

## Teaching/Undergraduate & Graduate Education: Teaching Session I - Assessment & Evaluation

**674 Evaluation and accreditation of agricultural research and teaching programs.** J. R. Swearingen\*, *AAALAC International, Frederick, MD.*

Considerable misunderstanding still exists regarding the process which AAALAC International uses for accrediting agricultural research and teaching programs. The objective of this presentation is to clarify the methodology used by AAALAC International to evaluate agricultural programs. It will include a review of the standards used by AAALAC International for evaluating the program of animal care and use specifically for agricultural programs and walk through the process of how a site visit is conducted. Specific examples of what is expected from both facility and programmatic perspectives will also be presented. This review will include a look at common physical plant issues such as barns, fences, pastures and paddocks and programmatic issues such as farrowing crate size, winter calving, and extension sites. With increasing scrutiny from the public sector on issues of animal well-being in production agriculture and agricultural research and teaching, the ability to demonstrate sound animal care will continue to grow in importance. AAALAC International accreditation is a confidential, external peer-review system utilizing experts in the fields of agricultural research and teaching. Accreditation not only provides for public accountability, but also establishes a quality assurance mechanism which emphasizes performance standards and peer review. These benefits, as well as others, will be discussed as they apply to agricultural programs. Having a full understanding of the AAALAC International accreditation process as it pertains to agricultural research and teaching will help attendees make informed decisions about the need and value of accreditation for their programs.

**Key Words:** Accreditation, Agricultural, Research

**675 Development and use of a learning outcomes based assessment tool.** J. L. Beckett\*, *California Polytechnic State University, San Luis Obispo.*

Both universities and accrediting agencies are increasing efforts directed toward assessing the degree to which students are learning and the effectiveness of educational programs. However, assessing learning is a challenging and multi-layered task. Well defined and measurable learning outcomes assessment tools can facilitate the process and make it more useful and meaningful. At Cal Poly, a software program has been developed to create the learning outcomes process, print rubric scoring tables, data collection sheets, track and analyze data and print reports. A 4-point rubric scoring system (outstanding, proficient, approaching proficiency and needs improvement) was developed for assessing student learning along with criteria to categorize student work into those 4 proficiency levels. Questions embedded in final exams of capstone courses have been the primary artifacts used for assessment. Because several (36) learning outcomes have been defined and it is not appropriate, practical, or even desirable to assess all artifacts for all learning outcomes each time assessment is conducted, a flexible rubric scoring system was developed to rapidly create individualized rubric scoring sheets for assessing the specific learning

outcomes to be evaluated in each set of artifacts. Additionally, a system for data collection was developed, including standard operating procedures. A data tracking system was created to simplify data entry and promote ease of data analysis and tracking. Because learning outcomes are aligned with programmatic, College and University objectives, data can be mined for trends by learning outcome, or by any combination of learning objectives. With these tools, faculty time is used effectively and the assessment coordinator can quickly and efficiently prepare for each assessment event, summarize the data, and expeditiously provide results to the faculty for rapid feedback and evaluation. By engaging faculty in the assessment process and using tools to simplify the assessment procedures, implementation of meaningful assessment has been put in place to provide guidance in curriculum development and ultimately enhance student learning.

**Key Words:** Education, Assessment, Learning Objectives

**676 Assessment of predictors of critical thinking ability in animal science undergraduates.** L. M. Morgan\*, *Clemson University, Clemson, SC.*

Critical thinking and independent decision-making are essential for graduates seeking employment. Previous research shows that seniors in a college of agriculture scored lowest on a critical thinking ability construct, and higher on basic cognitive ability and applications ability constructs. Multiple predictors have been studied to identify their influence on critical thinking ability. Possible factors studied have included: age, gender, GPA, learning style, and classification. Therefore, the focus of this study was to quantify the critical thinking ability of students in selected classrooms in an animal science department and determine what demographic information served as a reliable predictor of critical thinking ability. The Watson-Glaser Critical Thinking Appraisal (WGCTA) test, form A and B, from Harcourt Assessment provided means to objectively assess a student's critical thinking ability. The WGCTA seeks to provide an estimate of an individual's standing on a composite of attitude, knowledge, and skills by means of evaluating the student's ability to think critically in five categories: 1) Inference; 2) Recognition of Assumptions; 3) Deduction; 4) Interpretation, and 5) Evaluation of Arguments. Categories are weighted equally and final score is on a 0-80 scale. Each student (n=90) completed a questionnaire to determine demographic information with respect to: age; gender; classification; GPA, and previous judging experience. All data were analyzed for mean and standard deviation of final scores. Raw scores were then standardized and compared using a z-score. Mean score was 58.4 and standard deviation was 7.00. Multiple indicators for critical thinking ability were observed; students in the 18-20 age range (n=42), those who reported  $\geq 3.4$  GPA (n=26), and those who had experience judging in 4H and on a competitive judging team (n=3) scored higher than 87% of all students tested. Classification does not appear to influence critical thinking ability. Age, GPA, and previous judging experience do appear to predict critical thinking ability.

**Key Words:** Critical Thinking, Watson-Glaser

**677 Critical thinking dispositions of undergraduates in two animal science courses at the University of Georgia.** T. D. Pringle\*, J. L. Douglas, and J. C. Ricketts, *The University of Georgia, Athens*.

Students in two University of Georgia (UGA) Animal Science (AS) courses were utilized to evaluate the critical thinking disposition (CTD) of a sub-population of UGA undergraduates and to compare CTDs across two courses taught using different teaching methods. Fall semester 2006 students enrolled in the Introduction to Animal Science (ADSC 2010; n=71) and Live Animal and Carcass Evaluation (ADSC 3200; n=18) courses were asked to complete a CTD Assessment (UF-EMI) at the beginning of the semester and a modified UF-EMI at the end of the semester, which included a retrospective and a current assessment. Students were asked to respond to 26 prepared statements using a 5-point scale (1=strongly disagree to 5=strongly agree). Responses to the statements were divided into three constructs. Engagement (E) which measures students' predisposition to searching for opportunities to use reasoning, anticipating situations that require reasoning, and confidence in reasoning ability; cognitive maturity (M)

which measures predisposition to being aware of the complexity of problems, being open to other view points, and being aware of their and other's biases and predispositions; and innovativeness (I) which measures predisposition to being intellectually curious and having a desire to know the truth. Data were analyzed using SPSS, with  $P < 0.05$  used for significance. At semester's beginning, standardized and summated mean scores for E, M, I and total disposition were 79.27 (43.60), 77.97 (31.19), 80.15 (28.05), and 79.07 (102.79), respectively. Across all categories, UF-EMI scores were higher at the end of the semester than at the beginning. Change in UF-EMI was higher for students in the upper level ADSC 3200 course than the ADSC 2010 course. While AS majors had lower UF-EMI scores than non-majors, AS majors had greater UF-EMI gains in all constructs. Lastly, year in school did not result in differences in UF-EMI scores, while surveyed females scored somewhat higher than males. These data provide a snapshot of the CTD of UGA AS students and suggest that hands-on, experiential learning courses are important to the CT development of AS students.

**Key Words:** Critical Thinking, Disposition

## Teaching/Undergraduate & Graduate Education: Teaching Session II - Curricular Innovation

**678 Food Animal Scholars Program: An early selection program for undergraduates at North Carolina State University interested in pursuing a career in veterinary medicine working with food animals.** W. L. Flowers\*, C. R. Parkhurst, J. A. Moore, C. S. Whisnant, S. L. Pardue, and C. M. Williams, *North Carolina State University, Raleigh*.

The College of Agriculture and Life Sciences (CALs) and the College of Veterinary Medicine (CVM) at North Carolina State University developed a program to identify and prepare students for careers in food animal medicine. The program began in 1992 and was called the Swine and Poultry Scholars program. Initially, one student interested in swine and one in poultry were selected during the first semester of their freshmen year by a committee of CALs and CVM faculty. Students were chosen on the content of an essay and recommendations. Those selected were guaranteed admission to the CVM after completing their undergraduate degree in either Animal or Poultry Science provided they met all the minimum qualifications required including minimum GPA and extracurricular requirements. Each scholar was assigned two mentors – one in CALs and one in the CVM. Responsibilities of the mentors involved meeting with the students to monitor academic progress and provide extracurricular opportunities for them to interact with veterinarians and researchers in the swine and poultry industries. Upon admission into the CVM, there was no binding commitment for students to specialize in food animals. In 2003, the program was expanded to include 6 recipients and 2 alternates with an interest in any of the food animal species and renamed the Food Animal Scholars Program. Selection of students was moved to the second semester of their sophomore year. Participation in extracurricular activities with food animals and GPA were included in the selection criteria. The mentoring program remained basically the same and students were required to enroll in the food animal track upon entry into the CVM. Between 1994 and 2003, only 28% (4/14) of the Swine and Poultry Scholars selected have completed (or are in the process of completing) the program and either are working (or intend to work) with food animals upon receiving their DVM. Since the changes implemented

in 2003, 73% (16/22) of the Food Animal Scholars are still in the program.

**Key Words:** Teaching, Veterinary Medicine

**679 Design and development of a synchronously-delivered graduate course designed for the evaluation and practice of scholarship in animal sciences.** L. A. Kriese-Anderson<sup>1</sup> and D. R. Mulvaney\*<sup>1,2</sup>, <sup>1</sup>*Auburn University, Auburn, AL*, <sup>2</sup>*Biggio Center for the Enhancement of Teaching and Learning, Auburn, AL*.

The professional life of academics is highly dependent on effective scholarship and the ability to evaluate publications for credibility. Often times, graduate programs rely heavily on transfer of scholarship skills from major professors. Built on a premise that there is a need by graduate students for development of these skills early in their career, our objective was to design and pilot a masters level graduate course targeting learning outcomes of increased awareness, knowledge and skills around scholarship to include proficiency in: conducting literature searches, evaluating research, scientific literature, writing technically for grant proposals as well as writing to transform technical scientific findings into more simplified forms of scholarship appropriate for various and broadened audiences. The course established concepts of working in a learning community (LC) and employed discussion of philosophies of scholarship, methods of research, evaluation of scientific writing, evaluation and practice of written proposals for funding and the process of publishing research findings. The course was delivered synchronously using videoconferencing technologies. Each of the eleven students played a pivotal role in professionally researching facts about writing and evaluating literature and preparing this information for others in the class. Students considered themselves members of a LC thus taking ownership and then chose to energetically and actively, bring learning opportunities to other members of the LC.