

Teaching/Undergraduate and Graduate Education: Teaching in the Animal Sciences

501 The Academic Roadmap: A web-based tool for improving student recruitment, retention and success in the agricultural sciences. K. H. Petersson*, D. Grossman-Garber, C. English, T. P. Husband, D. P. Murray, and A. I. Veeger, *University of Rhode Island, Kingston.*

Today's students are frequently unaware of the diversity of career trajectories and opportunities available to them in the field of agriculture. The scientific challenges that will be faced in the coming decades are daunting, making it imperative that talented young minds are attracted into the field of agriculture. The Academic Roadmap (AR) is a web-based tool developed at the University of Rhode Island to improve student recruitment, retention, and overall student success in higher education in general and agricultural-related fields in particular. The AR is a 'one-stop' portal to an academic discipline, its associated course(s) of study, and related career tracks. In a sense, it is a 'user-friendly' way for students to access information on careers and relevant majors from one source. The AR contains general information on the field, as well as detailed information on curriculum, learning outcomes, experiential learning opportunities, careers, and graduate programs for each academic discipline. Each of these sections of the AR is linked, showing the student how courses taken relate to learning outcomes which then relate to career options down the road. Also contained in the AR are 'hot topics' in the field so students can learn about the real-world applications of their studies and on-going research efforts. Past and present student biographies and links to virtual labs and field trips bring the site to life. Currently AR's have been developed for four disciplines, one of which is Animal & Veterinary Science. Efforts are currently underway to personalize the roadmaps for students through a 'My Academic Roadmap' module that is linked to the university's student records database. Student response to the AR, obtained through an online survey, was overwhelmingly positive. Ninety-eight percent of students surveyed (n=328) found the website to be valuable/very valuable. The long-term goal of this project is to disseminate the completed AR to land-grant institutions nationwide via a multi-state, integrated USDA project to help improve training and retention of students in agricultural-related fields.

Key Words: Education, Recruitment, Advising

502 Capstone experiences in animal and poultry sciences: Opportunity and challenge. C. M. Wood*, W. E. Beal, E. A. Dunnington, D. E. Eversole, H. Jiang, A. P. McElroy, R. K. Splan, and M. L. Wahlberg, *Virginia Tech, Blacksburg.*

The Department of Animal and Poultry Sciences (APSC) at Virginia Tech recently revised the undergraduate curriculum using a holistic and comprehensive process. The most significant new requirement is a two-credit capstone experience that every student must complete within 45 credits (three terms) of graduation. Specific learning objectives include: 1) employing critical thinking skills to acquire, analyze, interpret, and integrate information from a variety of sources; 2) solving problems in authentic or realistic situations in the animal sciences; 3) planning and completing a project pertaining to each student's discipline and field; 4) demonstrating verbal, visual, and written communication skills;

5) contributing to a team effort; 6) assessing and describing potential contributions to society; and 7) effectively competing for career and/or post-baccalaureate opportunities. By its nature, each capstone experience will be unique to the student who designs it in consultation with his/her advisor. To aid students in that process, a new sophomore-level seminar course was developed that includes drafting a capstone experience proposal. The capstone proposal must clearly outline how the learning objectives listed above will be achieved and how student attainment of the objectives will be assessed. Proposals must be submitted to a faculty committee for approval no later than the term prior to undertaking the capstone experience. Potential capstone experiences in the animal sciences could include, but are not limited to, Study Abroad, Field Studies, Internships, Undergraduate Research, Independent Studies, and formal coursework at the senior or masters level. With more than 450 APSC majors, the challenges presented by this new requirement are many but are outweighed by the tremendous opportunities.

Key Words: Undergraduate Education, Experiential Learning, Capstone Experience

503 The Graduate Experience Program. J. A. Atkins*¹, D. L. McNamara², and G. W. Jesse¹, ¹*University of Missouri, Columbia*, ²*University of Wisconsin, Platteville.*

The objective of the Graduate Experience Program is to offer undergraduates insight into graduate education and career opportunities within animal science. This is a one credit problems course that is taught and organized by graduate students. The class meets every other week to discuss topics concerning graduate school aimed at helping students decide whether graduate education is the right decision for them. These topics include exercises in developing career goals and what degree they need to meet those goals, applying to graduate schools, writing résumés, graduate education expectations and philosophies, reading and discussing scientific articles, and presenting research at professional meetings. Each undergraduate student has a primary graduate student mentor who meets with them individually and ensures the undergraduate's scientific interests are being met. During these meetings, undergraduates gain first-hand experience with collecting samples, performing lab work, attending seminars, participating in journal clubs, attending scientific meetings, and many other activities important in graduate training. Undergraduate students are required to meet with at least two other graduate students in the department in order to experience a broad range of research opportunities within the division. At the end of the semester the undergraduates present their experiences from this course, and report on three graduate programs, professional schools, or job postings that appeal to them and what steps they need to take in order to be good candidates. Graduate students involved in the course learn to be effective mentors by attending to the needs of the undergraduate students and developing the course material taught which improves their scholarship of teaching. To date, 22 undergraduate students have enrolled in the graduate experience program and more than 30 graduate students have been actively involved in mentoring and teaching this class.

Key Words: Undergraduate and Graduate, Teaching, Mentoring

504 A holistic approach to undergraduate curriculum review and revision in animal and poultry sciences: Process and results. C. M. Wood*, W. E. Beal, E. A. Dunnington, D. E. Eversole, A. P. McElroy, and R. K. Splan, *Virginia Tech, Blacksburg*.

With more than 450 majors and nine degree combinations, the undergraduate program in the Department of Animal and Poultry Sciences (APSC) at Virginia Tech is large and complex. The department recently conducted a holistic review of the undergraduate curriculum that involved all faculty in APSC and collaboration with colleagues in other departments. This effort resulted in a complete revision that yielded 29 new and updated courses, a new option, and two revised minors. Changes included dropping public speaking and adding statistics; an increased emphasis on life skills, guidance in curriculum choices and career planning through a series of courses in the freshman, sophomore and senior years; dropping one senior production course from the requirements, and adding animal handling laboratories, an animal products course and a capstone experience requirement. The Production-Business Option was strengthened with the addition of an advanced livestock enterprise analysis course, and an additional companion animal course was added to the elective list, along with several other courses. The review and revision effort was led by the department's Undergraduate Education Committee (UEC). Eight discipline and species committees, chaired by UEC members, reviewed the entire curriculum from their particular perspectives. Departmental outcomes assessment information, demographic trends of APSC students, university requirements, and peer department programs were studied to project the needs of students entering college in the next five to ten years and to formulate draft recommendations. Two faculty workshops yielded a framework that was 95% complete, and course proposal writing groups were formed. A complete set of recommendations was subsequently submitted to university governance. Implementation of the revised curriculum began in Fall 2007 and will be phased in over the next two years as those freshmen proceed through their undergraduate careers.

Key Words: Undergraduate Education, Curriculum Revision, Capstone Experience

505 The challenges and opportunities of teaching a virtual introduction to animal science course. M. Latour*, *Purdue University, West Lafayette, IN*.

In 2000, a virtual version of introduction to animal sciences was created and over the past eight years, the course has reached more than 350 students in over 20 countries and has paved the way for significant funding into the university to support ongoing programs. Like the on-campus course it is designed to teach the fundamentals of animal agriculture but through a series of course modules ($n=20$). Through the eight year period, studies have been conducted using these students to examine the following: a) impact of virtual teaching assistants vs. the professor and b) the acceptance of course modules and what makes some more appealing to students. Our studies show that online teaching assistances are significantly ($P \leq 0.005$) preferred vs. the professor in the online course, but the reverse if true on campus; that is, on campus students significantly ($P \leq 0.003$) choose to communicate the professor vs. the on campus teaching assistance. In the online course, students ranked one module significantly lower ($P \leq 0.03$) when compared to the other 19 modules with two modules being intermediate to both. The nature of the low ranking module was somewhat expected, but the other two modules that were intermediate to the top ranking and low rankings,

were found to be significantly ($P \leq 0.01$) beneficial to the students and incorporated some face-to-face interaction. In addition to these studies, there are many different challenges imposed on the professor teaching to an audience covering the world; that is, the instructor must be sensitive to natural disasters, military and homeland security, foreign governments, aiming the course to hit specified objectives, internet challenges, and ability to work with students to secure creditable information regardless of learning resources. Hence, the purpose of this work is to show the importance of virtual teaching assistants, course module development and the challenges an instructor might face in teaching students across the world. Lastly demonstrate how funding through distance learning courses can significantly impact ongoing programs.

Key Words: Distance, Learning, Instructor

506 Engaging students with service learning within an animal science curriculum at Texas Tech University: A ten year perspective. H. Brady*, *Texas Tech University, Lubbock*.

The pedagogy of active and service learning can be effectively used in any discipline within higher education to increase student engagement and retention. In this presentation, the evolution of a service learning curriculum in the Department of Animal and Food Sciences will be discussed with an emphasis on practical applications and suggestions for other disciplines/ courses. An overview of Animal Science 3309, Principles of Hippotherapy, offered since 1998, will be discussed including evolution of the class, development of a service program, and active involvement of the class. This class has developed from working with 4 disabled children and borrowed horses to now being an integral part of a full time Premier Accredited Program serving over 60 riders per week. Hippotherapy is the use of the horse and its movement to augment therapy goals and improve the quality of life in individuals with cognitive and physical disabilities. Students become actively engaged as they are assigned to the same children each week and actively plot their progress through lab reports and reflections. Group projects used in the course will be covered, including the development of creative teaching lessons which are taught to the children by the students. This program was chosen as one of 13 Exemplary Courses in the National Case Study for Learner-Centered Approaches in Agriculture, Food and Natural Resources. As part of this presentation, video clips will demonstrate the class in action, the students teaching the sessions to riders with disabilities and, and interviews of participants. Over these years, data have been collected and we have published that in addition to dramatic improvements in the riders, we have seen significant changes in the Texas Tech undergraduate students who take this course. It was determined that students who have taken the course had a greater understanding of disabilities and of the hardships that families of children with disabilities face. In conclusion, the active engagement of students by a service learning curriculum is a powerful tool for use in higher education.

Key Words: Service Learning, Hippotherapy

507 Use of eID to monitor classroom attendance. L. D. Luqué* and D. A. Nichols, *Kansas State University, Manhattan*.

Kansas State University (KSU) offers an introductory animal science course to give students, primarily freshman, of all backgrounds an

overview of the animal production industry. The objective of this study was to develop a model to effectively and efficiently record attendance. Records will then be used to manage attendance, encourage attendance, and identify students with poor attendance in a large class. To accomplish these objectives, KSU created a program using Microsoft Excel. The program records student attendance by day and provides an output of total attendance, identifying those students with poor classroom attendance. This study was conducted over 18 wks during the fall 2007 semester at KSU. Unique Destron full duplex button tags (eID) were assigned to electronically identify students and record attendance. Students were asked to pass their eIDs past an Allflex stick reader (Allflex USA, Inc.) as they entered the classroom. Total attendance was recorded and summarized prior to the start of each class. Two sections of the course were offered: Tuesday and Thursday at 8:05AM (A; n = 118), and Monday, Wednesday, and Friday at 11:30AM (B; n = 171). Results showed a correlation between student attendance and course grade ($P < 0.0001$; n = 287; r = 0.59). Students with a higher classroom attendance had a higher final grade. When comparing student gender (male, female), year in school (freshman, sophomore, junior, senior), section (A, B), and declared major (animal science (ASI), non-animal science (NON)) to percent of classroom attendance, student gender and declared major were important factors. Females had a higher percentage of attendance compared to males ($P < 0.05$) and ASI majors tended to have a higher percentage of attendance compared to NON majors ($P = 0.10$). To conclude, this model of using eID to monitor classroom attendance is an efficient, easy, and quick means of recording attendance.

Key Words: Classroom Attendance, Electronic Identification

508 'A Postcard Home' provides opportunity for first-year students to gain writing experience. J. M. Mapes*, G. M. Hill, M. W. Orth, and J. E. Link, *Michigan State University, East Lansing.*

A misconception of writing is that it should be learned outside of science courses. However, writing assignments are valuable tools to engage students in course concepts and are critical for developing writing skills. A short writing assignment, entitled 'A Postcard Home', was adapted from an assignment created by Dr. William Beal, professor at Virginia Polytechnic Institute and State University. Students in the Introductory Animal Agriculture course were given a specially designed postcard and instructed to write a letter home to someone that they considered as a family member or supporter. In their letter, students described an experience from class and what they learned. They addressed the postcards, which were then mailed by the instructor. Objectives were to engage students in course material, provide an opportunity to develop writing skills, and involve family in students' education. Students could earn up to 10 points, and were evaluated on four criteria: spelling, grammar, sentence structure, and ability to follow directions. Within each criterion individual errors were valued at 0.5 points. If the same error was made multiple times, such as misspelling the same word, half a point was deducted for the first instance only, so as not to discourage students in their writing. Spelling and punctuation errors were the most common. For evaluation purposes, grades were based on a 4.0 scale, with divisions at 9, 8, 7, 6, and 5 points. Out of 142 students, 64% had a 4.0, 19% had a 3.0, 12% had a 2.0, 2% had a 1.0, and 1% had a 0.0. Overall, students performed well, with over 50% of the class scoring 9 points or more. Students seemed to enjoy the assignment; many included humorous explanations of what they were learning in class. Connecting to class material through personal experience engages students in what they are learning. Short writing assignments provide students the opportunity to develop or improve writing skills, while minimizing the amount of work for instructors. Writing is a critical skill in the sciences and should be fostered in all levels of coursework.

Key Words: Writing, Education, Animal Science