

## Teaching/Undergraduate and Graduate Education

**W254 Factors associated with students' self-reported amount of learning in dairy science courses.** R. R. Rastani\* and M. A. Wattiaux, *University of Wisconsin, Madison*.

Our objective was to study factors that were associated with students' self-reported amount of learning in undergraduate courses offered by the University of Wisconsin– Madison, Department of Dairy Science. Data included departmental course evaluations (n=774) from Fall 2003 through Spring 2005 for 14 courses (8 required, 6 elective). The course evaluation consisted of 12 items that students answered anonymously on a likert-type scale of 1 to 5 (for items 1 to 10, 1=not at all and 5=very much; for items 11 and 12, 1=lowest 20% and 5=highest 20%). Item 8 was optional, and it was omitted from the analysis due to a large amount of missing data. Spearman correlations were used to evaluate the relationship between item 4 (I learned a lot in this course) and the 10 other items: (1) I value the material/ topics covered in this course ( $r=0.59$ ), (2) This course stimulated my interest in the subject ( $r=0.72$ ), (3) This course encouraged me to think ( $r=0.73$ ), (5) Individual class meetings or lectures were well planned and effective ( $r=0.57$ ), (6) This course was well organized and provided a coherent understanding of the subject ( $r=0.59$ ), (7) Useful supplementary materials were available ( $r=0.36$ ), (9) The instructor was approachable and seemed to enjoy teaching ( $r=0.51$ ), (10) The grading system was appropriate, clearly explained, and fairly applied ( $r=0.43$ ), (11) Overall, I rank this instructor ( $r=0.55$ ), and (12) Overall, I rank this class ( $r=0.65$ ). The above correlations were significant at the level of  $P < 0.001$ . The correlations were not affected by course type (required vs. elective), but varied based on intended class level. Student-centered evaluation items (1, 2 and 3) had the lowest relationship with self-reported amount of learning in Freshman classes relative to Junior and Senior classes. Typically, instructor or course-centered items (5, 6, 7, 9, 10, and 11) had a weaker correlation than student-centered items with students' self-reported amount of learning. Students' overall class ranking appeared to be heavily based on self-reported amount of learning.

**Key Words:** Learning, Evaluation, Student-centered

**W255 Leadership development through leadership action plans.** D. R. Brink\*, L. D. Moody, and M. M. Peterson, *University of Nebraska, Lincoln*.

Business and industry desire entry level employees who possess strong leadership and interpersonal skills. A partnership of the University of Nebraska-Lincoln departments of Animal Science and Agricultural Leadership Education and Communication was established in 2001 to incorporate leadership development in the Animal Science curriculum. Animal Science students who elect to join the Animal Science Leadership Academy (ALA) participate in four leadership development seminars. ALA students develop leadership action plans (LAP) during the second semester of their four semester ALA program. Students enroll in a 1-credit seminar. In the seminar, faculty and students discuss: dimensions of professional development, leadership identity development models, sources of motivation and rewards, and effective coaching. Each student develops an action plan to achieve at least three development goals in three areas: personal qualities, leadership skills and communication skills. Task timelines, witnesses, support team, rewards and potential sources of resistance are identified. Written and oral progress reports are presented during the semester. Student evaluations indicate the most valuable parts of developing LAP are the

understanding of leadership development as a process and sources of motivation. Eighty-eight percent of the students reporting either agreed or strongly agreed that they will continue their leadership development by using the concepts learned in completing the LAP.

**Key Words:** Leadership, Plan, Teaching

**W256 Promoting student engagement in the animal sciences: Incorporation of an academic pedigree project into an undergraduate animal breeding and genetics course.** C. J. Kojima\*, *University of Tennessee, Knoxville*.

Undergraduates majoring in Animal Science often progress through their program without learning much about the history of the discipline or the faculty who make up the department. In an effort to increase student-faculty interaction, stimulate interest in research in Animal Science, and increase general engagement of students in a genetics course, an "Academic Pedigree" project was incorporated into the UT Animal Science core Animal Breeding and Genetics class. Groups of 3-4 students were each assigned a faculty member; the project was to trace the faculty member's "lineage" as far as possible through personal interviews, email, telephone, and internet searches. The faculty member provided the students with two "parents" (most often thesis advisors and dissertation mentors), institution where the member studied under that parent, the years that the student studied with that parent, and any other pertinent information the member wished to volunteer. One set of students were responsible for the general summation of results for the department as a whole. The students were required to present a poster of their findings, including a brief summary or abstract, calculation of inbreeding coefficients (if any), and a pedigree-styled depiction of their faculty member's lineage. A seminar was arranged so that all posters were presented and faculty and graduate students of the department could view the posters and discuss the findings with the presenters. Each faculty member graded the posters on accuracy, style, and participation of the presenters. The project grade was determined by averaging the faculty evaluations. The project was very well received by faculty and students alike; many students greatly enjoyed their telephone and online conversations with "parents" and "grandparents" of their faculty member. The exercise served not only to increase the interest level of the students but also to teach basic breeding principles. Further modifications of this teaching tool may be to single out sub-disciplines each semester the course is taught; this semester the theme is "geneticists".

**Key Words:** Teaching, Genetics, Undergraduate

**W257 Teaching animal behavior research to animal science students.** D. B. Imwalle\*, S. E. Becker, and L. S. Katz, *Rutgers University, New Brunswick, NJ*.

In our section of Research in Animal Science, students enroll for varying numbers of credits, for which they participate in different research activities throughout the semester. Undergraduates are expected to work three hours per week per credit. They must keep a journal that describes their efforts. An aim of this course is to teach students large animal behavioral endocrinology research. Behavioral endocrinology experiments often require days of animal preparation (such as hormone treatments) before the behavior tests. Graduate

students assign undergraduates specific research tasks (e.g. working goats, observing behaviors, recording behavioral data, etc.). For each experiment, the graduate student explains the rationale and hypothesis being tested, and trains the students to collect behavioral data in a standardized fashion. In one project, the behavior tests are videotaped for student viewing. Thus, students can observe these tests in addition to having performed tasks they were assigned at the farm. In the classroom students are grouped to record the behavior of specified animals. The data from each group is averaged and the variability of those data is used to teach the students the concept of inter-observer reliability. In a second project, the class is gaining experience in estrus detection of a dairy heifer herd. The students were taught three behaviors (mounting, standing to be mounted, and escaping from a mount attempt) using a video tape. Students access a web-based signup calendar and observe cattle at any time any day of the week, having been told that most estrus behavior in cattle occurs at night. To assess the effectiveness of this estrus detection program based upon the random observation schedule of a large number of students (n=30), these data are compared to estrus detection based upon an electronic activity monitoring system. Including students in research affords opportunities for them to work with animals and to learn animal behavior. Also, graduate students learn to be mentors to enthusiastic, trained students.

**Key Words:** Teaching, Animal behavior, Research methods

**W258 Development of a course in embryo transfer and related technologies for undergraduate students in agriculture.** C. R. Youngs\*, *Iowa State University, Ames.*

Embryo transfer is an animal biotechnology that is experiencing a rapidly increasing rate of adoption in production agriculture. Embryo transfer is a comprehensive set of procedures involving the production and collection of preimplantation embryos from genetically superior females (donor females) and subsequent transfer of the harvested embryos into the uteri of recipient females whose estrous cycles have been synchronized with that of the donor. Initial use of embryo transfer in the commercial livestock industry involved the surgical collection and transfer of embryos, and, hence, it was considered a veterinary procedure. However, with the advent of non-surgical embryo collection and transfer techniques, some states have now revised their state veterinary practice acts to allow non-veterinarians to perform embryo transfer for a fee. A course in embryo transfer and related technologies (e.g., embryo cryopreservation and in vitro fertilization) was developed to provide undergraduate students in agriculture with sufficient background information so that they could either pursue further training in the field or alternatively engage in meaningful dialogue with embryo transfer technicians whom they employ. The objective of this presentation is to provide readers with an overview of the development, implementation, and 10-year experience in teaching this

course at Iowa State University. Prerequisites for the course include a course in reproductive physiology, and students who enrolled in the course without the necessary prerequisite achieved lower mean course grades than students who had completed the prerequisites. Student enrollment for the initial course offering was 9, but enrollment grew to as many as 38. Student evaluations of the course indicated that a hands-on laboratory course would be helpful, and such a course was developed and implemented. Three students who have taken these courses are now actively engaged in commercial embryo transfer, while other students are actively using embryo transfer in their livestock breeding operations.

**Key Words:** Curriculum development, Embryo transfer

**W259 Introduction of a laboratory component to a therapeutic horseback riding course.** M. Nicodemus\* and K. Slater, *Mississippi State University, Mississippi State.*

In the fall of 2001 a 3 credit lecture course in the introduction of therapeutic horseback riding (TR), ADS 3233, was offered for the first time at Mississippi State University. A survey given before and after the course indicated the majority of the students recommended a hands-on component. In the fall of 2005 ADS 3233 was offered for the first time with a weekly laboratory component. For both the 2001 lecture only TR course (01) and the 2005 lecture/laboratory TR course (05) a 22 question survey was completed on the first (S1) and the last (S2) days of lecture with answers given as strongly agree (SA), agree (A), disagree (D), or not applicable (NA). 83% of the 01 students had experience in TR, while only 20% of the 05 students had TR experience. For 01 S1, D was given by the majority of students (67%) for 7 of the questions, while the same questions in S2 the majority of the students (67%) either answered SA or A. These questions concerned the setting up of TR programs, working with the medical and educational communities, and finding TR resources. For 05 S1, D was given for the same questions (5 of the 7 questions) concerning similar topic areas as those reported in 01 for 40% of the students, while the same questions in S2 100% of the students either answered SA or A. For S2 05, the majority of answers (60%) in the survey were SA or A. The largest shift in answers for 01 concerned TR horse selection in which 40% answered D in S1 and 40% answered SA in S2. The greatest answer shift for 05 concerned TR career possibilities in which 70% answered D in S1 and 50% answered SA in S2. 33% of 01 students intended to make a career in this field, while 40% of 05 students had the same intentions. 100% of the 05 students answered SA or A concerning the helpfulness of the laboratory to understanding TR. Therefore, survey results supported the conclusions that the addition of a laboratory to ADS 3233 was beneficial for the students further understanding of TR.

**Key Words:** Horse, Therapeutic riding, Teaching