stage 2 parturition in the dam?

- a. The muscles of the croup and vulva relax, the udder begins to wax, and milk physiology changes.
- b. The mare appears uneasy, is very sweaty, and paces often. She may appear mildly colicky.
- c. The rupture of the placental membranes and the expulsion of the fetus
- d. Expulsion of the placenta

68. Proper refrigeration of foods is important because:

- a. Most harmful bacteria are killed at temperatures below 40 degrees F.
- b. Most harmful bacteria do not grow at temperatures below 40 degrees F.
- c. It prevents cross-contamination of food
- d. Refrigeration is not important

69. The point at which pressure in the flight zone results in forward vs. backward movement is the:

- a. Flight Zone
- b. Point of Balance
- c. Blind Spot
- d. Squeeze Chute

70. Ideally, a beef cow should calve every:

- a. 6 months
- b. nine months
- c. year
- d. two years