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2012 NACTA/DOCE Abstracts

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Oral Presentations

#0217

The Utility of Service Learning As a Teaching Tool in Secondary Agricultural Schools in Iran

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Most Iranian scholars admit that service learning can and should be used by agricultural teachers in secondary institutions. Yet others believe that this experiential learning strategy is culture bound and it has more utility in western culture. This qualitative study sought to investigate the pre-requisites of using service learning in secondary agricultural schools in western provinces in Iran. Using snowball sampling, 17 agricultural teachers across secondary schools in Kermanshah and Hamadan provinces participated in this study. Deep interview technique was used to collect data. Content analysis revealed that secondary agricultural teachers agreed on 10 challenging obstacles for service learning to be used in agricultural education in Iran. Lack of teacher motivation, cultural barriers, lack of coordination, inadequate resources, politicizing service learning, and weak networking were the main themes derived from data analysis. The result of this study has implications for agricultural secondary education. If service learning is to be widely practiced by secondary agricultural teachers, all requirements addressed in this study should be met before service learning is adopted by agriculture teachers.

#0221

Building Solutions in Africa: Students Engage in Cross-Cultural Learning Through Service

Paul C. Siciliano, Peter J. Caldwell and Landon G. Young
Purdue University

This article reflects on a service learning model that strives to teach the core principles of landscape architecture in a cross-cultural learning environment. Our case study examines a project that represents the work of World Help Solutions, an organization founded by Purdue University Landscape Architecture students to aid non-profit organizations. The mission of this new service-learning organization is to provide sustainable design solutions that take into consideration the unique contributions of residents and local experts who have knowledge of area conditions, needs and challenges. The work of the organization includes meetings with intended recipients, consultation with experts in the fields of question and testing of possible solutions. As part of this experience students gain new insights into diverse cultural systems and values, alternative professional approaches and design solutions, as well as their own individual identity that contributes to their world view. This paper describes the organization's methods for engagement on a global level and examines the opportunities that it provides students for putting their experience and research to work to transform both people and place. The service learning project described in this paper involved the design and construction of a series of erosion control dams in Kigoma, Tanzania. This work identifies the successes of participatory engagement and serves as a model for the possibilities and challenges of cross-cultural service learning. Cross-cultural service learning projects such as this acknowledge the global character of our profession and prepare students for participation as responsible and ethical practitioners.

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#0223

The Incredible Edible Salad Competition: An Experiential Horticulture Project to Enhance Student Engagement and Learning in a Crop and Forage Production Course

B.D. Whitaker
The University of Findlay

Students majoring in animal science often have little knowledge or experience in the production of crops and forages. To apply and illustrate concepts learned during lecture, a competition was developed where each team of students planted, cultivated and harvested ingredients in the university greenhouse to plate as a salad for a competition. This competitive approach incorporated lecture, experiential learning and ownership. Students (n = 36) were evaluated through post-course assessments to determine if the competition increased their understanding and application of knowledge, based on a 7 point Likert-scale. Criteria for increasing knowledge was defined as receiving a grade of > 80% on individual assessment, successfully applying knowledge was defined as 90% of the groups receiving a grade of > 90% on an assignment, and a successful educational experience was defined as the students rating the experience > 5. All students significantly increased (P < 0.05) their knowledge of crop and forage production and were successful in applying knowledge. Students agreed the competition was appropriate (5.89) and increased their comprehension of the material (4.47). Students were satisfied with working in groups (4.86) and strongly supported the use of groups (5.89). The competition was a success (4.78), as it provided hands-on experiences for the students (5.53) and an appropriate level of assessment (5.03). Based on these results, the salad competition will continue to be implemented with modifications to increase application of knowledge into the project in order to cultivate animal science students' understanding and appreciation for crop and forage production.

#0225

A Model for Service Abroad Courses: Agricultural Development in Sierra Leone

Patrick Bell, Jeff Hattey and Mike Dicks
Oklahoma State University

Employer demand for graduates with international and cross-cultural project management experience has been steadily increasing. To meet this need, an agricultural development service abroad course was designed. University students involved in the program came from various backgrounds with limited or no international travel experience and were placed into three separate groups according to their degree field and interest; agricultural production, nutrition and economics, and bio systems engineering. The goals for this course were three-fold; first, to introduce appropriate technologies into a community to improve sustainable food security for local populations; second, to place American university students within a learning environment where they were required to use their knowledge and skills to achieve an objective with limited resources; and third, to introduce American students to the challenges and opportunities in international development. Within these groups, students designed and developed projects with the overall goal of demonstrating to the community how to increase living standards in a sustainable manner using local resources. American students implemented nutrition, agricultural production and water projects and worked with children from the orphanage to determine local needs to modify projects. Each group was responsible for using the platform of their project to increase the children's understanding of applied science, math, and engineering concepts through experiential learning techniques. Upon returning from the trip, five of the students have continued and expanded their respective projects with a return service-abroad trip to Sierra Leone.

2012 NACTA/DOCE Abstracts

#0227

Impact of High School Curriculum about Cooperative Business Management on Student Attitudes about Cooperatives

Gregory McKee and Stacy Duffield
North Dakota State University

This study empirically tests the hypothesis that students who participate in curriculum about cooperative businesses will develop stronger and more positive attitudes about cooperative businesses by participating in a traditional curriculum. We compare knowledge, interactions, and feelings about cooperatives based on a pre- and post-test administered to high school students before and after participating in a curriculum about cooperative businesses. The population for the study was all North Dakota high school students in agricultural education and social studies classes enrolled in 2009. Data from 47 social studies students and 115 agricultural education students were collected. Data were obtained from a survey designed to measure student knowledge about cooperative businesses, their feelings about cooperative businesses, and their awareness of whether they had interacted with cooperative businesses. Students and families were informed of the study and were informed that the data would be kept confidential. Results show that high school student attitudes about cooperatives significantly improved after participating in a curriculum about cooperative businesses. We found a 61% increase in understanding of the learning objectives about cooperatives selected for the lessons after participating in the curriculum. We found a much smaller increase in positive feelings by students about cooperatives, 4.2%. Students also became more aware of their previous business transactions being completed at cooperatives; students indicated a 16% increase in awareness of doing business with cooperatives after completing the curriculum. Gender and age affect how attitudes change. Finally, previous experience with cooperatives affected change in knowledge and positive feelings about cooperatives.

#0228

Factors Influencing Agriculture Student Transition and Retention in College

Sandy Mehlhorn, Jason Roberts,
Joey Mehlhorn and Jimmy Butler
University of Tennessee at Martin

Universities attempt to improve student retention and provide career direction for first-time college students in many ways. Formal programs such as freshman welcome week, peer mentoring, short-term orientation courses, and extended orientation courses are common among many universities. All these activities are shown to be helpful to first-time students and may provide the connection needed to persist to graduate. This study evaluated the interaction between social networks, integration into the university, student background experiences, and student persistence. The freshman agriculture students enrolled in the agriculture sections of the university general orientation course (n=110) were surveyed to determine perceptions of the skill level needed to succeed in college and a career. The student populations were similar with respect to background, major selection, ACT, and GPA. The specific focus was to isolate factors that impacted interest level in agriculture. Major factors included previous academic preparation, mentor influence, and social engagement. Data revealed participation in social interactions with other peer groups such as FFA and 4-H had a positive impact on career choice. Students indicated a need to develop career plans early in the education process through career building experiences. Fifty-four percent of respondents had completed college coursework prior to enrolling at the university and 88% plan to conduct an internship to enhance career options. Results also indicated a link between student interactions with faculty members, peers, and the university, and community that helped them transition to college. The college orientation course resulted in higher overall grade performance than the retention rates.

2012 NACTA/DOCE Abstracts

#0230

Understanding and Addressing Factors Influencing Careers in Large Animal Veterinary Medicine

Jason Roberts and Joey Mehlhorn
University of Tennessee at Martin

The number of veterinarians seeking to work as large animal veterinarians has declined to 2.2% in the U.S. If the shortage of large animal veterinarians is to be addressed in the future, students must be targeted at an earlier age to be better equipped for the competitive selection process for entry into veterinary medicine programs. This project assessed student interest in pursuing a career in veterinary medicine during sophomore and junior years of high school. An understanding of student perceptions allow high school and college faculty to better target and identify traits of students seeking to pursue a career in large animal medicine. Sustaining the number of large animal practices is of great importance to producers in rural communities. Thirty-four exceptional high school students were selected to participate in a four week on campus experience that covered a variety of science focused educational opportunities. Participants were pre and post tested with a test instrument consisting of 11 areas focused on student understanding of careers in veterinary medicine. Data was analyzed for descriptive statistics to determine if perceptions varied as result of the program. Student perceptions at this stage of career development rank personal rewards as highly as financial reward. Data revealed that 64% of students surveyed selected a career in large animal medicine as their number one career choice. This finding does not reflect the current trend among students exiting U.S. veterinary programs. This may reflect the difference in financial rewards perceived by students entering the marketplace.

#0232

Using Student Self-Reflection to Improve Landscape Design Abilities

Ann Marie VanDerZanden
Iowa State University

Self-reflection is an important part of any learning process and can be an effective way for learners to evaluate their strengths, deficiencies and areas they want to improve. Because landscape design is an iterative process with multiple stages of review before a final design is created, incorporating student self-reflection can be a valuable teaching tool. This guided self-reflection allows students the opportunity to evaluate their current design and implement modifications before the next review stage. Horticulture 481, Advanced Garden Composition at Iowa State University is the capstone design course for students in the Department of Horticulture's Landscape Design, Installation and Management Option. A series of self-reflection exercises were incorporated into the course in Fall 2010 and Fall 2011. Each semester students completed five residential scale landscape design projects. Throughout the design process for each project students verbalized their self-reflections during in-class design critiques. This allowed peers to provide input and suggestions for each student. At the completion of each project, students completed a three-question self-reflection and submitted it with the assignment. This self-reflection helped the student and the instructor evaluate current strengths and deficiencies. Further it helped the instructor develop individualized instruction for each student. This individualized instruction provided specific resources and exercises for a student to complete as they worked to further their design skills and abilities.

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2012 NACTA/DOCE Abstracts

#0234

The Use of Simulations and Gaming to Enhance Student Understanding and Critical Thinking Skills

Scott Parrott, Joey Mehlhorn, Kelly Davidson and Jason Roberts
University of Tennessee at Martin

Collegiate faculty often struggle with making their courses more relevant and timely in order to help students develop skills that will prepare them for success in the workplace. Technology and decision making tools are changing at a fast rate and many times materials taught in the university classroom are obsolete before students enter the industry. As a result, faculty look for dynamic methods to bring real world experience into the classroom. The use of business simulation programs allows students the opportunity to apply traditional classroom information to a competitive simulated business environment. Faculty can engage students beyond traditional classroom lectures and develop a more active learning method where students are responsible for making decisions. This active participation by students can result in increased retention of knowledge and decision making skills. Students enrolled in three agricultural business courses over four semesters were surveyed after using three different supplemental training programs outside of traditional classroom lectures. The simulation material was used to supplement concepts covered in the classes. Results indicated that students on average agreed the simulation games helped them understand the concepts discussed in class. Eighty-seven percent of respondents stated they enjoyed the simulation games. The students agreed that the simulations enhanced discussion of the classroom lectures. The results also revealed that students gained understanding of the relationships between market forces and business decision making for the agribusiness firm. Simulations can be effective tools to increase student understanding of complex relationships and improve student access to content outside of traditional lectures.

#0235

The Importance of Mentoring on Student Performance in Agriculture Honors Programs

Joey Mehlhorn, Jason Roberts, Sandy Mehlhorn and Scott Parrott
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It is important for students to take an active role in the education process. The use of undergraduate research programs to teach communication and problem solving skills is consistent with a student centered active learning environment. In an attempt to better prepare undergraduates for the professional work environment the university attempted to develop a multi-disciplinary team approach to improving student problem solving skills through a mentorship based undergraduate research program. The University of Tennessee at Martin initiated a Fellows Research Program in the fall semester of 2010 to offer an enhanced undergraduate academic experience for high performing students. The program focused on a combination of faculty mentorship, directed coursework, and a research project. Students were selected based on a criteria associated with grades, faculty nomination letters, and a student application. The program required a three-year commitment between the student and the faculty mentor. Responses from faculty (n=12) and students (n=15) were solicited and analyzed with respect to time commitment, project development issues and expected outcomes. Students perceived the research project and faculty mentorship as more beneficial than directed coursework. Results indicated the primary benefit of the program came from the individual relationships developed between faculty and students through the mentorship process. Faculty indicated that time was the primary constraint limiting faculty participation in the mentoring process. Additional findings found that the program increased student understanding of complex problems and would improve graduate school performance. Faculty and students also indicated the need for including an industry mentor to the program.

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#0237

Student and Faculty Perceptions of ICT Use in Undergraduate Courses

Donald M. Johnson, Leslie D. Edgar and
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University of Arkansas

The development of knowledge and skills in information and communication technology (ICT) is an important outcome for postsecondary agriculture programs. A key factor in development of ICT skills is the extent to which these skills are used and practiced in courses. The purpose of this study was to determine and compare the perceptions of faculty (n=64) and students (n=235) concerning the specific ICT skills required in undergraduate agriculture courses at one university. The faculty survey asked respondents to indicate whether or not each of 48 ICT tasks (drawn from seven areas of ICT use) were required in a specific identified course taught by the faculty respondent. The student survey asked respondents to indicate the extent (5-point scale ranging from never to always) to which courses they had completed in undergraduate agriculture courses required use of these same 48 tasks. Both faculty and students identified the same five tasks; receive electronic mail from instructor, send electronic mail to instructor, submit course assignments as attached files, search the internet for specific information, and use Blackboard® to acquire course information; as the most commonly required ICT tasks in undergraduate agriculture courses. There was a significant ($P < .05$) positive relationship ($r = .68$) between student and faculty perceptions of the relative extent to which electronic mail, internet, word processing, spreadsheets, computer graphics, databases, and specialized applications were required in courses. Students and faculty agreed ICT tasks that facilitate routine course transactions were most frequently required; ICT tasks designed to enhance academic learning were required much less frequently.

#0238

Promising Practices of Dairy, Horse and Livestock Career Development Event Coaches

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Career Development Events (CDE's) are a traditional learning experience offered to thousands of youth through venues such as 4-H, FFA and breed associations. Adults coaching these youth come from a variety of backgrounds, with a wide range of formal and nonformal training in preparation and coaching of a team. Professionals have observed a wide range of preparedness and performance of many youth participating in horse, dairy, and livestock CDE's, and believe content competence, coaching competence, and self-efficacy of the coach directly impact preparedness and success of youth. The purpose of the present study was to describe promising practices of successful dairy, horse, and livestock CDE coaches in [state]. Utilizing the theoretical frameworks of symbolic interactionism, social cognitive theory, and cognitive apprenticeship theory, researchers identified and interviewed five expert dairy, horse, and livestock CDE coaches using the standardized open-ended and general interview guide approaches. Eighteen interview questions took into account previous experience, coaching philosophy, coaching objectives, coaching style, and advice. Data from the interviews were inductively analyzed using open-coding. Twenty-six promising practices and eight central tendencies were identified. Central tendencies included expectations, effective coach, experience, goals, knowing the youth, foundational knowledge, youth development, and positive environment. The coaches interviewed shared a deep sense of passion and dedication toward youth development and coaching, as well as a desire to see new coaches gain the resources and experience to be successful. Findings from this study suggest the utilization of promising practices would facilitate greater coaching success in terms of competition and youth development.

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#0239

Agricultural Applications of Biotechnology in the Mind of the Public

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State University of New York at Oswego

It is clear that increased public awareness of genetic engineering, food safety, and environmental concerns has been accompanied by a rising tide of skepticism regarding the utilization of agricultural applications of biotechnology (Frewer, Miles, & Marsh, 2000). What is less apparent is how people have constructed their understandings of agricultural applications of biotechnology. Constructivist theory asserts that knowledge evolves based upon the experiences individuals have and the reflective meanings that they connect to those experiences (Green & Gredler, 2002). The purpose of this study was to explore and describe public understanding of the use of agricultural applications of biotechnology. The objectives of the study were: 1) to investigate the public's awareness of agricultural applications of biotechnology; 2) to illustrate the sources of knowledge the public uses to construct their knowledge of agricultural applications of biotechnology; and 3) to describe the outlook the public has regarding agricultural applications of biotechnology. The research study employed a survey design and the use of a random sample of 779 adults. The findings reveal that the public has a superficial understanding of agricultural applications of biotechnology. The findings also reveal that younger and more educated participants were more likely to construct their understanding of agricultural applications of biotechnology through socially constructed online sources. The findings illustrate that most of the participants (55%) were optimistic about the advancement of agricultural applications of biotechnology. However, the findings also illustrate that the participants (82%) have concerns regarding the harm agricultural applications of biotechnology may have on the environment.

#0241

Agricultural and Environmental Sciences Students' Views of U.S. Food and Agricultural Policy

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Abilene Christian University

Brenna D. Ellison
Oklahoma State University

The goal of the introductory course in the Department of Agricultural and Environmental Sciences (A&E) at Abilene Christian University (ACU) is, "To establish a common foundational body of knowledge among students about global agricultural and environmental systems and technology as an interpretative lens in preparation for the future." As part of the course, students are exposed to basic concepts regarding U.S. food and agricultural policy including U.S. Department of Agriculture (USDA) budget allocations. The assumption is that policy decisions can impact students' immediate education and for many, future employment. Though U.S. farm policy is primarily influenced by special interest groups, does resulting legislation reflect the general electorate's view? A recent national survey conducted by Ellison and Lusk indicated the answer is no. The same survey was administered to comparison groups of university students at ACU. Results showed that ACU students reflect the national taxpayer sentiment that food safety and security should be the most important goal for farm policy (A&E majors-32%, non-science majors-34%), but at a lower percentage than the national sample (50.7%). This differs from USDA's dominant budget allocation to food assistance. Additionally, A&E majors differed from the national survey and non-science majors by ranking farm support second in importance. Conversely, non-science majors ranked food assistance second as did national survey respondents. Students were also asked to allocate \$100 among six distinct USDA budget segments. Each group, A&E and non-science majors, was divided into two subsets with one subset provided budget allocation information and the other no information. The four subsets allocated funds at a significantly different rate ($p=.028$) across the six budget categories.

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#0242

An Exploratory Study of Computer-Based Instruction Utilizing iFARM Modules in a College Introductory Agronomy Curriculum

Annie L. E. Davis, Lori J. Unruh-Snyder, Kathryn Orvis and Neil A. Knobloch
Purdue University

The purpose of this study was to describe an educational agronomy curriculum developed for an introductory crop production course. The intention of the development for the iFARM modules was to create an equal teaching platform for student learning for both the Fall and Spring courses. Due to the inclement spring weather in the Midwest, there are usually extreme differences in weather from Fall semesters to Spring semesters, as well as, differences in budgets from year to year for field-based educators. These barriers oftentimes lead to defining alternative ways of presenting the same material. The iFARM modules are a set of 13 agronomy related modules, used as a form of technology mediated learning, developed to offer educators an alternative form of instruction. A student population of 226 individuals was surveyed. Of the 226 students 79% responded that they found the modules useful to their learning; while 21% thought that the modules did not contribute to their learning in the course. When comparing the Fall and Spring semesters average post-test scores there is a noticeable difference which could be attributed to the modifications in instruction from the Fall semester to the Spring semester ($d = 0.76$, medium effect size). It was concluded that students experienced an overall positive learning experience while using the iFARM modules and the modules were somewhat effective in teaching the participants new material.

#0243

Using Think-Aloud Pair Problem Solving as a Formative Assessment During Equipment Troubleshooting Training

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Utah State University

Think-aloud pair problem solving (TAPPS) was used to formatively assess agriculture students' engine technical knowledge during compact power equipment troubleshooting training. The focus was on having students express their thoughts aloud while engaged in problem-solving activities to allow them to become more aware of their thinking processes. A total of 28 students were taught engine operational theory and a troubleshooting procedure followed by training in TAPPS. Prior to troubleshooting a pre-test engine operation theory knowledge test was given to students. Students were then asked to troubleshoot a single cylinder overhead valve Briggs and Stratton engine which had a compression system fault involving insufficient valve clearance. Each student was randomly assigned to individually perform the troubleshooting exercise using either TAPPS or by working alone. To standardize the question prompts used during TAPPS, the listener role was performed by an undergraduate researcher. No hints were given except that repairing the fault did not require the removal of the cylinder head or crankcase cover. Only 67.8% of students were successful at identifying and repairing the fault. The chi-square test of association showed no significant difference ($\chi^2(1) = .44$, $p = .50$, $\phi = .126$) in success rate between students who worked alone and those who used TAPPS. A review of video recordings of TAPPS sessions revealed unsuccessful students stated feeling unfamiliar with valve clearance adjustment procedures and connecting engine theory of operation with troubleshooting. TAPPS served as a way for the instructor to identify student misunderstandings to inform individual instructional interventions.

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#0247

A Modeling Approach to Unifying Concepts Taught in a Professional MS Agronomy Curriculum

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Iowa State University

Agronomic systems are inherently complex. Traditional agronomy curricula generally take a reductive approach to understanding the basic elements of the agroecosystem with the ostensible expectation that students will be able to understand the system by understanding its individual components. While fundamental knowledge of the individual components is critical to understanding the functioning of agroecosystems, it does not account for the complex interactions and variation inherent in them. This project seeks to improve student understanding of these complexities by integrating the use of the Agricultural Production Systems Simulator (APSIM) modeling platform throughout a professional MS degree curriculum. APSIM contains approximately sixty science sub-models that can simulate a wide range of soil-plant-atmosphere processes including soil water and nitrogen dynamics, crop growth and productivity, and rotation schemes. Initially the audience is students enrolled in the Agronomy MS distance education program at Iowa State University. The specific objectives were to 1) adapt APSIM to US conditions for teaching concepts in crops, soils, and agricultural meteorology; 2) develop simulations that demonstrate the interactions of these components in more advanced courses; 3) and through this process of introduction and refinement develop the ability of students to apply modeling approaches for understanding complexity in agroecosystems. At present, twelve long-term weather and thirty soil files from representative Iowa counties have been incorporated into APSIM, while the crop database is under development. This project will impact the pedagogy used in professional degree programs by creating experiential learning opportunities that could not be provided within the scope of traditional training programs.

#0249

Mobile Computing and Augmented Reality to Support Learning About Horticulture

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The Pennsylvania State University

Developments in portable computing devices and mobile application have created innovative means to support student-centered learning in formal and informal learning environments. One form of mobile computing that has taken hold in both popular culture and education is augmented reality (AR). Portable devices equipped with AR functionality enable one to combine elements of a real-world physical space with virtual content. Students can explore their everyday surroundings using wireless handheld devices, thus extending the opportunities for learning to contexts and/or locations that normally lie beyond the boundaries of the classroom. One of the main affordances of AR technologies is to harness its ability to contextualize information or content in a place-based context. With augmented learning, information is presented to learners within a specific context or place, with the purpose of achieving situated learning goals. To illustrate the utility of AR technologies on mobile devices to support learning about (agriculture) topics, a case called Tree Investigators is presented. Elementary students used three mobile technologies to identify a "Mystery Tree." To introduce students to different tree characteristics, bar codes at preselected trees were scanned to access web content, which included descriptions of their branching structure, leaf shape, bark texture, fruit type, and flower color. To aid in the identification of the Mystery Tree, AR markers were used to display virtual clues as to its identity. Students used a tree identification app to match the virtual images to actual tree characteristics. Implications to higher education teaching are drawn.

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#0250

iLearn: Student Perceptions of Moving In-Class Lectures to Online Lectures

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University of Florida

Teacher-centered instruction typically dominates college classrooms, which results in instruction at the knowledge and comprehension level. However, is this type of instruction appropriate for preparing college graduates to enter a complex, global workforce that requires higher-order thinking and problem-solving? This study uses YouTube (posting narrated PowerPoints) to provide traditional lecture material outside of scheduled class-time and then used the time made available in-class to apply concepts taught during the online lectures. The restructuring of the course allowed the instructors to engage students in additional higher-level activities in-class. At the conclusion of the course, a focus group was conducted to examine student perceptions of moving in-class lectures to online lectures. The focus group revealed that the students had mixed feelings. Some indicated that they did not understand why the lecture material was moved online and found it to be pointless, while others appreciated the instructor realizing that they were capable of grasping traditional lecture material on their own and found the higher-level activities to be beneficial. Students also indicated that varying the instructional methods included more of their learning styles. Furthermore, several of the students suggested that their comprehension of the online material should be more rigorously evaluated. They felt that online multiple choice quizzes did not challenge them enough and were pointless. The students suggested that they should write a paragraph "about what you got from it" or have online discussions. Based on this study, moving some in-class lectures to online lectures may be helpful in transforming college learning experiences.

#0253

Global Engagement: Sharing Our Expertise in Agricultural Education

Greg Miller
Iowa State University

Most academics are familiar with the Fulbright Scholar program which supports Americans in teaching or conducting research abroad for up to one year. Another less widely known Fulbright program offers an excellent opportunity for college teachers of agriculture. The Fulbright Specialist program involves U.S. faculty in two to six week international assignments assisting academic institutions with such things as curriculum enhancement, faculty development, and action research. The purpose of this presentation is to describe the process for becoming a Fulbright Specialist and to describe a Specialist project completed at Naresuan University in Thailand. Faculty are added to the Fulbright Specialist roster through an application and peer review process. The Council for the International Exchange of Scholars maintains the Specialist roster and matches qualified Specialists with requests from international institutions. Naresuan University requested a Specialist to provide advice and guidance with the internationalization of graduate programs in Plant Biotechnology and Natural Resources and the Environment. The 42-day project involved working with senior university administrators and selected faculty members. Specific activities included studying curriculum requirements and university policies, frequent formal and informal meetings with faculty and administrators, developing and presenting a list of best practices for internationalization, and presenting a final report of observations, conclusions and recommendations. The Specialist project included several other academic and cultural activities that contributed to the overall success of the project and Fulbright's goal to "increase mutual understanding between the people of the United States and the people of other countries".

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#0256

Agricultural Study Abroad Grounded in Experiential Learning

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University of Florida

Agriculture is increasingly a globally dependent industry with inputs, outputs, and processes that transcend geopolitical borders. Many universities recognize the need to prepare graduates to work in this environment and are providing students international opportunities through study abroad programs. However, it is imperative that these programs are designed to promote and encourage learning. This study presents a content analysis and synthesis of learning theory outlining a framework for designing study abroad programs based upon experiential learning. Based on the literature, four themes emerged: (a) learner engagement; (b) pre-experience activities; (c) activities during the experience; and (d) post-experience activities. Learner engagement is influenced by learner motivation, occasion for processing, physiological readiness, and content level. Pre-experience activities focus on pre-reflection in which the learner is preparing for a sensory rich experience. During the experience the learner may go through cognitive overload. The facilitator can help focus and guide the learner through the experiential learning cycle by providing reflection activities during the experience. Post-experiences activities should also be included in order to make connections between the pre-experience activities and the experience. It was concluded that facilitators should assist the learner in completing the learning cycle by focusing on pre-reflection, reflection, and post-reflection. It is recommended that facilitators utilize the suggested framework for agricultural study abroad experiences to enhance student learning. If planned properly study abroad experiences can provide a wealth of knowledge, but proper design is necessary to ensure an educative experience.

#0259

Designing Landscapes for Experiential Learning

Gail Hansen
University of Florida

University settings provide a variety of opportunities for students to design and develop outdoor experiential learning environments. Learning landscapes, such as teaching arboretums and demonstration gardens, are ideal environments to pay tribute to agriculture and horticulture while learning about plants. This presentation highlights a landscape design class project to design a demonstration garden for sustainable landscapes. The case study describes a framework for developing and designing learning landscapes by linking the experiential learning process to the landscape design process and to design features of learning landscapes. Landscape design students in environmental horticulture participated in the planning and design of a demonstration landscape on the University of Florida campus. Students worked with campus administration, faculty committees, facilities and planning, and campus extension programs to create a design that reflected the university needs and the educational goals of extension. The process gave rise to a design model that links pre-design planning, site analysis, program development, design development, and important design features of learning landscapes to the four phases of experiential learning. The model was also used to generate key questions for anyone interested in developing learning landscapes that focus on design issues such as feasibility, usefulness, presentation, and functionality. The project presented a unique opportunity for students in landscape design to learn about the link between experiential learning theory and principles and the landscape design process, and to apply those principles in the planning and design of a demonstration landscape for their campus.

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#0261

Improving Agriculture Literacy in Washoe County Elementary Students Using Undergraduate Student Interns

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University of Nevada Reno

Agriculture plays a vital role throughout this nation, affecting each member of every community. However, there is an increasing gap in the public's knowledge about agriculture. At the University of Nevada, Reno (UNR) an agriculture literacy internship was developed and offered to undergraduates across disciplines to incorporate service learning as part of their education as well as to enhance elementary students' understanding of agriculture. Using lessons selected from Ag in the Classroom's 'Food, Land and People' curriculum, undergraduates developed innovative activities that integrated agriculture with elementary core curricula. Undergraduates presented these lessons to elementary classes at four weekly one-hour sessions. Twenty-five Washoe County elementary classes grades 1 through 6 were selected for the program and were visited by 17 undergraduates during Spring 2011. Elementary student knowledge gains were assessed using pre- and post-test data from 427 subjects collected before and following lessons. Regression analyses showed substantial post-test gains that were comparable across grades, teachers, schools and teaching delivery among interns. Paired t-tests also showed significant gains for all grade groups: for first and second grades, the pre-test mean was 69.4% and the post-test mean was 79.5% ($t = 10.32, p < .005, n = 259$). The corresponding figures for third and fourth grades were 62.2% and 82.3% ($t = 8.82, p < .005, n = 79$) and for fifth and sixth grades were 54.5% and 69% ($t = 11.88, p < .005, n = 89$). Results suggest that undergraduate student interns can be used to improve agriculture literacy in elementary students.

#0263

Innovative Teaching Approaches Expanding International Understanding of Freshman Students Using Their Interest in Conflicting Roles of Animals in Societies of the World

Mark Russell, H. Frigola and M. Douglas
Purdue University

This innovative approach expands student international awareness in a university-wide, freshman honors course "Conflicting Roles of Animals in Societies of the World". Diverse student perspectives and experiences contribute learner-centeredness to group discussion-based student engagement of sustainable agriculture through progressive written and presentation responsibilities. Purdue Agriculture is B.S. degree students are predominately Indiana residents who are required to complete nine credits of "International Understanding electives". Purdue strongly encourages international semester exchanges and study abroad courses, but more international awareness is needed in on-campus courses. This partnership between Animal Sciences and Anthropology has engaged 75 freshmen from 18 different majors across the entire university in discussions about the importance of animals in various societies. Topics are integrated to explore societal tensions and current issues surrounding animal-human interactions. Narrative reflection, the use & society paper, and the current issue papers are assessed using the Purdue Agriculture writing and Blooms' Taxonomy rubrics. Papers critically evaluate ethical and moral dilemmas that affect animals, people, and the environment. Both student paper topics are presented in class and the student-led and facilitated discussions follow. This course is introducing a diverse group of students to the role of animals as a source of food as well as serving other roles in a sustainable agricultural system about which they have little knowledge but opinions. We will share materials and assessments used to prepare students to interact with people who use animals in ways different than themselves and to critically analyze ethical and moral debates of animal use in society.

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#0264

Responding to Employer Priorities for New Graduates with International Service Learning Course Learning Outcomes: or Why Employers Rank International Experiences for Soft Skill Development Lowly

Mark Russell, P. Ebner, H. Oliver and L. Snyder
Purdue University

So, why did 280 employers rank international experience seventh out of seven in a forced ranking of experiences important to developing soft skills of university graduates? We will compare the stated learning objectives and the assessments for the Animals & Food Security: International Service Learning course (in Haiti & Romania) and Sustainable Agriculture Production in the Tropics (in Costa Rica & Panama) with the soft skills in the 2011 “Comparative Analysis of Soft Skills: What is important in new graduates” report co-sponsored by the APLU and the University Industry Consortium. Through participation in these classes, students are expected to increase their: ability to effectively communicate with others; capacity to work effectively as part of a bi-national problem-solving team; and their ability to think critically, communicate effectively, and solve real world problems. Student learning outcome assessments include submitting daily journals reflecting what students learned or thought as a result of their work and then occasional guided reflective journals with sequential prompts about their expectations and behavioral changes. Evidence will be shared that the learning and development of students as outcomes of their experiences is not getting communicated to potential employers. It appears that students are not communicating the benefits of their international experiences in interviews and written documents in a manner that the employers connect to their prioritized skills. We will discuss methods of message management and how students can better tell their story.

#0267

Sustaining By Advocating - Student Perceptions of Agricultural Advocacy

Chaney W. Mosley, Keyana Ellis and Eric Kaufman
Virginia Polytechnic Institute and State University

Because production agriculture is controversial, the agricultural workforce must develop skills needed for effective advocacy. The purpose of this study was to explore student perceptions of advocacy. Participants were undergraduate students (n = 15) in a communications course for agriculture majors. The mixed methods approach was a sequential exploratory study with a quantitative-qualitative two-strand design of inquiry. The Animal Attitudes Scale (Cronbach's alpha = 0.93) was administered to determine attitudes toward animal rights and animal welfare. Based on results, participants were assigned to one of two groups - animal rights (n = 8) or animal welfare (n = 7). Participants viewed a video that advocated for issues opposite their held viewpoint. Afterward, students responded to 11 open ended questions regarding advocacy. There was a significant difference between the group scores – animals rights (M = 50.38, SD = 8.62) and animal welfare (M = 73.43, SD = 8.30); $t(13) = 5.26, p = 0.0002$. Qualitative data were analyzed using constant comparative analysis. Two themes emerged: (a) awareness of advocacy - definitions, limited preparation in coursework, and need for combining persuasive techniques; and (b) value of advocacy - strengthened argument, critical thinking skills, and importance of advocacy skills in professional futures. Not all agriculture students have similar attitudes about animal agriculture. Instruction of advocacy at the undergraduate level is limited and underlines misunderstandings about proper components and use of advocacy in agriculture. Advocacy skills will be necessary to sustain the agriculture industry; however, students do not feel prepared to effectively advocate.

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#0268

Student Design of Class Experiments Facilitates Problem-Based Learning

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Kansas State University

Class experiments typically involve the instructor setting the objectives, design, methods, and predicted outcomes. Student participation is restricted to collecting and interpreting data, and writing up results and discussion in a report. This approach is limited in that students are not challenged to develop ideas (hypotheses), nor are they allowed to design experiments capable of testing those ideas/hypotheses. When these missing elements are incorporated into class exercises, student empowerment and responsibility increases, analytical thinking improves, and valuable experience is gained in the use of the scientific method. Therefore, an objective for the past several years has been to engage students by having them design their own experiment in a biological control course taught at Kansas State University. A handout describing the study system – plants, insects, physical environment – available resources, and a general topic (example: ‘How does spatial distribution of pests and predators affect predator foraging efficiency?’) provides key information. Groups of 3-5 students work together to develop questions and hypotheses, and to produce an experimental design to test predictions. Each group makes a PowerPoint presentation, which is critiqued by the class. A final experimental design is adopted by consensus, often combining elements of each design. The instructor facilitates the discussion. The experiment is then conducted by the class and students prepare and submit individual reports. Among the benefits of this approach are 1) increased student engagement and responsibility, 2) shared power, 3) peer review, and 4) experience leading to problem-based learning.

#0269

An Investigation of Teacher Beliefs and Actions

Aaron J. Giorgi, T. Grady Roberts,
Nathan W. Conner, Christopher M. Estep and
Christopher T. Stripling
University of Florida

The National Research Council challenged colleges of agriculture to make changes to instructional practices for graduates to meet the needs of solving complex global problems. Education in any context seeks to enhance the learning process, which is a multifaceted set of interactions. These interactions are often influenced by the teacher instructional behaviors. The theory of planned behavior describes the ability to predict behaviors based on an understanding of beliefs. This case study examined teaching inclusivity through an investigation on the relationship between teacher beliefs of inclusion on the usage of teacher immediacy activities. Inclusion is defined as the control students are given over the learning process. The beliefs on inclusion for five faculty members of the [college] were assessed using the Heimlich/Van Tilburg Teacher Beliefs Scale, and the teaching behaviors of the instructors were documented using observational techniques. Twenty-two hours of class time were analyzed for this study. Results indicated that 62% (n = 21) of the teacher immediacy behaviors were utilized more frequently by highly inclusive instructors during class time. Notable differences occurred in 11 behaviors. It would appear that in this case, beliefs about the inclusivity do influence the frequency of teacher immediacy behaviors. Additional research should seek to have a more diverse population of teacher beliefs represented. For practical application, development of a teacher diagnostic tool should occur. A diagnostic tool could help predict or describe teacher’s classroom practices and needs. Such a tool could help those who deliver professional development to college faculty deliver appropriate programs.

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#0273

Exploring Opportunities Within the New York Food and Agricultural Sector.

Robert N. King
Monroe Community College

This qualitative and descriptive study explores existing and future opportunities for agriculturally related economic development, and pathways to agricultural degrees within New York. Twenty-one self selected participants from twenty (20) different food and agricultural related businesses from upstate New York participated in a strengths, weaknesses, opportunities and threats analysis in order to identify, controllable and uncontrollable factors within the food and agricultural related industry. Discussion was recorded, transcribed and analyzed using NVivo 8 software. Factors identified include: quality and profitability, capacity to attract workers, education and training, public perceptions, and government policy. The study concludes that involvement and coordination within and among the industry will be required to: 1) account for public misinformation, 2) develop a labor force with a broad range of skills, 3) educate youth about career opportunities, 4) establish a twenty-four (24) college credit certificate and stackable training program and 5) account for government policy. An implication is that educational institutions and employers will have to partner to develop relevant curriculums for both new and incumbent employees.

#0276

Experiential Learning and Critical Thinking in the Context of a College of Agriculture and Natural Resources Freshman Seminar Course

Michael W. Everett and Matt R. Raven
Michigan State University

Critical thinking skills are an important subset of outcomes that undergraduates should achieve prior to earning a 4-year college diploma. The purpose of this project was to develop a 1-credit freshmen seminar class that focused on critical thinking in an applied way within the context of

agriculture and natural resources that would also serve to quickly connect freshmen students to the university. Students in this Undergraduate Studies (UGS101) course were provided with opportunities to implement and enhance critical thinking skills in a unique, experiential education environment. Students' pre- and post-test critical thinking z-scores were analyzed with a paired samples t-test. Results indicated that students' critical thinking skills did not significantly increase during the 10 weeks of the seminar. This finding indicates that a cognitive skill, like critical thinking, is not something mastered in a 10-week 1-credit seminar. Rather, it is something that is acquired over time in a purposeful and mindful way. Arum and Roksa (2011), in their national study of colleges, found that students' critical thinking skills are not improving during their first two years of school. This freshmen seminar introduced students to critical thinking and provided opportunities to practice higher order cognitive thought in a learning environment. However, in order for them to improve their critical thinking skills they need to be required to hone these thinking skills over the rest of their academic career. This will require focused effort on the part of the university to ensure this happens.

#0277

Impact of a STEM Program to Enhance Recruitment, Retention and Success of High Potential, High Performing Underrepresented Students.

Pamala V. Morris and John Patterson
Purdue University

This paper contributes to existing scholarship regarding the recruitment and retention of high-needs/ high potential underrepresented minority (URMs) students and provides new data on factors contributing to their success. High potential URMs have lower retention rates, GPAs and post-academic success than their cohorts. However, to address this issue, Purdue Agriculture secured five years of funding (2006-2011) from the National Science Foundation to develop the FEELS (Food, Environment, Engineering, Life Sciences) program. The overarching goal of the program is to cultivate a

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diversity of leaders that will effectively compete in the global marketplace as STEM scientists. The program goes beyond getting students in the door with scholarships and addresses the complex web of needs and concerns of today's students throughout their academic career. FEELS is designed to prepare students through an interdisciplinary community of learners and integrate a carefully designed curriculum with student support services and mentoring opportunities including an undergraduate research experience, an industrial internship and a community service learning project. As a result of this program, a total 20 students in the first three cohorts of FEELS fellows have been retained in the STEM disciplines in Purdue's College of Agriculture at a rate of 90%, compared with a retention rate of 45% for NSF-STEM URMs and a retention rate of 88% for Purdue STEM URMs. Retention rates across the board for URMs in STEM disciplines at Purdue have increased over the years due to intentional enrichment programs, e.g., FEELS. Further, FEELS fellows have significantly higher GPAs (3.25 vs. 2.77/4.00) than non-FEELS Agriculture students.

#0278

Using Concept Maps to Gauge Student Understanding

Sara D. Hurst and T. Grady Roberts
University of Florida

Measuring student understanding is a complex and challenging task. Comparison of initial student reflections and post-course reflections for a course is helpful in order to facilitate completion of the learning cycle and gauge student understanding of complex subjects. This can be accomplished using a concept mapping activity. By gauging student understanding before a course and comparing it to after the course, both the instructor and student will have a better grasp of insights gained. To better tailor the goals and objectives used, graduate students in an experiential learning at the [university] completed a prelection and reflection worksheet. Each student first stated personal learning goals for the class. The students also drew an initial concept map of the

course topic, in this case, experiential learning. By creating a visual representation of their knowledge of experiential learning, students could draw from their prior knowledge and build a foundation for the class. These webs also approximate the real cognitive schema for each student. By examining these goals and concept maps, instructors can better understand prior knowledge of students and their individual goals for the course. This allows for the creation of a learner-centered environment tailored to better suit the individual students enrolled each semester. Results from this particular class revealed that the post-course concept maps were more complex and accurate than initial concept maps. Individual goals were also used to customize the course content. This presentation will outline the methodology and show representative samples.

#0279

Making the Most of What You Have: Learning Concepts at Home and Applying Concepts During Class

Lauri M. Baker
Kansas State University

Quisto Settle
University of Florida

How to effectively use time with students has been explored on multiple levels. Recently, there has been discussion related to using video tutorials to deliver content to students outside of class, allowing students to learn at their own pace. Once students are in the classroom, the time can be used for applying concepts and skills learned from the video tutorials, with the instructor present to address questions. This study utilized this teaching approach in a semester-long course on social media marketing with 15 students. At the end of the course, students were asked qualitative questions in a journal format about their experiences in the course, including specific questions about the out-of-class video tutorials and in class application. Students were not in agreement about the video tutorials. While the majority of the students found the tutorials interesting, some of them lacked the personal motivation to watch

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the videos before the in-class application. Only three students recommended continuing with this format in future semesters. The majority of the students expressed the desire to have a mixture of both techniques. However, students preferred major concepts be taught in class while utilizing time outside of class for applying the concepts. This response may indicate students' resistance to change. However, if used in a limited format this technique may allow students to learn more throughout the semester and have more opportunities for application and discussion.

#0286

Gameification: Using Game Theory to Increase Learning and Engagement in Online Classes

Karen Cachevki Williams, Christine Noel Boggs and Meg Van Baalen-Wood
University of Wyoming

Game theory is increasingly being used as a teaching tool in online and face-to-face courses. However, faculty may be reluctant to incorporate games or gaming strategies into their teaching toolbox for fear that this may make the course content seem less serious, rigorous, or valuable by students and/or administrators. Others may feel that they lack knowledge and an understanding of what "gameification" means, or fear that they do not have the technical design skills to redesign their courses. Three faculty members incorporated game theory into two upper division courses: AGRI 3000 Discovering and Utilizing Ideas and Information, and ENGL 4010 Technical Writing in the Professions. Student performance was examined for two semesters, and comparisons were drawn to student performance prior to the course design change. Findings indicated that student persistence rate increased, grades improved, students did more work than necessary to achieve an "A" in the course, students continued to use discussion threads and peer feedback mechanisms, and students felt they had more investment in the class due to the ability to make choices and determine their pace. Faculty perceptions of successes and failures during their course redesign journey will be shared in

addition to helpful strategies that can be utilized to create a "gameified" learning environment.

#0287

Usage of Engaging Moments (E-Moments) to Enhance Student Learning in an Introductory Animal Science Course

Katie Frenzen, Kathy Hanford and Bryan A. Reiling
University of Nebraska-Lincoln

E-moments are short activities designed to engage students with course content. It was hypothesized that e-moments would help students comprehend information and break up monotony of lecture. During the fall semester 2011, 103 students were enrolled in an introductory 4-credit Animal Science course. On randomly selected days, an e-moment was conducted. Example activities included development of maps to show relationships between terms or concepts, development of news stories where students described the content as eye-witnesses, and the development of story lines using lecture content. Other e-moments functioned to physically and mentally engage students. During control lectures, e-moments were not conducted. To test retention and understanding of content, three-question clicker quizzes were administered upon start of each subsequent lecture, and pooled results were used to compare effectiveness of e-moments. Statistically, average student performance on clicker quizzes associated with e-moment (2.41+0.09 points) and control (2.27+0.00 points) lectures was similar. While many students agreed that e-moments helped them recall content (54.4%) for quizzes and tests, made lecture more enjoyable (43.5%), and were an effective use of class time (51.5%); others disagreed (25.0%, 29.0%, and 26.5% for each of those statements, respectively). When survey responses were analyzed in accordance to students' self-evaluated learning styles, students who learn best by hearing provided a neutral response to e-moments (3.50+0.33; 1 = strongly agree, 5 = strongly disagree), whereas students who learn best by seeing (2.55+0.24) or doing (2.20+0.18) more favorably perceived

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($P < 0.05$) value of e-moments in relation to their own self-described methods of learning.

#0289

Enhancing Undergraduate Education While Meeting a Community Need Through Service Learning

Michelle S. Burrows, David Thain and Dale W. Holcombe
University of Nevada Reno

Educating young people about the importance of agriculture is paramount to sustaining agriculture. An agriculture literacy internship was developed to offer University of Nevada Reno (UNR) undergraduate students, across majors, the opportunity to enhance their education while increasing the agriculture literacy among elementary students. Through service learning, this program allowed university students to enrich their community, by visiting elementary classrooms and introducing these young people to the importance of agriculture. During the first six weeks of the course, they learned to incorporate their previous knowledge and experiences into elementary grade lesson plans that met the needs of both communities. The lessons used were taken from the Food, Land and People curriculum produced by Ag in the Classroom. During 2011, 27 undergraduates visited more than 50 classrooms, connecting with more than 1500 elementary students and their teachers. These visits provided university students hands on opportunities to develop and sharpen important real world and life skills that will serve not only themselves, but their communities, well into the future. Elementary student pre and post tests, as well as an online teacher survey provided valuable feedback to the university and the undergraduate students. All undergraduates in this program felt they learned and developed skills that will help them in other classes and in life. Additionally, 100% of participating undergraduates would recommend this program to other university students. This internship has enhanced undergraduate education while increasing agriculture literacy among elementary students and teachers.

#0290

Teacher Clarity: Student Perceptions

R. Kirby Barrick and Christopher M. Estep
University of Florida

During the Spring semester 2012, instructors who teach undergraduate courses in the College of Agricultural and Life Sciences were contacted to gain approval of conducting a study on teacher clarity in their classes. The overall purpose of the study was to identify areas that could be addressed in faculty teaching development programs. A total of 160 course sections were identified after eliminating individual studies, seminars, and research courses. From those course sections, instructors of 57 course sections agreed to participate. The study was conducted following the guidelines included in IRB approval. An instrument based on the work of Cruickshank and others was used to solicit student responses to 28 statements regarding clarity by finishing the statement "My teacher in this class" on the scale Never, Sometimes, Mostly, and Always. Instruments were administered personally during regular class periods. Of the 28 items, students rated teachers highest on Answers our questions and Gives specific details when teaching (88% and 73% Agree, respectively). Instructors were rated lowest on Goes over difficult homework problems on the board (22% Agree), Shows us how to remember things (30%), and explains something and then stops so we can think about it (37%). Results of the study will be utilized in planning a series of workshops to assist instructors in improving their teaching. Results of the study for each instructor's course will be shared, and instructors will be encouraged to participate in activities designed to address their clarity needs.

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#0291

Recruitment and Retention of a Diverse Population of Food Safety Students Using Market Research for Enhanced Programs

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South Dakota State University

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New Mexico State University

This project aimed to expand undergraduate student numbers in food safety. Efforts focused on instructor training, curriculum development, and student recruitment and retention. University partners from New Mexico, North and South Dakota developed a summer-lab course, four interactive lab modules for didactic and online learning environments, a teaching format that integrated an online-delivery system with a face-to-face workshop, a career video, a recruiting brochure, and an educational game. Teaching materials with integrated food-safety concepts and career information were introduced to university students (n=416) as a pilot study. Following revision, the materials served as educational interventions, and pre- and post-surveys were administered to high-school students (n=138). Of the high-school participants, 39% have chosen a college major, and 18% plan to enroll in a food-safety program. The percentage of individuals who have decided on a major was greatest among individuals exposed to the career video (52%), compared to the brochure (27%), or game (21%). The number of undecided individuals was greatest at the high-school freshman level (38%). Project materials were uploaded to university websites, and curriculum materials were distributed to survey participants, workshop attendees, including high-school teachers and Extension agents throughout the Dakotas, and individuals involved with the Nurturing American Tribal Undergraduate Research and Education (NATURE) program. Thirty-one students have enrolled in SDSU's summer-lab course. NDSU's student enrollment in food-safety majors and

minors have increased from 7 students in 2008, to 13 in 2009, 19 in 2010, and 22 in 2011. The U.S. Department of Agriculture, SERD Grant 2008-38411-19055, supported this project.

#0292

Connecting Pacific Pathways Through Research, Education and Experience in the Sciences

Janice M. Straley
University of Alaska Southeast Sitka Campus

Alaskan students in rural communities gain awareness of resource sustainability through long established traditions and experiences while hunting, trapping, fishing and gathering. However, subsistence resources are managed within a western scientific framework. Students interested in pursuing a resource careers can have difficulty connecting these worlds. University of Alaska Southeast (UAS) developed a program to assist students through this transition to increase retention and completion of four year natural resource-related science and technical degrees. Understanding Pacific Pathways (UPP) uses Alaska-specific foundational coursework to connect traditional place-based experiences with western science. In 2010-12, 300 rural and Alaska Native undergraduates participated in laboratory, distance-delivered and field courses based upon a central unifying theme connecting marine and terrestrial pathways in the North Pacific. Another 1400 K-12 students were engaged in a week-long science mentoring program. Partnerships established among agencies and academia fostered mentoring and regional exchange for students, faculty, and scientists. Course offerings used molecular techniques and methods in fisheries aquaculture content to address how changing climate is affecting terrestrial and marine systems. Impacts have been measured through assessment of student recruitment, enrollment, retention and employment. Overall outcomes include increased preparation of rural students for careers as scientists, professionals and technicians with 80% engaged as students or employed in the sciences. The UAS program has connected students with graduate advisors

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and career track programs. Strengthening the capacity of UAS to integrate experience, research and education within a cross discipline academic program will continue to inspire a cohort of students to pursue science career pathways.

#0295

Growing a Student Garden: An Integrated Approach to Teaching, Service Learning and Student Recruitment.

David Berle
University of Georgia

As a centerpiece for student recruitment and involvement in a newly created Certificate in Local Food Systems at the University of Georgia, a two-acre sustainable garden was established with funding from a NIFA HED Grant. The garden serves as a teaching garden for two sustainable food production courses and two freshman seminars with enrollment at 70 per year. The garden is also home to two student organizations- one called UGArden, with over 100 members who operate a cooperative CSA; and the other called Campus Kitchen, with over 50 members who provide food to local families. The garden also hosts two graduate research projects and three student demonstration projects funded by the UGA Office of Sustainability. Additional projects at the garden include a woodland mushroom study, an aquaponics greenhouse, and a precision irrigation demonstration. Multiple service learning projects engage students with the local community by supporting a network of community gardens and establishment of school gardens. During the first eighteen months of operation, the student garden hosted over 40 tours to student groups, held 8 workshops for schoolteachers and county agents, and engaged students in more than 8,000 volunteer hours. In addition to formal course outcomes, over 200 students have been trained at high level skills such as bee keeping, wood construction and large equipment operation. The student garden has helped attract 15 students to the new certificate program and has gained campus-wide recognition as a place to actively learn about growing food and serving the community.

#0298

A Comparison of Student and Professor Perceptions of Teacher Immediacy Behavior Use in the Classroom

Karla P. Shelnett, Christopher M. Estep and
T. Grady Roberts
University of Florida

Immediacy is defined as behaviors used by instructors that bring about a perceived closeness between instructors and students, and has been shown to be effective at improving students' motivation, attention, performance, and learning. Immediacy behaviors are classified as verbal or nonverbal and consist of actions including, calling students by name, praising students' work, moving around the classroom while teaching, and smiling at students. The purpose of this study was to compare students' and instructors' perceptions of instructors' immediacy use. Students and instructors both completed the immediacy behavior scale, which consisted of 34 Likert-type items that measure the perceived frequency of immediacy behavior use. Student means were calculated for each item in ten classes and compared to the instructor's response for that class. A discrepancy score was calculated by determining the difference between the instructor's and students' responses. Discrepancy scores were averaged to determine where students' and instructors' perceptions differed most. An average difference greater than one was considered noteworthy, and occurred for five items: 1) Refers to class as "my" class or what "I" am doing; 2) Provides feedback on individual work through comments on papers, discussions, etc.; 3) Asks how students feel about an assignment, due date, or topic; 4) Will have discussions about topics unrelated to class with individual students or the entire class; and 5) Touches students in the class. Instructors perceived they use more immediacy in these areas than students reported. Perhaps instructors might benefit from training on how to better utilize these important immediacy behaviors.

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#0299

Collaborative Teaching: Exploring Faculty Experiences in the Civic Agriculture and Food Systems Minor at Virginia Tech

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Virginia Tech

There is a call in higher education that suggests the need for collaboration within institutions and between institutions and stakeholders to encourage interdisciplinary work. The Civic Agriculture and Food Systems (CAFS) minor at Virginia Tech (VT) has developed an interdisciplinary teaching team approach linking multiple departments within the College of Agriculture and Life Sciences in a collaborative effort to enhance faculty teaching and knowledge in agriculture and life sciences. The purpose of this research is to explore collaborative teaching experiences of faculty in the CAFS minor and report on teaching enhancement, interdisciplinary knowledge, and challenges experienced. This research builds on previous mixed-method research conducted at VT that explores how interdisciplinary, collaborative teaching techniques were being used across the VT campus originally conceived through experiences of 10 faculty involved in the CAFS minor. Teaching faculty (n=292) completed a survey about collaborative teaching with 6 follow-up focus groups (n=11). The responses identified 173 faculty collaboratively taught, reporting it was encouraged by administrative leadership, and enhanced student learning. Results also indicated difficulties with creating/agreeing upon curriculum, as well as institutional constraints stemming from the university management system. To further investigate how interdisciplinary knowledge positively impacted CAFS faculty understanding of complex, agricultural issues, and introduced them to new teaching strategies for implementation, an in-depth focus group was conducted. Objectives include 1) collaborative teaching enhances teaching practice, 2) if faculty knowledge of agriculture and life sciences is modified, and 3) reveal challenges experienced by faculty involved in collaborative teaching.

#0302

Comprehensive Beef Education Strategic Planning Conference

Heather Stewart, Dennis Brink, Dennis Burson,
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Today's beef system is complex because of changing consumer demands for increased food safety, animal welfare, and environmental health. The continued production of beef to meet increasing demands for high quality protein for human consumption depends on increasing the number of individuals educated in the production of beef from conception to consumption. Therefore, a multi-state comprehensive beef education planning conference was conducted to gather beef academics and beef professionals and collaborate to develop an innovative way to enhance beef education and foster partnerships to implement innovations. This conference was made possible by a USDA-HEC grant (NIFA Award #: 2011-38411-30534). Each state partner was asked to develop a SWOT analysis to identify the current state of their institution's beef education program. A post-conference survey indicated that the SWOT analysis increased conference participants' overall knowledge of each institution's current beef education program. Following the SWOT, groups of beef educators and beef professionals collaborated to develop models. All models indicated the need to augment discipline-based beef education with interpersonal skills. Faculty development in the area of interpersonal skills was considered essential. Case studies, internships, and learning experiences in various environments, domestic and international, were noted in each model as a fundamental component. Also developed were outlines for a unique freshman seminar, tiered beef production classes, and web-based resource sharing. It was the consensus of the participants that the partnerships between beef educators and beef industry professionals should be expanded and utilized.

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#0303

Variables Associated with Course Completion Status and Final Course Grade in an Introductory College Animal Science Course

Steffanie V. Burk, Mary G. Rossano, William J. Silvia, Eric S. Vanzant, Anthony J. Pescatore and Robert J. Harmon
University of Kentucky

A common concern for university faculty members is the success of students within their college courses. To investigate factors associated with student course success, data was collected on 405 participating students in two semesters of Domestic Animal Biology. This introductory course is required for Animal Science, Equine Science and Management, and Agricultural Education majors, and assesses students through exams, quizzes, homework assignments, and laboratory exercises. Students completed a demographic survey, background knowledge test, and the California Critical Thinking Skills Test (CCTST) during the first several weeks of the semester. Final course grades and course completion outcomes were recorded subsequently. Following chi-squared tests of independence for identification of variables of interest, multiple logistic regression was performed using manual selection to identify factors linked to course withdrawal (AUC=0.72). High school GPA below 3.5, older age, and having lived in-state for a longer period of time than out-of-state were related to increased odds of course withdrawal ($p < 0.05$ for all variables listed). A multiple linear regression analysis was conducted using manual selection to identify predictors for final course grade percentage ($R^2 = 0.24$). High school GPA and CCTST percentile rank were positively associated with final course grade percentage ($p < 0.05$). Additionally, attending private high school/homeschooling, participating in agricultural clubs, or coming from a suburban or rural non-farm home were associated with higher course percentages ($p < 0.05$). The models discussed here appear to have some predictive value for final course grade and course completion status.

#0305

Development and Classroom Incorporation of Novel Software for Collection and Visualization of Dietary Behavior and Reasons for Eating

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University of Arizona

Susan Lanza-Jacoby and Francis Gilman
Thomas Jefferson University

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New Mexico State University

Increasing an individual's awareness of their typical dietary habits and reasons for making food-related decisions represent first steps toward fighting the obesity epidemic. We developed a software application and classroom exercise to allow students to track their intake in real time from any location through Twitter. We tested the feasibility and acceptability to capture all foods and beverages consumed and reasons for choosing these foods to identify patterns in intake and behavior, and relationships between foods and contextual factors. The exercise of identifying and analyzing intake behaviors was incorporated into the classroom of future health care educators. Participants were trained to record all food and beverages consumed over 3 consecutive days using their mobile device's native Twitter application. A preset list of 25 hash tags which represented food groups and reasons for eating were provided to participants who were encouraged to annotate the hashtags with descriptions, photos, or links to provide contextual information. Data were then captured using our novel software and analyzed. The hashtags #grains, #sweets, and #protein were the most frequently used food tags, while #convenience, #taste, and #mood were most popular reasons for eating. An association matrix was used to determine the most commonly co-reported food and behavior tags, which suggested possible associations. Twitter provides a simple, flexible, efficient, and user-friendly method for capturing real-time dietary behavior. Incorporating reporting and analysis into the classroom could help students or individuals become more aware of barriers to healthy eating and better prepare them as future educators in health care fields.

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#0307

Show Me the Money: Agricultural Communications Graduates' Starting Salary at University

Jessica Fry, Erica Irlbeck and Cindy Akers
Texas Tech University

When recruiting new agricultural communications students, many want to know what their average salary could be upon graduation. In order to obtain and sustain these students in the major, it is important for the department at [University] to know its average graduate's starting salary as well as the involvement in internships, advanced degrees, and other activities that helped lead to employment. A researcher-developed, online survey instrument was e-mailed through the department's agricultural communications alumni listserv; 58 alumni completed the questionnaire. First year mean salary for those holding a bachelor's degree was \$31,326 (SD = 6,402.43), compared to a mean salary of \$31,560 (SD 6,035.17) for those with a master's degree. The impact of the first year's salary was not significant for respondents with a master's degree ($t(46) = .612, p > .001$). Of the participants, 91% completed an internship while in college, and of those, 26.7% received a full-time job from their internship employer; however, internships did not make a significant impact on starting salary ($t(46) = .31, p > .001$). Only six participants studied abroad, but 94.83% participated in a student organization. Most alumni began working on their master's degree (36%) immediately following graduation, and 12% accepted a job offer upon graduation. Although internships do not necessarily lead to higher-paying first jobs, they can lead to employment, which can be difficult for some graduates in this economy. Further research should focus on understanding why master's students are not earning significantly higher salaries than students with bachelor's degrees.

#0317

Learning About Futures Markets Through a Classroom Experiment

Maud Roucan-Kane and L. A. Wolfskill
Sam Houston State University

Students learning about futures markets often have a hard time understanding the concepts. Classroom role playing events are extremely helpful to aid students in practicing the theories. This experiment puts students in the shoes of traders and hedgers, and can be successfully run in one hour. Thorough presentation of the event rules is critical, and can be done either at the beginning of the class or during the prior class period (recommended for 50 minute classes). To start, students were given a beginning spot price and then allowed to trade among themselves. Cards and coins were used in the experiment at set intervals to simulate price expectations and confirm the magnitude and direction of price movements. The professor represented the exchange and kept track of current prices, trades, card and coin flips, and answered students' questions. A single professor may find it hard to juggle all the tasks and can be assisted by volunteer student helpers, who should be trained in advance. To maximize interest, students with the highest profits received bonus points. Through this role-play, students were taught about the role of price expectations, day traders versus position traders, open interest, settlement price, liquid markets, basis, trade offsetting, and calculating profits and losses. The following class period was spent further discussing these concepts. The experiment was a success and was then referred to throughout the semester when teaching concepts. We recommend involving students as helpers, which was seen as "empowering." Student feedback indicated that the event was well-received.

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#0318

Survey Of Preservice Agriculture Teachers' Knowledge of Teaching and Technology

Wendy J. Warner and Joy M. Marshall
North Carolina State University

With an increased emphasis on 21st century skills, technology integration in agriculture classrooms is an important topic. However, there is a lack of current research on preservice agriculture teachers' knowledge of teaching and technology. Technological Pedagogical Content Knowledge (TPACK) serves as a framework to better understand the components of teacher knowledge contributing to effective technology integration (Mishra & Koehler, 2006). Student teachers (n=27) were surveyed using an adapted version of a TPACK assessment instrument (Schmidt, Baran, Thompson, Koehler, Mishra, & Shin, 2009) to determine their perceived levels of Technological Pedagogical Knowledge and Technological Pedagogical Content Knowledge (TPACK). A majority (over 75%) of participants felt they were able to select technologies to enhance their content, teaching methods, and student learning. Additionally, most participants indicated they could utilize and provide leadership to others in selecting strategies to combine content with instructional technologies and teaching approaches. Participants felt they were best able to teach lessons combining relevant content with appropriate technology and teaching approaches in the areas of agriscience applications, animal science, and horticulture. They felt least confident in their ability to teach lessons combining relevant content with appropriate technology and teaching approaches in the areas of equine science and agricultural mechanics. Participants recognized their agricultural education professors, concentration area professors, and general agriculture professors as most appropriately combining content, technologies, and teaching approaches in their instruction.

#0319

Engaging Student Self Learning Through an International Experience

David Jones
North Carolina State University

Students involve themselves with international experiences for a variety of reasons. Students wish to serve, explore, travel as well as learn about different cultures and peoples. Students state they are looking to increase "life experiences" in order to assist them in their future endeavors. Gillespie, Braskamp and Dwyer, 2009 examined how experiences help to develop student's cognitive, intrapersonal and interpersonal skills. International experiences shape students views of other cultures, increase their abilities to think critically about national and international issues along with their views regarding their own communities. This study focused on how student's perception of the Central America country of Belize changed after an international trip to Belize. Sixteen [university] students conducted a pre and post-test regarding their knowledge, perceptions and understanding of Belize including their understanding of Belize agriculture. Students then engaged in a 10 day trip to Belize where they lived with Belize villagers and worked alongside village farmers. The students assisted in the construction of a Cacao drying structure as well as building fermentation boxes for the village. After the 10 day experience students were then asked the same questions to assess differences from before and after their experience. Through various assessments students critical thinking, leadership, teambuilding and intra and interpersonal skills were measured. Students were asked to write a reflective journal citing their perceptions and observations before, during and after their experience in order to help trace student changes. Overall student's knowledge, perceptions and understanding of the Belize culture, agriculture and people increased significantly.

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#0320

Beyond the University: Short- and Medium-Term Impacts of an International Professional Development Program for Faculty

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T. Grady Roberts
University of Florida

Ten faculty from the College of Agricultural and Environmental Sciences (CAES) of the University of Georgia participated in a short term professional development program that included a 12-day field trip to Costa Rica. Objectives of the program entailed increasing the faculty's knowledge and experience as well as developing curriculum to better motivate and engage students in food, agricultural, and environmental sciences with a globalized undergraduate curriculum. The excursion included professional development on the topics of Costa Rica, global food production, agricultural and environmental sciences, as well as training in the improvement of teaching and learning. Shortly after the trip, the faculty completed a qualitative and quantitative self-reporting survey. All faculty indicated that the experience increased their knowledge pertaining to global aspects of their respective disciplines, their knowledge and appreciation of Costa Rican Culture, their willingness to participate in future multidisciplinary issues-based teams, and their ability to teach globally-relevant food and agricultural sciences topics. Almost two years later, the faculty were asked to report on medium-term impacts resulting from the professional development program. Most respondents cited impact in six areas: 1) New and enhanced relationships and professional collaborations with other faculty who participated in the field trip, including on-going interdisciplinary projects; 2) Better understanding of CAES and its multi-disciplinary teaching programs; 3) Better understanding of pedagogical and active learning approaches, as well as improved internationalized examples for their classes; 4) Increased disciplinary knowledge; 5) Positive attitude towards Costa Rica and international engagement; and 6) A

better appreciation for what is available in the United States.

#0321

Comparative Profile of College of Agriculture and Life Science Transfer and Native Students' Pre-College and Collegiate Academic Characteristics

Kiesling, J. A., Martin, R. A, Miller, W. W. and Polito, T
Iowa State University

Community college enrollment in Iowa grew by over 25,000 students from 2005-2010. During that time period, Iowa State University's (ISU) College of Agriculture and Life Sciences (CALs) also observed record enrollment for new transfer students. Projections indicate that community college enrollment will continue to grow, thus continuing to increase the number of students transferring to four-year institutions. It is imperative to determine if these two groups possess similar academic abilities and perform similarly while at Iowa State University. The objectives of this study were to identify the pre-college and collegiate academic characteristics of transfer and native students enrolled in ISU's CALs during the fall of 2005-2010. After identifying these characteristics, the two groups were compared to determine any similarities or differences. The results indicate that these two groups possessed similar innate academic abilities as measured by ACT score and work ethic, measured by high school grade point average. The study confirmed that both student groups experienced institutional shock, evidenced by a drop in performance during their first semesters. Both groups recovered from this shock and eventually graduated with nearly identical grade point averages. This study confirmed previous research regarding institutional shock and the performance of transfer students at the four-year institution within agriculture, life science and natural resource programs.

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#0322

You Mean I Have To Work With These People!!!

David Jones
North Carolina State University

During this session participants will determine their personality profile by using the DISC. The DISC originally was developed in the 1920's by William Marston. It measures four preferences or personality types: Dominant, Influential, Steady or Conscientious.

By understanding what preference or personality type we are as well as knowing those personality types of others we are better able to deal with situations when they arise not only in the work place, but in our personal lives as well.

This session will give insight into why the people around us act and react the way they do. The DISC will help to develop communication, stress management, workplace diversity, time management, conflict resolution, team building, sales training, personal growth, relationships, as well as many other applications.

The basic foundation of using the DISC is to understand yourself and then others and then to realize the impact of personal behaviors on one another. This is critical for teachers and students to understand this.

During this session participants will do a self-assessment using the DISC profiling instrument. Then participants will conduct an activity that demonstrates the different personality profiles (as a group). Next the participants will receive information regarding the different types of DISC personalities. The final part of the session will show the participants different ways to work with and deal with diverse or dissimilar personalities.

#0323

Comparative Profile of College of Agriculture and Life Science Transfer and Native Students' Performance in Upper-Division Courses

Kiesling, J. A.
University of Arizona

Martin, R. A., Miller, W. W., Polito, T. and Skaar, B
Iowa State University

Community college enrollment in Iowa grew by over 25,000 students from 2005-2010. During that time period, Iowa State University's (ISU) College of Agriculture and Life Sciences (CAL S) also observed record enrollment for new transfer students. Projections indicate that community college enrollment will continue to grow, thus continuing to increase the number of students transferring to four-year institutions. As transfer enrollment grows and pressure to create articulation agreements mounts, it must be determined if transfer students perform as well as their native student peers in upper-division coursework at the four-year institution. The objective of this study was to compare performance in principle and upper-division coursework and determine where similarities or differences exist and the impact upon performance. The performance of transfer and native students enrolled in ISU CALS programs between the fall of 2005-2010 was examined in ten course sequences. These course sequences consisted of coursework in Agronomy, Animal Science, Chemistry, Economics, English, Horticulture, and Physics. The results indicated that transfer students performed better in principle courses completed at the community college. In upper-division course performance, transfer and native students performed very similarly in 5 sequences, evidenced by an 80% or higher overlap in performance. In two course sequences, transfer students performed better than native students in the upper-division course. The study indicated that, overall, transfer students perform on par with native students, indicating adequate preparation for success. Developing articulation agreements with community college students will be in the best interest of Colleges of Agriculture and Life Sciences.



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#0325

Evaluating Outputs and Outcomes in a Multi-Campus Education and Training Program

C Kinoshita, O. Steele, G. Witterman, G. Hontz, R. Takahashi, P. Millen, A. Emmsley, W. Sakai, I. White, S. Chiang and M. Madden
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The USDA-NIFA funded University of Hawaii (UH) Agribusiness Education, Training, and Incubation (AETI) Program represents a decade-long consortium effort of nine UH campuses and UH's Agribusiness Incubator Program aimed at strengthening Hawaii's food security by producing a skilled workforce in food, agriculture and natural resource management. Much of the earlier stage of the consortium effort focused on developing and refining shared vision, goals, governance, and programs; more recent years have focused on developing and refining an effective evaluation process built upon USDA's Logic Model (LM) framework. The first year of the LM evaluation process concentrated on defining consortium-wide LM objectives, outputs, and outcomes, designing the flow between the individual campus LMs and the consortium LM, and indentifying effective measurement tools and procedures for the evaluation process. By the end of Year 1, it became evident that the LM was too complex and often inconsistent across campuses, thus needing to be refined and streamlined. In Year 2, the consortium LM was modified and streamlined, and the campuses focused on collecting baseline performance data using common survey tools. Year 3 marked the first year in which changes in outcomes were measured and reported. The LM assessment, now in Year 4, indicates successful achievement of the following consortium-wide objectives: Recruit students (especially Native Hawaiians) into agriculture related degrees; Offer new or revised courses and degrees; facilitate effective internship opportunities for students and employers; Provide financial and other support to students in agriculture and natural resource management

#0326

Training Leaders in Climate Change Through Experiential and Field-Based Learning

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The University of Montana

Climate change presents complex and pressing challenges to managing natural resources and sustaining agricultural systems. Training leaders to effectively respond to climate change requires innovative teaching approaches, ones that emphasize problem-based learning, integration across disciplines, communication skills, and the ability to apply conceptual knowledge to real world challenges. To train undergraduate students, the University of Montana developed an experiential and field-based learning program. The program involves (1) an internship program that matches students with government agencies and non-profits to work on applied projects focused on climate change and conservation related to forests and rangelands, (2) a competitive grants program to support students who design and implement a field project that investigates or mitigates climate change impacts, (3) an interdisciplinary field course focused on climate change impacts and adaptation in forest and grassland ecosystems, and (4) a symposium to facilitate dialogue between students, faculty, employers, and the public. In its first year and a half, the program trained 35 students who developed knowledge and practical skills to address climate change impacts on natural resources; students also improved their the ability to apply classroom knowledge to real-world settings and to communicate about climate change in a professional setting. Over 40 new and expanded professional networks and strategic partnerships were developed that enabled opportunities for student engagement on natural resource challenges resulting from climate change. Nearly a quarter of the students participating in this program secured work either directly or indirectly through their participation.

2012 NACTA/DOCE Abstracts

#0333

My Second Life: Lessons Learned From the Front Line

Tracy Rutherford, Holli Leggette and
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Texas A&M

David Doerfert and Christy Witt
Texas Tech University

Leslie Edgar and Don Edgar
University of Arkansas

Contemporary education requires innovative thinking and development of high impact experiences that take students beyond rote memorization to higher order critical thinking skills. Incorporation of Second Life™ into a graduate-level crisis communications course allowed instructors to take students into a coastal community destroyed by a hurricane and a rural economy devastated by a contaminated food supply without putting students into harm's way or waiting for mother nature to cooperate. Student feedback, instructor experience, and review of research have identified lessons that instructors should know before incorporating virtual worlds into their teaching. As with any new technology, time for student and instructor orientation is a necessity. Students must have opportunities to become comfortable with the features of the software, tasks they will complete, and potential barriers of technology-enhanced learning. Instructors must recognize that some students will not adopt the technology, regardless of experience. Students must identify the value of participating in the experience; virtual world simulations need to be value-added to a course not just a course add-on. Virtual world simulations are an investment, both of time and resources that requires careful consideration and planning before incorporating into a course or curriculum. Simulation execution for synchronous activities demands advanced planning to accommodate students' and instructors' "first life" commitments. Because virtual world simulations are high-impact experiences that engage students' critical thinking skills and emotions, it is imperative to adopt virtual education purposefully and longitudinally.

This project was supported by Higher Education Challenge Grant no. 2009-38411-

19768 from the USDA National Institute of Food and Agriculture.

#0334

Using Involvement Theory to Examine the Relationship Between Undergraduate Participation in Extracurricular Activities and Leadership Development

Elizabeth A. Foreman and Michael S. Retallick
Iowa State University

Recent higher education reforms have led to a greater focus on student learning outcomes, including professional skill development, and the impact of experiences outside the classroom as learning opportunities. Traditional-age undergraduate college students who were classified as seniors in the College of Agriculture and Life Sciences (N=969) were sampled to examine the undergraduate students' relationship between extracurricular involvement and leadership outcomes. Data related to the how much time a student spends on an extracurricular activity and how focused the student is on the organization were collected. Leadership, as an outcome, was measured using the individual values scale of the Socially Responsible Leadership Scale. The number of extracurricular clubs and organizations that students reported being involved in ranged from 0 to 11 (M = 3.41, SD = 2.44). The number of clubs in which a student participated was associated with increased individual leadership values (F (3, 173) = 5.83, p = .001). Students who served as a club officer scored statistically higher on the individual values leadership scale (t (161.04) = -2.67, p = .008). The amount of time in which a student participates in a club or organization did not have a statistically significant relationship with the individual values on the leadership scale (F (3, 173) = 1.58, p = .197). Finally, there was a threshold where increased involvement in the number of clubs or organizations decreased leadership outcomes. Knowing this, faculty and staff should encourage students to become active in 3-4 organizations to optimize individual leadership outcomes.

2012 NACTA/DOCE Abstracts

#0335

International Agriculture and Development: A New Dual-Title Graduate Degree Program at Penn State University

Melanie M. Foster, Thomas H. Bruening,
Edwin Rajotte and Deanna Behring
Penn State University

Graduate level education for students in agriculture often lacks adequate preparation in the complex, multidisciplinary nature of international agricultural development. Students graduate with technical expertise but oftentimes lack the ability to apply that expertise to the challenges associated with global markets and socio-economic development in international settings. In Penn State's College of Agricultural Sciences we have developed a new masters and PhD degree curriculum in International Agriculture and Development (INTAD) in response to these challenges. Students entering the dual-title graduate degree program will combine their technical degree with an internationally focused program of study. Acquiring the dual-title degree in International Agriculture and Development offers significant additional value to graduate training in established graduate degree programs. Through new courses and experiences, our graduates gain an understanding of the relationships between agriculture, poverty and health, as well as how current patterns may be disrupted by man-made and natural disasters, including climate change and global warming effects. Graduates of this program will be prepared to lead in a globalized world. This presentation will cover the development of the INTAD dual-title degree program, how we built interest and support among stakeholder groups, and the initial response to the program. Internationalization of graduate curriculum will also be discussed. Creation and launch of this initiative was funded in part by a USDA Higher Education Challenge Grant.

#0338

Enhancing Science Interest Through the 4-H Science Extravaganza Program

Lindsay Myers and Levon Esters
Purdue University

The purpose of this study was to assess 4-H youth participants' interest in science and their science-related career goals. Participants included 23 youth who participated in Science Extravaganza, which is a 6-week after school science program for intermediate school students. The goal of Science Extravaganza is to expose 4-H youth to science projects to increase their level of understanding of how science can solve everyday problems and therefore making science-related careers viable options. Results from a post-program survey indicated that a majority of participants enjoyed hands-on science-based activities and also indicated that the Science Extravaganza experience provided materials that are not available to them in school or at home. More than one-third of participants stated that they hope to pursue a science-related career. Themes from opened-ended responses indicated that the most popular science activity was one that utilized chickens as a way to explain science. Implications for practice are that informal science learning experiences are key to engaging youth in science-related activities. Future research should utilize a larger and more diverse sample of students participating in the program. Research should also be conducted to see if activities utilizing animal science activities rather than traditional science projects are a more effective way of enhancing youths' interest in science.

2012 NACTA/DOCE Abstracts

#0340

Identifying the Relationship of Precollegiate and Collegiate Experiences in Predicting the Community Values Component of Leadership Development

Elizabeth A. Foreman and Michael S. Retallick
Iowa State University

Recent higher education reforms have led to a greater focus on student learning outcomes, including professional skill development, and the impact of experiences outside the classroom as learning opportunities. In addition, higher education has recognized participation in extracurricular activities as a strategy to reach learning outcomes, such as leadership development, and not simply as a social activity. Undergraduate college students who were classified as seniors in the College of Agriculture and Life Sciences (N=969) were sampled to examine undergraduate students' relationship between extracurricular involvement and leadership outcomes. Participants completed a web-based instrument that included the citizenship scale of the Socially Responsible Leadership Scale-Revised2. A two block hierarchical regression was conducted. The first block containing pre-collegiate characteristics and experiences (i.e., pre-collegiate extracurricular involvement, pre-collegiate leadership training, leadership self-perception, high school class rank, and gender) explained 19.8% of the variance of the dependent variable community values. The second block, which added college experiences (i.e., extracurricular involvement, leadership classes completed, leadership training, Greek participation, learning community participation, internships, and cumulative grade point average) increased the explained variance by 12%, explaining 31.8% for the model. When analyzing precollegiate experiences by themselves, high school extracurricular activity was significant at predicting citizenship. However, when college experiences were added to the model, extracurricular activity in college was the most significant predictor and high school extracurricular activity was no longer significant.

#0342

Become a Food Safety Scientist Through Food Safety Virtual Labs in the Classroom

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South Dakota State University

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New Mexico State University

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North Dakota State University

An on-line Food Safety Science curriculum incorporates a problem and/or project based learning experience into virtual labs – bringing students beyond point, click and drag. Students become more engaged with an inquiring mind in science and math when associated with food safety careers through the use of virtual labs. Preliminary research indicated a greater improvement in common laboratory techniques when experiencing a virtual lab versus a traditional lecture that both incorporate a food safety concept. A total of 129 middle and high school students using virtual labs to learn a lab technique scored significantly higher on a post-test ($p = .01$) than traditional lab kick-off lecture. Student's experiencing the Food Safety Scientist curriculum indicated an increased awareness of a food safety science career path, and the importance of STEM related coursework. The overall goal of creating the on-line Food Safety Scientist curriculum is to: 1) strengthen undergraduate and high school instruction; 2) increase understanding of key concepts in food safety and agricultural sciences; and 3) fill significant STEM gaps in pre-requisite knowledge mandatory for students to succeed in STEM intensive undergraduate programs. Teachers in Sciences, Ag, and Family Consumer Sciences are embracing this program. SDSU provides the content and direction of the virtual labs, New Mexico State University Gaming Laboratory provides the technical creativity, and North Dakota State University is the 3rd party evaluator. This project builds from the grant lead by NDSU (sub-awards SDSU and NMSU). Food Safety Scientist Website: <http://sdstate.edu/hns/outreach/food-safety/food-safety-science.cfm>

2012 NACTA/DOCE Abstracts

#0343

Sustaining Agriculture Through Graduate Directed K-12 Outreach Experiences

Melissa Welsh, Neil Knobloch and Herbert Ohm
Purdue University

Graduate students from plant breeding and genetics were trained with Learner Centered Teaching (LCT) knowledge and techniques for K-12 outreach education. The outreach component was designed to enable graduate students with non-pedagogical backgrounds the development of expertise to build interest in food, agriculture, life and natural resource sciences among the K-12 community. Two cohorts of 18 students utilized a variety of pedagogical strategies to disseminate concepts from their research studies for 6 youth audiences. Graduate students were predominately doctoral students at varying progress in their programs of study. Students gained the ability to describe the LCT module and identify LCT approaches and strategies that could be used for effective engagement. Graduate students self-reported an increase in teaching self-efficacy levels after their outreach experience. Graduate students' summaries emphasize the value in propagating their research to an audience outside their field of study as a method of encouraging career development to perspective students in the field, initiating valuable communication to a non-agricultural audience and practicing effective teaching strategies. Reflections also include a positive desire to continue and expand opportunities for K-12 outreach for non-education agriculture graduate students. International graduate students reported the critical development of social skills necessary to communicate effectively among a non-scientist based audience. The project continues to add to the discussion of soft skill development among graduate students in agricultural related occupations. The project is funded in part by AFRI grant 91810, "Partnership for Research & Education in Plant Breeding and Genetics".

#0345

Core Content and Competencies Needed in an Agricultural Communications Doctoral Program: A Delphi Study

Jennifer Ann Smith, Shelly Peper Sitton, and
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At the turn of the 21st century, agricultural communications experts indicated proper communication is crucial to producing the safest, most abundant food supply in the world. Early in the same decade, researchers noted that society's lack of agricultural knowledge meant agricultural communicators were needed to educate the public and to support the industry. Research in 1996 showed that the competencies needed to become an agricultural communicator change with technology and that a pressing need exists to examine the agricultural communications graduate curriculum. As agricultural communications became a more popular profession and academic choice, the need for more graduate courses and programs became apparent, according to researchers in 2003. While studies in recent decades have reviewed agricultural communications curriculum by inquiring of industry, faculty, graduates, and students to help determine coursework, competencies, and objectives for secondary, undergraduate, and master's programs, no formal inquiries have assessed what core curriculum and competencies are needed in a doctoral program in agricultural communications. In the summer of 2011, a Delphi study was conducted using a panel of faculty from 13 universities that offer undergraduate agricultural communications degrees. All panelists have earned doctorates and were employed as full-time faculty by the universities they represented. From an initial panelist-generated list of 120 core content items and 125 core competency items, the panel reached agreement on 55 core content items and 59 core competency items needed in an agricultural communications doctoral program. These detailed lists can guide departments as they consider addition of an agricultural communications doctoral program.

2012 NACTA/DOCE Abstracts

#0349

Yearlong Involvement With the Curriculum for Agricultural Science Education: A High School Student Perspective

Misty D. Lambert, Jonathan J. Velez and
Kristopher M. Elliott
Oregon State University

The purpose of this study was to begin examining the impact of the Curriculum for Agricultural Science Education (CASE). Under development since 2008, the curriculum is intended to integrate core academics and Science, Technology, Engineering, and Math (STEM) into agricultural education programs. This longitudinal descriptive correlational study (N = 173) sought to examine the perceptions of students enrolled in a CASE course specific to the constructs of critical thinking, task value, autonomy, science self-efficacy, and cognitive engagement. Students were assessed using Likert-type instruments at three points during a yearlong CASE course. The researchers used a purpose sample of students from four different high schools resulting in data from 353 students of which 173 completed all three assessments. Results revealed no significant differences in construct means between points of assessment. Students reported the highest mean scores, from highest to lowest, in cognitive engagement, autonomy, science self-efficacy, task value and critical thinking. Correlation of the constructs of interest with student characteristics revealed small correlations between gender, English Language Learner status, and activity in the FFA with task value, autonomy, science self-efficacy and cognitive engagement. Conclusions and recommendations are discussed in light of both the findings and the exploratory nature of this study.

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#0350

Student Satisfaction and Self-Efficacy in a Teaching Methods Course by Treatment

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University of Arizona

Teaching Methods is typically the last course a teacher education major completes before student teaching. While this course is taught many different ways across different institutions, typically the students teach short lessons and receive feedback from an instructor. Does the format of these feedback conferences impact student satisfaction with the course? Does it impact their self-efficacy? Two different types of conferences were used in this quasi-experimental design: one group in which students were just given feedback from the teacher and from peer feedback forms and another group in which students were asked questions and guided through reflective thinking about their teaching. Bandura's self-efficacy theory and Rosenshine and Fursts' Characteristics of an Effective Teacher guided and operationalized the study. A researcher created instrument was validated and used to collect self-efficacy and satisfaction measures as well as student demographic data. Measures of central tendency and variability are reported overall and by treatment group. Overall, students were satisfied with the course regardless of the treatment (M = 3.86 out of possible 5.00), but students receiving the reflective conference were more satisfied (M = 3.95) than those students who received feedback only (M = 3.77). Students who received the reflective conference felt more efficacious about their ability to be clear and enthusiastic in the classroom and to keep students on task. Students who received feedback only were more efficacious about their ability to be instructionally varied and teach to objectives. These findings help educators understand feedback conferences and their impact on future teachers.

2012 NACTA/DOCE Abstracts

#0351

How Does CASE Compare to High School Science and Non-Science Courses?

Misty D. Lambert, Jonathan J. Velez and
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Oregon State University

With the implementation of a new National curriculum in high school Agricultural Education courses, student opinions are still little known. The purpose of this descriptive study was to explore student feelings about their CASE courses as compared to their other science and non-science high school courses. Brain-based learning theory served as the framework for the study. The population included 258 students from four high schools. While demographic information was reported for the students, the focus of the study was students' response to their level of agreement with statements comparing their CASE course to their other high school classes as well as their high school science courses. Results revealed student areas of agreement regarding the CASE courses and contrasting results reveal areas for future research and potential improvement of the curriculum. When comparing CASE to their other science classes, those items with the highest level of student agreement were (a) This class has less homework, (b) This class is easier for me, (c) This class is more fun; and (d) This class has more activities. In the student comparison to a typical high school class, the questions with the highest agreement numbers, in order, were (a) I work with my class classmates more in this class, (b) This class lets me experience what I am learning more; (c) This class focuses on careers more; and, (d) This class requires more participation. The researchers also connect these findings back to tenets of brain-based research.

#0359

An Evaluation of Students' Cognitive Parameters as well as Their Ability to Utilize Concept Maps Relating the Principles of Soil Science

Jon M. Trappe, Lori J. Snyder and
Stephanie Mitzman
Purdue University

Concept maps are a useful tool for evaluating student understanding of complex subject matter in the disciplines of agriculture science. In this study we measured the students' comprehension by comparing a pre and post concept map score. Additionally, we compared the student comprehension with demographic information relevant to the subject matter, as it is possible to weight comprehension based on previous knowledge and experience. Therefore, the purpose of this study was to evaluate the effect of previous knowledge on learning techniques in an introductory agronomy course, AGRY 105 – Crop Production. A total of 71 students from two semesters constructed pre and post-concept maps. Concept maps were scored based on valid relationships, hierarchical structure, interconnections, and use of examples for basic soil science. Concept map scores were correlated to student demographics and previous experiences related to soils. There were visual trends across comprehension and learning experiences, with students having taken previous agronomy courses as having the greatest influence ($P\text{-value} \leq 0.05$) on grading categories, specifically, relationships, hierarchy and total score. Student participation in high school soil judging and the grade earned in the course did not affect concept map category scores. Additionally, problem solving techniques and learning styles were evaluated using Gregorc Learning style preferences and VIEW, a problem solving assessment, respectively, for a sample of the population and tested against concept map scores. Concept maps can be a useful tool for measuring and visually displaying student comprehension of complex subject matter.

2012 NACTA/DOCE Abstracts

#0360

Using Interactive Flash Games to Enhance Student's Learning

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North Dakota State University

Interactive flash game teaching is an active learning method and learner-centered. The objective of this paper was to demonstrate how the use of interactive flash games could help students understand complex concepts and difficult new material, and improve their study skills. Flash games, containing 80 questions each, were built to support students learning. Each question had a choice of four possible answers. Games were companion tools to Feeds and Feeding, Applied Animal Nutrition, and Animal Reproduction courses taught at the University of Minnesota, Crookston campus. Each course had three or four games. The game template was the same for all courses. The efficacy of flash games in improving students learning was compared to that of commonly used study guides. Student learning and comprehension of the course material were tested using final exams. Final exams were made of two sets of questions drawn and weighted equally from the games and the study guides with no two sets containing the same question. For each course, flash games and study guides covered the same learning lessons but not the same questions. Final exam scores and student surveys clearly supported flash games as an effective technology in improving student comprehension and enhancing learning. For all three courses, students' exam scores were improved by an average of 16.0 ± 1.6 points by using flash games over study guides. More than 90% of students indicated flash game-assisted instruction contributed to better learning.

#0363

Are Students Responding to My Text Message During Your Class?

Kevin J. Donnelly and Dana J. Minihan
Kansas State University

Students not paying attention in class is not a new phenomenon (ie. sleeping, reading the campus newspaper, doodling on the desks). However, electronic communication now allows students to engage in immediate contact and permits them to carry on conversations outside of the classroom. Advancing cell phone technology facilitates quick and discreet access. Text messaging, email, Facebook, Twitter, and Google searches during class time have the potential to be significant distractions from student focus on lectures or other classroom activities and may interfere with learning. Although some instructors embrace social media use during class time to facilitate instruction, much student use during class time is unauthorized and unrelated, and may be in violation of syllabus rules. Evidence from administrative or advisor contact with students using such media suggest they often respond while in class. The objective of this study was to evaluate the extent to which agronomy students are making "electronic contact" outside of the classroom during class time, and what factors encourage or discourage such use. A survey asked students to self-report how they used their time during lecture and lab periods. Faculty were also surveyed to determine to what extent they believe social media use occurs during class, what distractions it causes, and whether they implore policies to restrict such activities. Results suggest a difference in student and faculty opinion on the degree of distraction. Factors most likely to encourage electronic contact during class time were dull and unengaged lectures and absence of restrictive policies.

2012 NACTA/DOCE Abstracts

#0364

From Food, Inc. to Farm Bill: Do Students Perceive the Nuances? Do Definitions Matter?

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Abilene Christian University

Family farm, locavore, factory farm, sustainability, subsidies, organic...many expressions have connotations, the secondary meaning, in addition to the primary meaning, of a word. As the demographic complexion of our students in agricultural and environmental sciences continues to evolve, the degree of agricultural literacy also changes. So, do these example expressions have explicit meanings to today's student or does the average student have any perception at all? Do they perceive the nuances? Do clear definitions matter? A pedagogical process is described where students in a senior-level agricultural and natural resource policy class engage in an exercise early semester designed to gauge their understanding of the term agribusiness and specifically, family farm. Students are asked to address the phrase, family farm, via drawing. Students are provided a "canvas" on which they are asked to depict (compare and contrast) a family farm and a corporate farm. Upon completion, each student reviews their peers' illustrations. Consistently, the ultra-majority of students depicts the family farm as an idyllic, pastoral place of limited acreage while the corporate farm is usually expressed as a monoculture behemoth. Discussion follows. Students are then led through two different documents, one illustrating the varied views of a family farm and the second, a USDA-ERS publication, America's Diverse Family Farms (current edition) which organizes (family) farms into distinct categories. Assuming a clear definition exists for a family farm, student comprehension is critical as they evaluate agricultural policy options recommended by legislators, many of which have direct and indirect impacts on farming operations.

#0368

Instructional Coherence of Standards and Assessment of Dual-Credit Courses in Advanced Life Sciences

Megan Anderson, Lisa Keefe, Neil Knobloch and Levon T. Esters
Purdue University

Content, curriculum, and instructional coherence plays a critical role in providing a roadmap for learning in education. Alignment among what should be learned, what is taught, and what is assessed helps facilitate learning. In response to a fragmented American educational system, frameworks (now known as standards) were developed to create a unifying vision as part of systemic educational reform in the 1990s. The goal of this study was to assess whether there is alignment between the final dual credit exam for three advanced life science courses and the course standards. The first step to determine if alignment between the exams and standards was present was to identify the learning domain according to Bloom's Taxonomy. Specifically, Porter's (2002) Alignment Index (AI) was utilized to determine the level of alignment between the standards and exams. The AI considers the overlap between two content matrices (e.g., standards & assessment). The AI yields a numerical value between 0.00 to 1.00 with a higher AI meaning that the two content matrices are more aligned and have higher overlap in topic coverage and cognitive demand. Findings indicated minimum alignment between the course standards and the dual credit exam. The findings also indicated a need to update the standards for the three courses. Additionally, the new standards need to be considered when creating the dual credit examination to ensure that the students are being assessed accordingly. Further research should be conducted to examine the degree of alignment between the enacted curriculum and the standards.

2012 NACTA/DOCE Abstracts

#0372

Integrating Critical Thinking into a Curriculum

David Jones and Mark Kistler
North Carolina State University

Paul (1995) defined critical thinking as a unique and purposeful thinking in which the thinker systematically and habitually imposes intellectual standards upon the thinking. Realizing the importance of critical thinking has led to the desire to teach more critical thinking in courses throughout all curriculums. It is the purpose of American education to teach thinking skills. American educators have continually held that thinking skills are important for future generations. There are several indicators of a critical thinker. A critical reader is aware of the content of the material in which they are reading as well as being able to determine assertions of fact, opinion and belief. The critical listener shares many of the same skills as the critical reader. It has been argued that critical thinking skills need to be embedded in the curriculum. All courses can use critical thinking skills to master concepts and learn the necessary information. (Gallagher, 1975 Paul, Elder, Nosich, Facione, Ennis, Carr all agree that areas that critical thinking needs to be incorporated into are: critical reading, critical listening, and critical questioning. Critical thinkers need to be able to critically express themselves through writing, speaking or other forms of expression. The aim of this critical thinking curriculum is to show the importance of critical thinking skills and to enhance critical thinking dispositions. Allowing students to apply their own abilities of critical thinking to the discussion will enhance the classroom learning.

#0377

Celebrating Advising as Teaching: Designing a Competency-Based Faculty Advisor Development Program to Sustain Advising Excellence

Daniel D. Foster, Terry Musser, Jana Peters, Nancy Dreschel, James Howell and Stephanie Doores
The Pennsylvania State University

A team of professional and faculty advisors from a college of agriculture began a interdisciplinary research study to design a faculty advisor development program based on advising competencies identified by the faculty. The multi-year research project is being implemented in five phases: (1) Determine the competencies to be an effective academic advisor. (2) Design a rubric for measuring the acquisition of advisor competencies (3) Design competency based training for new and continuing advisors (4) Evaluate and revise the competencies based on the evaluation. (5) Develop a program for rewarding those who demonstrate competence at various levels. Using literature review, wisdom of practice and focus groups of students, staff, and faculty characteristics of advising effectiveness were determined. A panel of experts reviewed the statements and organized statements into four domains and eight objectives. A student rating of advising effectiveness (SRAE) was developed for pilot testing. Other tools developed include: an advising syllabus for the college and an online advising manual. It is critical to note the importance of taking the time necessary to achieve buy-in from faculty and administrators. An example includes the outcome of a "Master Adviser" program. When a faculty member demonstrates competence in these identified attitude, knowledge and skills areas, he or she can achieve the "Master Adviser" title, will be inducted into the Academy for Excellence in Advising, and will receive a 1% merit pay raise from the College. The program has been patterned after an existing "Excellence in Teaching" program for the College of Agricultural Sciences.

2012 NACTA/DOCE Abstracts

#0382

A Joint Degree in International Infectious Disease Management & Biosecurity – The First in North America.

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David J. Kabasa, Francis Ejobi and Samuel Majalija.
College of Veterinary Medicine, Makerere University Kampala, Uganda.

Global perspectives in agriculture are critical to the safety of our agricultural resources and require an international solution, yet very few opportunities exist for their study in the United States (US). North Dakota State University (NDSU) and Makerere University (MAK) in Uganda responded to this need by developing the first truly joint Master of Science (MS) and Graduate Certificate (GC) in International Infectious Disease Management and Biosecurity (IDM). The MS, IDM has 8 fully funded students projected to graduate by August 2012; eight more funded students will start in summer 2012. The program requires completion of 30 credits with core courses offered jointly by both institutions. Students can enroll through NDSU or MAK; however, they have to spend at least one semester at the other institution and complete two practicum projects of 2 credits each, one at each institution. The program is innovative, learner-centered, with student engagement, empowerment, and responsibility. There is interdisciplinary learning with cross pollination of teaching methods from both institutions; it is problem-based learning with a service-learning component. In June 2012, the 8 students will be participating in a community service project in Arizona coordinated by the US Centers for Disease Control & Prevention (CDC) to control Rocky Mountain spotted fever. Graduates of this program will have a better understanding of international agricultural issues, making them much more viable in today's competitive job market. This is a unique program within the North Dakota University System and the US, and the first joint degree in North America.

#0383

Examining Outcomes Related to the Dissimilar Problem-Solving Styles Between Instructor and Student

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VirginiaTech

Chevanese L. Samms
St. Thomas University

Kirton's theory of Adaption-Innovation (A-I) provides insight to understanding how individuals solve problems by distinguishing between problem-solving style (PSS) from capability. In A-I theory, people have a preference to be more adaptive or more innovative when solving problems, as measured on a 128-point scale. Research in organizational management literature has indicated that two people having more than a 20-point gap on this scale were dissimilar in their PSS and have difficulty in communicating, working, and trusting each other. The objectives of this study were to 1) Determine the ranges of PSS gap between college instructors and students, and 2) Identify relationships between this PSS gap and students' motivation, stress, engagement, coping behaviors, and learning strategies. Fifteen classes in colleges of agriculture at two land grant universities were selected based on use of problem-solving based assignments in the course, and the adaptiveness or innovativeness of the instructor. Findings indicated instructors who were highly adaptive or highly innovative may have an average 40-point gap with students in class. In nine of the 15 classes, a greater PSS gap was found to negatively correlate with the identified variables associated with learning, while six classes provided evidence that a greater PSS gap was positively correlated with these same variables. A-I theory offers an explanation to why these were not contradictory findings. Instead, there was evidence that the six instructors in these two colleges of agriculture were able to motivate their students beyond the PSS gap, while nine instructors did not.

#0387

Does Dyad Match Make A Difference in a University Mentoring Program?

Bradley C. Greiman and Carly Tremain
University of Minnesota

The University of Minnesota's Mentor Connection Program utilizes alumni and business professionals to provide students with networking opportunities during a year-long program. Match decisions for each dyad are managed by professional staff in each of the colleges where the student's major resides. In an effort to learn more about the dyad match process, the purpose of the study was to determine success of the dyad relationship, satisfaction of the mentor program, and compare different college models used to match students with mentors. Data were analyzed from year-end surveys returned by 998 students who were part of five cohorts from 2007-2011. The study found that students were receiving a large extent of psychosocial mentoring, somewhat agreed to being satisfied with their dyad, and agreed to being satisfied with the mentor program. Analysis of variance (ANOVA) results did not find a significant difference for college model used to match dyads (i.e., personal essay online profile, combination) on psychosocial mentoring, dyad satisfaction, and mentor program satisfaction. Results indicated that regardless of which match model was used, students were generally satisfied with their participation in the mentor program and their dyad. While results should only be generalized to participants in the Mentor Connection Program, advisors might consider the merits of a mentor program when encouraging students to consider career enrichment activities outside of the classroom. Further research involving mentors of the program is suggested.

Poster Presentations

#0218

Determining Educational Needs of Greenhouse Growers Using Borich Need Assessment and Quadrant Analysis in Kermanshah Province

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Razi University, Iran

Recently agricultural graduates in Iran have shown a great interest in greenhouse production. These young entrepreneurs strive for up-to-date technical information in their professional career. A major problem is they receive training with limited attention to their professional needs. Therefore, the purpose of this descriptive survey study was to determine training needs of greenhouse owners as perceived by college graduates and experts in Agricultural Ministry. Borich Need Assessment Model and Quadrant Analysis were used to elicit training needs of greenhouse owners. The population consisted of all greenhouse owners (N = 54) and experts (N = 27). A questionnaire was designed based on Borich Need Assessment and Quadrant Analysis. Results revealed that greenhouse owners would benefit most if the content of their training focused on 1) method of applying CO₂, 2) ways to control plant disease, 3) providing oxygen in the greenhouse, 4) correct timing for planting, 5) methods of controlling moisture in the greenhouse, 6) identifying diseases, 7) non-chemical measures to control plant diseases and 8) nutrient deficiencies. Quadrant analysis indicated that both greenhouse owners and experts were in agreement in terms of training needs of greenhouse owners. The result of this study has implications for Ministry of Agriculture; Borich Need Assessment and Quadrant Analysis provide an effective methodology when designing training programs for young agricultural entrepreneurs.

#0219

Analysis of Stages and Styles of Learning: Do They Differ Among the Students of Agriculture and Natural Resources According to Experiential Learning Cycle (Case Study: Razi University Kermanshah-Iran)

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The main purpose of this study was analysis of Agricultural and Natural Resources student Learning Style and Stages (LSS) based on Experiential Learning Cycle Theory (ELCT). It was a quantitative, descriptive/ correlation study research. Population was students of Agricultural and Natural resources of Razi University, Kermanshah, Iran. Samples were selected by using proportional multiple stages sampling (n= 324). For data gathering, questionnaire contains demographic characteristics and Kolb's learning styles was employed. In the first step, learning stage and style of respondents were determined and analyzed by SPSS17.0. Frequency, mean and Chi-Square, F, Kruskal Wallis and Cramer tests were conducted for data analyzing. According to the results, there were no differences among students related to Kolb's theory, regarding to stages and styles learning, but there was different in superior learning, active experimentation, abstract conceptualization and superior learning styles. There was not any significant relationship between demographic characteristic and these stages and styles. According to the results, we indicated some suggested for teaching adapted by learning style, and so, desire style with nature of discipline, and finally, fitting styles with subphylum of disciplines.

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#0220

Unique Combination: Nuts and Unicorns Applying STEM Through Agricultural Education

Caryn M. Filson and M. Susie Whittington
The Ohio State University

Science, technology, engineering, and mathematics (STEM) are a key part of the education agenda in the United States. The importance of STEM across the education curriculum will continue to increase. Agricultural education is the perfect venue for celebrating, sustaining, and applying real-life STEM concepts to primary, secondary, and outreach learners. Preservice nonformal/outreach agricultural educators seized the opportunity to make the STEM connection to affluent, first grade girls at a private institution by developing the OSU-CSG Food and Fiber Day. The partnership not only provided an applied laboratory experience for preparing preservice nonformal/outreach agricultural educators, but created the chance for the first grade girls to meet state science standards and gain an appreciation for where their food and fiber originate. The relationship was established in two parts: first the preservice nonformal/outreach agricultural educators went to the elementary school to teach the girls about animal agriculture and animal products through butter-making. Secondly, a few weeks later the girls traveled to the university farm and engaged in a day-long, hands-on agricultural learning experience taught in the context of the national science standards. The partnership has been a positive experience for all involved. The preservice nonformal/outreach agricultural educators have had the opportunity to apply their knowledge of teaching methodologies in an authentic learning experience; preparing lessons to meet content standards, as well as obtaining hands-on teaching experience. The first grade girls, most who have no agricultural awareness, learn not only about where their food and fiber originate, but also meet mandated science standards.

#0222

Factors Influencing Agricultural Students Attitude Towards Internship Programs

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The purpose of this descriptive study was to determine agricultural students' attitude towards internship program. The population of this study included internship students (N = 285) enrolled during 2010-2011 Using stratified random sampling 110 students participated in the study. . Content validity was tested using 10 panel of experts in Department of Agricultural Extension and Education. Reliability of research instrument was tested using Cronbach alpha. An alpha coefficient of 0.85 proved as reliable questionnaire. Results indicated that students had negative attitude towards internship program. Students were dissatisfied with lack of attention from employer personnel and their management. Multivariate regression analysis revealed that passive attitude among employer towards internship, challenges in placement, not utilizing students' experience in day to day job, limited hands-on experience, lack of fit between students' major and employer objectives, lack of satisfaction towards internship program, showing up in employer site, and using employer resources explained 89% of variance in students' attitude towards internship program. The result of this study has implications for agricultural higher education. More attention should be paid to student attitude towards internship program and that more hands-on experience should be practiced during internship program.

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#0224

Teaching Locally, Engaging Globally: Enhancing the Undergraduate Curriculum

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Travel courses, study abroad opportunities, and courses with a global focus are often used to provide undergraduates with a closer look into the expanding global nature of their disciplines. However, these opportunities are often limited to a small number of students. To provide students in agricultural and life science programs increased access to more globally-relevant content, the multi-institutional Teaching Locally, Engaging Globally (TLEG) project was developed. Funded under a USDA Higher Education Challenge Grant, this three-phase project provided faculty (a) with an international experience, (b) skills and tools necessary create reusable learning objects (RLOs) and authentic case studies addressing multidisciplinary issues from a global viewpoint, and (c) support implementing and evaluating the RLOs within at least one undergraduate classroom. As of February 2012, Phase One (travel) was completed in each of the three institutions and Phase Two (RLO creation) is nearing completion. Participating faculty at Texas A&M University and the University of Georgia are working to complete their RLOs for implementation in late spring or early summer 2012. Completed RLOs are being placed into an online repository for use by any faculty wishing to integrate this content into their curriculum. Furthermore, Phase 3 (RLO implementation) has begun at the University of Florida. To date, analysis has been performed on the qualitative pre-reflective and reflective data from each institution. Furthermore, initial evaluations of undergraduate responses to the information in the implemented RLOs suggest increases in both knowledge and attitude for undergraduate students

#0226

International Comparative Rural Policy Studies

Judith I. Stallmann, Maria Augusta, Figueroa
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University of Missouri-Columbia

The International Comparative Rural Policy Studies (ICRPS) summer institute provides a co-learning environment with a combination of classroom, real-world experiences and interactions for faculty and graduate students to: 1) Compare the varying context of rural policy among countries; 2) Interact with peers from a variety of disciplinary, cultural and national backgrounds; 3) Learn comparative research methods. Twelve universities from seven countries participate. A Higher Education Challenge Grant funded the participation of US universities, 2009-2011.

Survey - A survey of participants—faculty and alumni – in the eight annual institutes gathered outcomes of ICRPS and its impacts on the careers of attendees. Response rate is 60 percent and usable response rate, 49 percent. Survey responses-86 percent of alumni respondents report a variety of benefits that correspond to the institutes' objectives: learning to think comparatively, forming an international network of rural policy scholars, applying skills they learned in their jobs ;51 percent have done comparative research;76 percent have recommended ICRPS to others; Several participants are now faculty of ICRPS; Faculty report collaborating on comparative research projects and staying current with policy changes in other countries.

Summary - ICRPS is a nascent, evolving institution. Approximately one third of alumni respondents are still graduate students. Of those who have graduated, 40 percent work in academic or research settings, 10 percent for a non-profit, and 7 percent for a government. Their research spans rural, social, agricultural, environmental, governance and sustainability policy across countries and regions on four continents.

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#0229

Rebuilding Higher Education in Agriculture in South Sudan

Jim McKenna and Pavli Mykerezi
Virginia Tech

Virginia Tech is working in South Sudan to set up university-level programs to train the next generation of agriculturists in the post conflict region. Because of a civil war that lasted nearly half a century, the country's system of agricultural education was almost completely destroyed. Aid experts see the production of high quality Agricultural graduates to meet the unique socioeconomic development challenges of South Sudan as a key component to the country's prosperity. Virginia Tech's Agriculture Technology Program is heavily involved in this effort. The need for a diploma program has been identified as an important step. The two universities involved in this effort include the University of Juba and the private Catholic University of South Sudan. The design of curricula, improvement in the quality of teaching and learning, securing resources required for quality hands-on programs, establishing experimental farms and other facilities, providing short-term training programs to develop faculty and staff teaching skills are some of the activities planned to implement in this project. The mission of the diploma program in South Sudan is formulated to provide a hands-on technical education in agriculture and related areas. The combination of general education and technical skills helps students develop both personally and professionally and prepares them to be productive leaders in society with the ability to adapt to an ever-changing agricultural sector. Options for a three year curricula in animal science, crop production, and agribusiness are in the process of development. This USAID project is in progress.

#0231

Making Climate Change a Functioning Thread in the Baccalaureate Curriculum: Initiating a Transformation in Fiber, Textiles and Clothing Education

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Kansas State University

Cosette M. Armstrong
Oklahoma State University

USDA Higher Education Challenge (HEC) planning grant was awarded to develop a large-scale, multi-institutional project to accelerate integration of climate change concepts and other environmental issues into fiber, textile, and clothing (FTC) programs. This presentation will share lessons learned from research and collaborative activities conducted over the past 12 months contributing to the development of a large-scale project proposal. These activities included: 1) 20 interviews with FTC educators from across the United States, identifying mechanisms and barriers to changing curriculum for environmental sustainability, 2) a survey of 240 FTC educators measuring knowledge and teaching competencies related to climate change and other environmental issues and gauging interest in potential professional development support for such, and 3) a roundtable conducted among STEM and FTC educators from four institutions of higher education to identify mutually beneficial educational initiatives related to climate change and other environmental issues. Chief among the findings was the inaccessibility of hard science to both students and faculty, a common barrier to the integration of climate change competencies in an increasingly social science based discipline, like FTC. Topics like climate change and sustainability often conflict with the purpose and intent of FTC industries: a preoccupation with fashion change, continuous consumption, and limitless growth; making instruction on the topic challenging. Responsively, a three-institution partnership was formed during the roundtable to develop strategies and to plan a project that, if funded, will enhance climate change and sustainability science competencies of FTC educators and postsecondary students.

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#0233

Incorporating Constructivist and Behaviorist Instructional Methods and Learner-Centered Teaching Theory into Horse Riding Instruction Programs and Courses

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Purdue University

Many horse riding programs are taught based on how the instructor learned as a rider. Often overlooked are students' learning preferences as to how they develop understanding of drills and concepts. Accounting for student learning preferences is vital for continued success between rider and horse. The present mixed-methods study explored horsemanship camp participants' learning preferences and feedback regarding training that is based on Learner-Centered theory. The study compared participants' satisfaction and views of being taught using constructivist and behaviorist instructional approaches. Participants included 17 riders from a 3-day Dutch horsemanship program utilizing constructivist instructional approaches. Eight of the 17 participants participated in a similar program the prior year which utilized behaviorist instructional approaches. A questionnaire including open-ended questions, 5-point usefulness scales, and 5-point satisfaction scales was developed to measure participant's response to Learner-Centered instructional methods and satisfaction of program experiences. Learner preferences were measured on a two-sided Likert-type scale (Cronbach's Alpha=.813). Participants found Learner-Centered instructional methods utilized to be very useful as they enhanced participants' understanding and retention of drills and drill purpose. First year participants were very satisfied (n=16, mean=4.63, SD=.50) with the constructivist instructional approach. Second year participants found the program to be more engaging and had greater satisfaction (n=8, mean=4.44, SD=.52) when compared to the year prior (n=8, mean=3.50, SD=.93). Half of the participants preferred learning in a constructivist setting, while half preferred a behaviorist setting. Findings suggest that students have different learning preferences and as such, riding instructors should utilize Learner-Centered and theory-based instructional methods to enhance student learning outcomes.

#0236

Use of a Freshman Service Learning Project and Learner Centered Instruction to Introduce K-6 Students to Agriculture

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The fall 2011 Agriculture Freshman Year Experience class at the University of Hawaii at Hilo engaged in a service learning pilot to introduce agriculture to K-6 students by teaching them how to plant and grow lettuce in a 3 gallon static hydroponic bucket. The UHH freshman taught 70 - 6th graders. Each 6th grader wrote their name on their bucket and harvested 3 heads of lettuce just before the Christmas break, 6 weeks after planting. Teachers reported that the students were very proud of the lettuce that they had grown and were able to share with their family. The UHH students also worked with the 6th graders to teach 80 Kindergarten students. Since then the 6th graders have taught the 5th and 3rd graders. The 5th graders have taught the 4th graders and the 3rd graders have taught the 2nd graders who will teach the 1st graders. The plan is for all the students to harvest their own bucket every 6 weeks. At graduation the 6th graders will take their buckets home, with media, fertilizer and seed and available to them at no charge by contacting the Hilo Union School office. The new Kindergarteners will be taught by the new 6th graders. This program engages each K-6 student in active, learner-centered education, by producing their own food. It has the potential to foster life leadership skills among undergraduate students and K-6 students. It has also the potential to improve family nutrition. The same program was established at Keaau Elementary School. and so, desire style with nature of discipline, and finally, fitting styles with subphylum of disciplines.

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#0240

Drumbeats: Place-Based Science Education Certificate Programs for Rural Alaska

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Suzanne Nolan and Greg Finstad
University of Alaska-Fairbanks

The Drumbeats Consortium is a collaborative effort of five rural campuses from the University of Alaska Fairbanks (UAF) College of Rural and Community Development (CRCDC) and is part of the USDA Alaska Native/Native Hawaiian Serving Institutions (AN/NH) grant program. With the assistance of USDA grant funding, the consortium has developed four place-based science certificate programs which are offered through UAF and have been instrumental in improving the availability of math and science education throughout rural Alaska. These programs combine western empirically-derived science principles and concepts with the indigenous knowledge base and practices of the Alaska Native population. A major goal of the Drumbeats Consortium at UAF is to retain local talent and natural leaders in their respective communities in rural Alaska, slowing the exodus of residents seeking greater educational and employment opportunities. An expected progression is that students who complete these programs will seek further education or gain employment in associated vocational fields. Such efforts lead to opportunities for local employment which will lead, in turn, to improved infrastructure and quality of life in rural Alaska.

#0244

Engaging Undergraduates and High School Students as Citizen Scientists: A Longitudinal Study of Forestry Data Collection Accuracy

Milton G. Newberry, III, Nicholas E. Fuhrm, A.
Chris Morgan and Sarah DeLoach
University of Georgia

John A Peterson
Virginia Polytechnic Institute and State
University

The Ambassadors for Conservation Education (ACE) Program involves undergraduates teaching high school students from Atlanta, GA and Washington, DC about forestry data collection. Through the semester-long experience, undergraduates become “ambassadors” for the high schoolers while strengthening interest in natural resource and agricultural college majors and careers. In a collaborative effort, undergraduates and high schoolers visited two parks to collect forestry data (tree species identification and diameter) needed by federal and state land managers. Their data was then compared to established answer keys. For diameter-at-breast-height (DBH), student data was accurate if it fell between ± 0.75 centimeters of the correct answer. Tree species data was coded as correct, nearly correct (identifying the tree family), or wrong. DBH data collected by undergraduates and high schoolers was found to be 85% during year one and 70% accurate during year two. In previous years when high schoolers collaborated with their teachers only, DBH accuracy was low (55%). Tree identification data accuracy ranged from 81-96% for the past two years when undergraduates instructed high schoolers. College instructors should consider utilizing trained undergraduate students and high school students in collecting field data.

#0245

Lessons Learned and Improvements to an Experiential Learning Activity for an Online Plant Nutrition Course

Kimberly A. Moore
University of Florida

Nutritional Monitoring and Management is an online course offered in the spring semester to students enrolled at the University of Florida. In 2011, 6 nutritional monitoring test kits that included a Flip camera, pH and electrical conductivity meter, and a light meter were distributed to 6 locations in the state of FL. Because students enrolled in this course are at locations far removed from the instructor and main campus and often have limited time during the day or evening to take advantage of a set

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laboratory, the kits were designed to be checked out from locations around the state in order to give students the opportunity to apply techniques discussed in lectures to real world situations. A one hour presentation was developed to orient students to the equipment in the kit and steps to follow in the field. Of the 23 students enrolled in 2011, 13% rated their experience as excellent while 63% rated their experience as above average, 13% as average, and 11% as below average. None of the students rated their experience as unacceptable. Specific problems encountered were 1) difficulty with videos, 2) problems with the meters in the field, and 3) problems with note taking in the field. In 2012, 5 additional short downloadable videos were recorded about the equipment and field techniques that were available on YouTube. A PDF form was also developed that students could print or use on a mobile device in the field to assist with note taking.

#0246

Socioscientific Issues-Based Instruction: Sustaining Agriculture Through Consumer Education

Catherine W. Shoulders
University of Florida

Consumer decisions have had an increasing impact on agricultural practices in recent years. However, many consumers, including college students, make decisions regarding agricultural products and practices based on information passed through media. Uneducated consumer decisions can negatively impact the agricultural industry; therefore, efforts should be made to educate consumers on the issues surrounding agricultural products. The purpose of this presentation is to introduce educators in colleges of agriculture to socioscientific issues (SSI)-based instruction, a teaching method designed to teach students about the multiple facets of controversial agricultural issues while guiding them through the decision-making process. SSI-based instruction has been utilized in college-level and secondary science courses, as well as in secondary agricultural education courses on an experimental basis. During this form of instruction, instructors present students

with a particular SSI, such as genetically modified foods or water quality, and guides student inquiry through multiple aspects of the issue, such as economic and environmental impacts, as well as potential impacts on human health or animal welfare. In multiple studies, students experiencing SSI-based instruction have displayed increased ability in content knowledge, argumentation, and reasoning, as well as increased interest in course content. SSI-based instruction requires teachers to realign their units and lessons to reflect the multiple aspects of the chosen SSI, as well as alter classroom culture to encourage student discussion and questioning. Many courses in colleges of agriculture can utilize SSI-based instruction to teach content while developing consumers prepared to make educated decisions regarding agricultural products and practices.

#0251

Using Contentious Issues in Agriculture to Strengthen the Critical Thinking Skills of College of Agriculture Undergraduates

Christopher M. Estep, Ricky W. Telg and
Becky Raulerson
University of Florida

In their book *Transforming Agricultural Education for a Changing World*, the National Research Council suggested that colleges of agriculture change the way undergraduates are educated in order to increase students' proficiency in the use of 21st century skills, such as teamwork, leadership, problem solving, and critical thinking. Two recommendations put forward by the NRC included, creating classroom learning opportunities for undergraduates to develop the aforementioned skills and collaboration between colleges of agriculture and industry to help students make the connection between the classroom and real life. To bridge these recommendations, a course was constructed at the University of Florida to help students increase their critical thinking skills through the context of contentious issues in agriculture. This course utilizes guest lecturers from academe, governmental agencies, and private industry to discuss agricultural issues, such as food security, sustainability, renewable energy, and water quality. Reflection journals

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are used to help aid students in increasing their critical thinking skills. These journals require students to examine the evidence presented by each speaker, and then determine the relevancy of the issue, the credibility of the speaker, and their own stance. This helps students learn how to analyze the reliability of the evidence offered by each speaker, and to think critically about presenting evidence in support of their own viewpoints. While in its infancy, this course appears to be effective at helping students improve their critical thinking skills while providing a connection between the agricultural industry and classroom learning. Hopefully, this helps provide a step toward transforming agricultural education.

#0252

Is Student Learning Motivated by Money?

Joe Parcell, Jill Moreland and Anna Henry
University of Missouri

Haluk Gedikoglu
Lincoln University

Teachers use many techniques to motivate student learning based on subject matter. Students routinely pay university tuition and fees in exchange for the opportunity to listen, learn, and participate. University of Missouri and Lincoln University, Missouri, faculty are motivating student learning by allowing students to invest personally into a commodity brokerage account and be financially rewarded for the collective actions of students in a commodity futures/options trading course. The goals of the Commodity Futures/Options course are to provide students with an understanding of futures and options markets and to simulate real-life trading experiences. Students are more motivated to understand these concepts when they perceive that knowing more will result in a greater financial reward. Regardless of whether students make or lose money, the chance to gain money motivates students to understand course content. The course is offered online, and students are required to understand futures and options markets terminology, operations, and management. We have inverted the technology set available to instructors so that

students can serve as facilitators. Students record learning sessions, lead blogs, and facilitate changes to trade recommendations. Technology has bridged the gap between students and learning, and it has allowed instructors to better engage today's students who desire something more than the traditional classroom setting of three, 50-minute course sessions per week.

#0254

Estudiante de Dietetica; Update and Evaluation of Mentoring Component

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and B. Burns-Whitmore
California State University - Pomona

This poster will provide an update on the three cohorts of the USDA-funded Estudiante de Dietética (ED) study, and the evaluation of the accompanying optional mentoring program. The ED curriculum was designed to improve cultural competence, confidence and Spanish skills of undergraduate dietetic students in order to provide culturally sensitive nutrition services to the Hispanic community. The long-term goal is to decrease health disparities and diversify the dietetics field, which currently does not reflect the ethnic diversity of the United States.

At baseline, the three cohorts (n= 74) did not differ significantly for gender, ethnicity, gpa or need for Spanish. The mentoring program was adapted from Gardner's 2005 Minority Retention Project and Tinto's Theory of Student Retention. The mentees received educational and social events, retention coordinator assistance, university resources and support, and field experience from their mentors. Mentees in cohort 1 were matched with controls not in the ED program to assess whether involvement in the mentoring program affected their perceived departmental support.

Preliminary results indicate there were no significant differences in perceived support between ED mentees and other non-ED dietetic students. One hundred percent of the students in the mentoring program agreed that their professional skills were increased by their participation, and 95% felt it was a good use of their time. Mentee journals indicated an

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appreciation for mentor, retention coordinator, and appreciation for the field experience. The pilot-mentoring component will continue to be evaluated. An additional 19 students will complete the ED curriculum in June 2012.

teaching and learning by providing the framework for pre-service and in-service education programs that are successful and achieve the intended outcome of improving youth agriscience comprehension.

#0255

A Model for Improving the Delivery of Youth Development Programs by Agricultural and Natural Resource Educators

Peter Skelton, Thomas Dormody, Myoko Pattelena and Patricia Dappen
New Mexico State University

Improving pre-service k-12 teaching opportunities for university students in agricultural education programs requires knowledge of teaching approaches and a process for achieving intended outcomes from the programs. This study evaluated a theoretical model for delivering youth development programs designed to enhance achievement in the sciences. The model derives its foundation from experiential education and inquiry-based learning theory. The process involves the delivery of content, the development of new skills, and the learning opportunity for students to explain or demonstrate what they did, how they did it and what they can conclude about the investigation. The research tested whether programs delivered through this model led to improved outcomes in agriscience for a predominantly Hispanic and economically disadvantaged population. Programs on the effects of soil pH on plant growth and water quality monitoring were delivered to 298 middle school students. Pre and post test program evaluations using a test/retest design measured change to science knowledge, skill development, reasoning abilities and science comprehension as a result of the program treatment. The results revealed that student's successfully transformed information into knowledge, developed new science process skills, and developed enhanced reasoning abilities. Through this process a broader contextual understanding was formed, leading to improved comprehension of subject matter. In conclusion, the results of this study make important contributions to the practice of

#0257

Supporting Innovative Teaching Approaches: The Curriculum Internationalization Grants Program at the University of Georgia

Maria Navarro and Kasee Clifton Laster
The University of Georgia

Internationalization at the University of Georgia (UGA) encompasses transformation of the research, teaching, and outreach roles of the institution. To have a profound and sustainable impact on student learning, curriculum internationalization efforts need to systematically address all components of the university's formal and informal teaching programs. One important ingredient of this process is to strengthen attention to on-campus internationalization so that students see its value at all times and in all facets of the university. Such on-campus efforts also include students who do not travel abroad during their time at the university. The Office of International Education at UGA inaugurated in Fall 2010 the Curriculum Internationalization Grants Program for faculty interested in expanding and enhancing the international content and processes of new and existing on-campus courses. In addition to providing funding, the program also assists faculty with leadership and vision, recognition, collaboration, and learning opportunities. Criteria for funding decisions include compatibility with the goals of the program, the innovative nature of the project, the potential for far-reaching and sustained impact on students and curriculum, and the level of commitment of the home academic unit. The authors will further describe the program, catalog the endeavors supported, and describe in-depth one of projects funded with one of the mini-grants, the development of a series of lessons and case studies on agriculture and the Millennium Development Goals.

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#0258

Breaking Down Barriers: Advising Adult Learners in Higher Education

Caryn M. Filson and Chris Zirkle
The Ohio State University

The image of the 21st century college student has changed from years past. Adults are now the fastest growing population of students in higher education. Adult learners now have more ways to participate in higher education than ever before, and recent changes in the economy and job market have made continuous learning more critical for career retention and success. However, recruiting adult learners into programs of higher education is only half the battle; retention of adult learners can be challenging due to perceived barriers that can impede completion. Situational, dispositional, and institutional barriers need to be minimized in order to make postsecondary education more accessible and obtainable for adult learners. Academic advisors can play an instrumental role in assisting these learners in the quest for obtaining a higher education degree. Advisors can utilize various advising strategies to accommodate the unique needs of adult learners. Advisors should first establish a relationship with the adult advisee to build a bridge between the worlds in which the advisee balances: the world of personal/professional life and the world of academia. Advisors should also practice developmental advising which allows for adult learners to be active participants in their own education. Advisors need to provide support, reassure, and boost the self-confidence of adult learners who may have trepidations about their abilities to be a successful student among their traditional peers. Lastly, adult students may also need more frequent contact from advisors to assist them in acclimating into becoming a member of the learning community

#0260

Assessing Retention in Two Freshman Natural Resource Orientation Courses

Mark E. Burbach, Shannon L. Moncure,
Sue Ellen K. Pegg, Sara L. Cooper and
Sara R Winn
University of Nebraska-Lincoln

Many university programs have implemented freshman orientation courses to improve student retention. This study explored the relationship between student evaluations of instruction in relation to student learning objectives of two recently developed freshman natural resource orientation courses and predictors of college student retention identified by Davidson, Beck, and Milligan (2009) and Cuseo (2007). The four instructional objectives (abbreviated) were Reviewing Issues Related to Natural Resources, Evaluating Courses and College Activities, Exploring Careers in Natural Resources, and Developing Resources in the Department. Fifty-four freshmen students participated in this study. All four evaluations of instruction in relation to course instructional objectives shared a significant positive variance with the three predictors of college student retention identified by Davidson et al. (2009). The instructional objectives Exploring Careers in Natural Resources and Developing Resources in the Department shared a significant positive variance with all seven predictors of college student retention identified by Cuseo (2007). The instructional objectives Evaluating Courses and College Activities and Reviewing Issues Related to Natural Resources shared a significant positive variance with six of the seven predictors of retention identified by Cuseo (2007). The results of this study support a method that instructors of freshman orientation courses can use to assess the effectiveness of their instruction and gauge student intention to remain in the program. Instructors can use this information to direct attention to students at risk of not returning to school.

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#0262

Learning Outcomes Communication and Cultural Sensitivity Skill Development Framed as Career Preparation and Leadership for Upper-Class Agriculture Students

Mark Russell and M. Tucker
Purdue University

We will share assessment methods and activities used in a “Leadership for a Diverse Workplace” jointly-led course between Animal Sciences (ANSC) and Youth Development & Agricultural Education. Since 2008, over 200 junior and senior undergraduates have taken this employer-led discussion class covering interpersonal and group skills needed to enhance career satisfaction in a diverse workplace. Learning outcomes include that students will: 1. critically analyze their values and assumptions of team dynamics of a diverse workplace and reflect on points of view other than their own; 2. grow confidence that they are a good writer and enjoy writing; 3. develop effective intercultural competence as a writer by adjusting their writing style to fit the needs of different audiences; and 4. practice methods of group problem-solving and ethical decision-making to create more inclusive working environments in leading in contemporary issues. We will share the use of industry scenarios, numerous assessments, and The Leadership Challenge by Kouzes & Posner which forms the basis of the ten written communication assignments. We will compare the learning outcomes of this class with the seven specific soft skill clusters in the 2011 “Comparative Analysis of Soft Skills: What is important in new graduates” report co-sponsored by the Association of Public and Land-grant Universities (APLU) and the University Industry Consortium (UIC). It is critical to the success of college of agricultural graduates that they develop these leadership skills to effectively apply the discipline knowledge and skills to issue of sustainable agriculture and food supply of the future.

#0265

Enhancing Students’ Small Business Knowledge and Entrepreneurial Skills from a Global Perspective: Collaborative Curriculum Design and Assessment

Nancy Hodges, Kittichai Watchravesringkan,
and Jennifer Yurchisin
The University of North Carolina at Greensboro

Elena Karpova and Sara Marcketti
Iowa State University

Jane Hegland
South Dakota State University

Ruoh-nan Yan
Colorado State University

This presentation reports on a three-year USDA Higher Education Challenge project currently in progress that is designed to increase undergraduate students’ knowledge of how small business is critical to the US fiber, fabric, and related products industry’s global competitiveness. The project is being conducted through existing international collaborative partnerships between industry and faculty at the four US partner institutions and faculty and industry in Russia, Thailand, South Africa, and India. Products of the project include educational modules that will enhance students’ knowledge of the importance of small business within the global industry and develop requisite entrepreneurial competencies. An assessment tool that will be used to measure the knowledge and competencies facilitated by the modules is also under development. We are currently in Phase II of this three-phased project. Phase I involved data collection and analysis of interviews conducted with industry professionals within the US, Russia, Thailand, South Africa and India. Interview responses regarding the role of the small business in the global industry, as well as the types of skills needed by graduates to succeed, were used to shape the design of the modules via course materials and projects as part of Phase II. Outcomes of Phase I and Phase II will be reported on in the presentation, as will the process by which the modules have been designed and the results of the initial testing of the assessment tool. Phase III will conclude the project with implementation

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and assessment of the modules relative to the project goals.

#0266

Formative Evaluation with the Classroom Survey of Student Engagement

Eric K. Kaufman
Virginia Tech

As instructors seek to improve teaching, it is a challenge to assess progress and identify the areas in most need of improvement. At many institutions, the standard student surveys fall short. However, the Classroom Survey of Student Engagement (CLASSE) is helpful supplement for such formative teaching evaluations. The CLASSE is a classroom-level adaptation of the National Survey of Student Engagement (NSSE), an effort to collect and benchmark student participation in activities that research has linked to student learning. The CLASSE consists of both a faculty and student version, both of which include 41 pre-defined questions. The Faculty CLASSE invites instructors to evaluate the importance of various activities and practices that occur as part of their classes. The Student CLASSE asks students to reflect on their behavior related to the same activities and practices. Based on the findings, instructors are able to prioritize areas for improvement. The Student CLASSE begins with a question of "So far this semester, how often have you done each of the following in your [Course XYZ] class?" Then, it lists 19 different items ranging from "Asked questions during your [Course XYZ] class" to "Worked harder than you thought you could to meet your [Course XYZ] instructor's standards and expectations." Other items focus on cognitive skills and class atmosphere. The CLASSE is a promising resource for anyone seeking to improve student engagement and document the results of their efforts.

#0270

Using Problem Based Learning to Teach Agricultural Law

Beau Pemberton, Joey Mehlhorn and Scott Parrott
University of Tennessee at Martin

The use of problem based learning to teach critical thinking skills is growing in popularity in undergraduate education. In the past, the use of tools such as case studies and independent investigation to teach complex concepts was primarily used in graduate programs in business, law and medicine. The use of problem based learning strategies has been shown to improve student critical thinking skills, motivation to learn and comprehension of complex problems. The use of case studies and group work allows students to become more conscious of what information is available for a problem and what information they need to know to formulate a strategy to reach a solution. Three case scenarios were used in an undergraduate agriculture law course during the fall semester 2011. The scenarios included three different producer profiles at various stages of life and economic circumstances. The producer profiles were used throughout the semester. Scenarios included estate-planning, contracts, and secured transactions. The students were responsible for developing a recommendation for each profile given the scenario. Students were pre and post tested on each set of material to determine if student performance was improved. Test performance was improved for all scenarios. Estate planning yielded the greatest increase in grade performance (14.5%), followed by secured transactions (5.2%), and contracts (4.8%). The use of producer profiles allowed students to understand that solutions are unique to individual circumstances. Case studies also allow for a realistic view of how complex decisions impact producers and they enhanced classroom discussion among students.

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#0271

The Perceptions of the Quality of Education Received from PhD Student Instructors From the Eyes of Four Agricultural Education Undergraduate Students

Nathan W. Conner and Eric D. Rubenstein
University of Florida

Graduate teaching assistants (GTAs) are commonly used within universities to help effectively educate undergraduate students. However, GTAs are often expected to be experts in their field even though they may not possess adequate knowledge and teaching experience. The national research agenda calls for research that examines the learning process within various agricultural education environments. This study described undergraduate students' perceptions of education received from PhD student instructors referred to as GTAs. This study was developed based on a constructivist epistemology since individuals created their own knowledge based on personal experience. The participants consisted of 4 agricultural education undergraduates, which consisted of 3 females and 1 male. The data were collected through individual interviews and were analyzed using domain analysis. The following three domains were delineated from the transcripts: (1) The relationship between PhD student and undergraduate, (2) Qualities of a PhD student instructor, and the (3) Qualities of a Professor. Based on the collected data, the participants felt that they benefit from having GTAs as lead instructors. However, they do feel that prior teaching experience is imperative and that GTAs should enroll in a teaching methods course to gain teaching experience. The participants felt that age proximity and the willingness of their GTAs to take time to meet with them attributed to their success in the course. Overall, the participants had a positive perception of the quality of education received and suggested ways to ensure that undergraduates receive a quality education from GTAs.

#0272

Integrating Extension and Research Activities – Implications for College Teaching

Caitlin Foley and Rama Radhakrishna
The Pennsylvania State University

In recent years, U.S. extension and research systems have attempted to work together. However, they remain and maintain separate cultural and organizational identities with varied, but linked missions. Increased emphasis is being placed on the need for common understanding, expectation, and project language among research, extension, and teaching faculty. The primary purpose of this study was to identify facilitating factors and inhibiting barriers to joint Extension-Research endeavors and its implication for classroom teaching. Data for this study were derived from two focus groups conducted with faculty with varied responsibilities in Extension, research, and teaching. Focus group questions targeted integrating the functions of the land-grant system, particularly Extension and research activities. Focus group sessions were moderated by professionals from the Survey Research Center at a major land-grant university. Several themes emerged from the focus group interviews; 1) faculty have different views on integrating extension and research, 2) many barriers exist to integration, and 3) understanding of each one's role. In addition, funding, organizational culture, recognition, lack of time, and lack of administrative support were viewed as barriers to integration. Increased funding and collaboration with other faculty colleagues, better communication with administrators, split appointments, and more inclusive process were identified as facilitating factors. The findings of this study offer several implications for teaching. These include, staying current on the subject matter topics, team teaching courses, closer link to theory and practice—the real world exposure, and increased opportunities for undergraduate students to carry out research and extension activities.

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#0274

Experiential Learning and Training: Developing Traditionally Underrepresented Students in Food and Agricultural Sciences Majors Professionally and Personally

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North Carolina Agricultural and Technical State
University

Experiential experiences allow students to gain a sense of community, leadership and communication skills. While these experiences are encouraged for students, not all choose to. The purpose of this study was to examine the reasons students choose to or not to participate in experiential experiences. The study included five underrepresented students who were posed questions during interviews and a questionnaire to gain their perspectives about internships, study abroad and conferences. The students are participants of the USDA-NIFA Multicultural Scholars Program at their university. The program aims to increase the number of traditionally underrepresented groups in graduate education and careers in the food and agricultural sciences. The study found that all scholars found conferences as beneficial. One scholar has completed an internship and stated the experience was invaluable. Another scholar provided insight about attending a Monsanto 1890s Leadership event and stated, "During the event, I was able to develop my interviewing skills." Thus far, only one scholar has participated during a study abroad; however, three will travel summer 2012 and two have reported the idea as stressful. The researchers found that students who participated with experiential experiences have enhanced problem solving and critical thinking skills as well as gaining better 'soft skills.' It is recommended that further studies be conducted to examine which experiential experiences are beneficial for students and what preparation is needed by advisors and students to alleviate the stress associated with experiential experiences such as study abroad which have been found to prepare students as 'global citizens.'

#0275

Revitalization of the South Carolina 4-H Market Steer Program through Educational Workshops

Cameron Burns, Thomas R. Dobbins,
K. Dale Layfield and Steven Meadows
Clemson University

Reviving 4-H programs requires community support, 4-H leader support, and youth participant interest. During 2011, the South Carolina 4-H Market Steer Program underwent a revitalization process. This program is a livestock-based youth project that promotes animal husbandry, animal health knowledge and development of entrepreneurial skills. The objectives for these changes implemented in 2011 were to increase program awareness throughout the state, increase participation, obtain sponsors and buyers, and develop a market steer record book for all participants to complete. For the project, the 4-H and FFA Youth participants picked one steer that would participate in the program, and in 2011 there were 12 youth participants. During the duration of the project, each participant had to maintain a record book for their steer with all feeding records, health records, and a full balance sheet, which helped teach them recommended business practices. During one of the statewide shows held in August, an educational workshop was held to teach participants and parents use of record-keeping tools, the use of new technologies and new educational requirements that were implemented. Participants exhibited the steers throughout the project at local and state level livestock shows. All steers that made the 1,000 pound weight limit were then shown at the SC State Fair in October, 2011, with an auction immediately following the show. Community sponsors and companies were present to purchase the steers. Students and parents reflected that new changes and tools learned in the workshop attributed to their success in the program.

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#0280

Development and Implementation of a National Center of Excellence in Dairy Production Medicine Education for Veterinarians

John Fetrow
University of Minnesota

This project will create an intensive eight week curriculum during the academic year 2012 – 2013 in dairy production medicine for two cohorts of 16 veterinary students from four collaborating colleges of veterinary medicine (MN, IL, GA, KSU). The course will develop entry level proficiency in dairy herd production management, health promotion and food systems expertise for senior veterinary students who will graduate and serve commercial dairy farms or as professionals elsewhere in the dairy food system. The faculty at all four colleges and other content experts will participate in their appropriate areas of expertise in the development and implementation of these modules. Planning will emphasize a mixed instructional methodology including lectures, laboratories, hands-on experiences, herd and other dairy infrastructure visits, web instruction, and computer records and economic evaluations. The course will be taught on-site at the National Center of Excellence in Dairy Veterinary Medicine of the University of Minnesota. The design and implementation will include measurement of the impact of the curriculum on student achievement of learning objectives and the impact on professional success in the first year after graduation.



#0281

Effects of a Workshop on Adult Agricultural Leaders' Perception of Communication Skills: A Case Study

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Texas A&M University

Communication skills are increasingly important in the agricultural industry. Therefore, it is necessary to examine successes in understanding agricultural practitioners' communication skills. The Self-Perceived Communication Competence (SPCC) scale measures self-perception of competence in four different contexts of communication (Public, Meeting, Group, and Dyad), three different audience types (Stranger, Acquaintance, and Friend), and total self-perceived communication competence. In the spring of 2012, ten adult agricultural leaders from across [State] attended a communication skills workshop focused on public speaking, non-verbal communication, media relations, and issues management. These participants were given the SPCC at the beginning of the program and again at the conclusion. The researchers hypothesized that self-perceived communication competence would be higher upon completion of the workshop. Means scores on the SPCC collected from participants were compared to mean scores reported by the instrument developers. Scores collected before the workshop indicated that the groups' perceived competencies in every context except for dyad, all audience types, and the total communication competency were lower than the developer-reported means. Further, scores collected after the workshop indicated that the groups' perceived competence in all contexts, all audience types, and total communication competence were higher than developer-reported means. Statistically significant differences existed between pre- and post- test scores in each context, each audience type, and total self-perceived communication competence. Researchers concluded that self-perceived communication competencies were higher upon completion of the workshop. Therefore, singular event workshops can help to improve perceived communication skills and further the understanding of agricultural practitioners' communication skills.

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#0282

Awareness, Use and Perceptions of Biodiesel: A Comparison of Agriculture and Non-Agriculture Majors

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University of Arkansas

Michael L. Pate
Utah State University

Agriculture has traditionally focused on production of food and fiber; however, recent policies have charged the agricultural industry with a significant role in meeting renewable fuel mandates. This study compared agriculture (n=288) and non-agriculture (n=283) majors at three universities on their awareness, use, and perceptions of biodiesel. Agriculture majors were significantly ($P<0.0001$) more likely than non-agriculture majors to report owning a diesel vehicle (28.8% vs. 12.5%) and having heard of biodiesel (84.3% vs. 64.4%). Although only 5.7% of agriculture majors had ever purchased biodiesel, this percentage was significantly ($P<0.05$) higher than for non-agriculture majors (2.2%). Students who had heard of biodiesel responded to 34 Likert-type items (1 = strongly disagree; 5 = strongly agree) assessing their perceptions of biodiesel. Both agriculture and non-agriculture majors agreed the U.S. is too dependent on foreign petroleum (means of 4.27 and 4.26, respectively) and both tended to agree that biodiesel could significantly reduce this dependence (means of 3.72 and 3.69, respectively). Agriculture and non-agriculture majors were unsure if diesel vehicles ran better with biodiesel (means of 2.98 and 3.11, respectively) or if the quality of commercial biodiesel was low (means of 2.97 and 2.93, respectively). Non-agriculture majors were significantly ($P<0.05$) more likely to agree that biodiesel produced fewer harmful emissions than petroleum diesel (means of 3.62 and 3.37, respectively) and that use of biodiesel contributed to a cleaner environment (means of 3.11 and 2.84, respectively). These results indicate a need to educate all majors about the performance, sustainability, and environmental impacts of biodiesel.

#0283

Animal Science Unit Addresses College Students' Multiple Intelligences

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University of Illinois at Urbana-Champaign

It is important for college instructors to teach courses using methods and pedagogy that address multiple intelligences (MI) of their students. College students possess a variety of multiple intelligences at varying levels and gain genuine knowledge more effectively if the courses are correlated to their MI. Although research has shown that individuals learn easier, gain better knowledge, and retain more information from diverse teaching methods, there is still a disconnect between that conclusion and what actually occurs in classrooms. A content unit within a University of Illinois upper level undergraduate course addressed all the multiple intelligences except musical. Visual/spatial, verbal/linguistic, logical/mathematical, bodily/kinesthetic, interpersonal, and intrapersonal intelligences are addressed within the unit on utilizing various activities. Lectures, discussions, journal writing, and word puzzles are used to cover the verbal/linguistic intelligence. Critical thinking, problem solving, online modules, and science experiments address the logical/mathematical intelligence. Visual/spatial intelligence is attended to by graphs, drawings, presentations, and videos. Student drawings representing complex concepts, class presentations, and farm visits address the bodily/kinesthetic intelligence. Interpersonal intelligence is addressed by students working in teams, brainstorming, cooperative learning activities, and case studies. Online quizzes, online modules, and reflective journal entries pertain to intrapersonal intelligence. Being aware of the students' various MI and preparing units which correlate to the broad range of MI creates a learning environment that allows students to learn more easily and have longer retention of knowledge that can be applied to the real world. The design of content units to address a range of students' MI can be implemented into many college courses to enhance learning outcomes.

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#0284

Empirically Testing Online Recruitment Materials

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Kansas State University

For agriculture and natural resources to be viable, students need to be recruited into agricultural majors. This study used online survey methodology to assess recruiting materials for floriculture majors. Participants included undergraduate students in the University of Florida's College of Agricultural and Life Sciences in two large-lecture courses featuring a variety of majors. The recruitment materials were developed from findings of two studies that used focus groups to determine the best means to promote floriculture majors to college students. The developed recruitment materials consisted of web pages and 2-minute videos. Participants evaluated the pages for overall interest in the design and which components were of the most initial interest. Participants evaluated the videos for overall interest in the videos and interest in floriculture careers based on watching the videos. A heat-mapping tool was used to track initial interest through the survey software. A dominant image or video was of the most initial interest to participants when included on the pages. Without dominant images or videos, participants gravitated toward different spots on the page. The two web pages participants evaluated most positively included one with a top-of-page banner with multiple images, and the other included an embedded video with people working with flowers as the preview image. The two web pages evaluated least positively included one without images or videos, and one with an embedded video with the preview image of an older male. The videos received generally neutral evaluations. The results of this study indicate images and videos are vital to recruitment web pages.

#0285

Influence of Faculty Earned Degrees on Agribusiness Curriculum Content

L. A. Wolfskill
Sam Houston State University

Gary J. Wingenbach
Texas A&M University

Business degree programs have a history of developing curricula with input from an accrediting body such as AACSB. Additionally, industry needs have long had an influence on business curricula. In those curricula, operations research and management science topics have been an important part of Bachelor of Business Administration and Masters of Business Administration programs of study. This research attempted to capture this relationship to agribusiness curricula by asking whether faculty members who have come through the business school process (having earned business degrees) would place greater importance on the teaching of decision science (DS) topics within agribusiness curricula than those without earned business degrees. A random sample of agribusiness faculty members was surveyed as part of a national project analyzing perceptions of agribusiness curricula. Faculty members with business degrees presumably would have been more exposed to a DS emphasis than those without such degrees. However, the data did not provide strong enough evidence to reject the null hypothesis that there was no difference in the mean importance ratings for faculty with at least one business degree, versus those who had not earned a business degree. This could be due to the strong quantitative emphasis that many agricultural economics degree programs have. Nonparametric tests were conducted to evaluate the effects of confounding variables. Although business degree earning faculty members had a higher mean importance level, the difference was not enough to be statistically significant ($p=.183$); therefore, the research hypothesis was not supported.

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#0288

The Role of Industry Advisory Councils in Forming Agribusiness Curricula

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Undergraduate agribusiness courses of study are a fairly recent addition to US university curricula. Curriculum committees and course designers must choose the courses and topics that will comprise such curricula. Many instructional design models such as the Dick and Carey model have been proffered to provide designers a systematic methodology to guide their choices, and many begin with needs analyses. Industry needs have long had an influence on curricula. Industry advisory councils consist of business representatives who typically volunteer their time and effort to help academic departments and curriculum committees with various types of support including curriculum advice, industry training materials, equipment donations, supplemental funding, student internships, and recognition of program excellence. Russell and Trede's curriculum design model supports the use of an advisory council as an aid. If industry councils are active and effective, they should have an impact on curricular decisions. The literature review revealed that many research studies have documented the desire on the part of employers of agribusiness graduates for quantitative and decision analysis skills in their hires. A random sample of agribusiness faculty members was surveyed as part of a national project analyzing perceptions of agribusiness curricula. The current research posited that respondents from agribusiness departments that have industry advisory councils will place more importance on the teaching of such topics. The research hypothesis, however, was not supported. No significant difference was found between the mean importance ratings of faculty members from departments with advisory councils and those without such councils.

#0294

A Partnership for Recruiting Non-Traditional Underrepresented Students into Agricultural Sustainability Degree Programs

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University of California

UC Davis is working with a community partners to address important issues in agricultural science education: decreasing enrollments; underrepresentation of non-traditional students; and increasing workforce demand for graduates with sustainable agriculture knowledge and skills. We collaborate to recruit non-traditional and underrepresented students into appropriate degree programs with approaches which emphasize key components of our Sustainable Agriculture and Food Systems major: experiential, peer-to-peer, and interdisciplinary learning, systems thinking, and skill development. We engage high school youth through three avenues: the students visit UC Davis to participate in field-based learning activities, interact with UC Davis undergraduates, and explore college life; they visit working farms, ranches and natural areas to gain practical experience and explore diverse careers options; we send UC Davis students to their high schools to mentor and support them in their field-based educational projects and college preparation. A sample of students participated in pre- and post-surveys in the first academic year of this project. Preliminary data from the surveys indicate a relatively high percentage of the students (33%) expressing an interest in pursuing a career in agriculture or environmental sciences. Overall awareness of career opportunities increased substantially with students able to name 83 relevant careers in the pre-survey and 113 in the post-survey. Similarly, the pre-survey indicated 67% did not know the steps needed to pursue a career in agriculture or environmental science, but this dropped to just 30% in the post survey. Recruitment and evaluation work will continue through the 2012-2013 academic year.

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#0296

Building Community Through Near Peer Mentoring in Graduate Student Communities

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Educational communities aid in the retention of students. These environments serve as communities of practice and offer an opportunity for individuals to experience a joint enterprise, a shared repertoire, and mutual engagement of participants. Within these communities of practice there exist individuals who represent various levels of expertise in the community. Specifically, near peers help the apprentice develop a sense of legitimate participation – necessary for development into an expert – in the community by providing access to resources and tools of the community. New and experienced graduate students within one university CALS department were invited to participate in a mentoring program over the course of the first two semesters of enrollment of the new graduate students. After meeting each other, the graduate students chose their mentoring partners. One researcher emailed the participants weekly to send suggestions for activities and discussion points. The researchers did not create a structure for the mentoring relationships. One researcher conducted interviews through Skype to ask participants about their relationship and its impact on their graduate experience. Mentors and mentees work together to define a work/life/school balance, to learn to conduct research and analyze data, and to decide, “where to go and who’s good to know.” They developed a shared repertoire including: doing whatever it takes, performing rituals for completing work, relieving stress, and working with faculty.

#0297

Exploring Faculty Development Needs: A Focus Group

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Jessica L. Gouldthorpe, Christopher M. Estep
and Becky Raulerson
University of Florida

The environment in higher education is constantly changing due to external and internal variables; thus, the responsibilities and role of faculty members is consistently adapting to the various demands for teaching, research, and extension activities. The Teaching Resource Center (TRC) at [university] was established to assist faculty members in their various roles and responsibilities related to teaching and the scholarship of teaching and learning. Various activities are organized throughout the year to meet these needs; however, constraints of time and resources may limit faculty participation in such activities. This focus group study brought together a group of faculty members to explore faculty participation in professional development activities. Insight emerged from the data that faculty desire to connect with instructors from similar content areas with innovative teaching practices. Greater accessibility to informal opportunities to gain information directly applicable to current issues, such as technology integration, assessment, and innovative teaching are also of interest to faculty. Additionally, there was an expressed need for some formal training or resources to be made available to Graduate Teaching Assistants. Awareness and facilitation of resources is needed for faculty members to be accountable for the professional development activities offered. Insights gained through this focus group provide valuable context and direction for future professional development activities organized through the Teaching Resource Center. These findings may also provide insight for those that plan professional development activities at other universities.

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#0300

Farm Management & Operation Course: An Evolutionary Experiment in Experiential Learning Spanning Seven Decades

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Iowa State University

In 1862, the United States embarked on a great experiment, the land grant institution, which developed the practical arts, like agriculture, into a science. Eighty years later, a Midwestern College of Agriculture embraced an experiment allowing agriculture students the opportunity to apply their scientific classroom knowledge in a practical way: managing their own farm, under professorial supervision, for credit. This class evolved into Farm Management and Operation, a senior capstone course for Agricultural Studies majors, providing the context for students to develop decision-making, leadership, and communication skills while managing an 800-acre farm for a semester. Research conducted over the past seventy years has documented that Farm Management and Operation provides a unique context for agricultural education that reinforces the experiential learning model. Andreasen's Model for the Integration of Experiential Learning in Capstone Courses was created from research and observation of this course. Research has demonstrated that this opportunity to make decisions with real-time, real-world consequences impacts not only students' learning, but also develops skills necessary in their first career. In recent years, Colleges of Agriculture and Life Sciences have recognized the value of real-world experience gained during the college career. Farm Management and Operation has been providing this experience for seven decades.

#0301

Development of the iVetSchool Application to Supplement Veterinary Medical Students Food Animal Education Through Problem Based Learning

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Michigan State University

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Mississippi State University

It is becoming increasingly more challenging to adequately train food animal veterinarians in part due to decreasing food animal caseloads at veterinary colleges and the increasing complexity of our nation's food supply. The purpose of this project was to develop iPhone/iPod Touch applications (Apps), podcasts of food animal, clinical-based case studies and technical procedures in a problem-based learning format to be used to supplement veterinary medical students' food animal knowledge and technical skills, and increase the number of veterinary medical students interested in becoming food supply veterinarians. Food animal faculty at three colleges of veterinary medicine that have been recognized for their teaching developed 18 case studies representing common food animal veterinary issues. The same faculty worked with programmers at Mississippi State in the development of the iVetSchool App. The cases were written the first year of the project with the iVetSchool App being developed the second. Critical thinking and reasoning skills, food animal knowledge base and career intent of the control group (sophomore veterinary medical students, class of 2013) were surveyed at three colleges of veterinary medicine using the Health Sciences Reasoning Test (HSRT). The iVetSchool App will be implemented this coming fall (sophomores in the class of 2015). The HSRT will be administered as a post-test at the end of the sophomore year (spring of 2013) to evaluate and compare changes in critical thinking skills, food knowledge base and career intent at the three sites. The iVetSchool App will be demonstrated as part of the poster session.

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#0304

Integrating Permaculture into a Planting Design Studio for Landscape Designers

Elizabeth Mogen
Colorado State University

Permaculture is an internationally recognized sustainable design philosophy that began in Australia over forty years ago. Bill Mollison, the ecologist who coined the phrase from "Permanent Agriculture," is ferociously independent and initially considered his design concepts unsuitable for the confines of an "Institution." Even today permaculturists are unaffiliated and most workshops are conducted on farms or homesteads. Permaculturists pride themselves on being "Pioneer/Weed Species" or willing to go into hostile environments, send down roots that will improve the soil and create more fertile landscapes with thoughts as well as seeds. Although teaching permaculture in a university setting inherently creates a paradoxical environment its basic principles and approach for sustainable landscape organization are extremely valuable for landscape designers. Permaculture is also a vast subject that requires focus to single out the most representative principles to impress upon students within the typical university course time frame. Integrating permaculture into a planting design studio has resulted in a series of efforts in the form of assignments and lecture presentations which began quite tentatively 20 years ago and currently attempts to place the student in a "permaculture world" while using permaculture concepts for their assignment. Students are asked to create a situation (within given parameters) that speaks to their primary interest in sustainable landscape design and focus on that area for their project. The intent of this presentation is to offer the teaching methods found to be most successful.

#0306

Training in Information Technologies to Enhance Agricultural Instruction, Research and Outreach

Samuel Nahashon and Cheryl Seay
Tennessee State University

The need to harmonize research, outreach and instruction delivery is high among the 1890 Land Grant institutions (1890s). The primary goal of this project was to train faculty and students in the 1890s in information technology to enhance delivery of agricultural instruction, research and outreach. Specific objectives were to: (1) assess current knowledge and skill in the application of information technology for agricultural instruction, research and outreach at the 1890s; and (2) train faculty and students in blending information technology into design, delivery and strengthening of agricultural programs using advanced technologies such as Moodle, creative suite 3/5 and Desire 2 Learn. Survey results indicated that 100% of students and 63% of faculty believe the use of technology in the classroom can enhance student learning. While about 70-90% of the students surveyed had the knowledge required to take web-based courses, only 40% of them had taken online courses. Majority (70%) of these students comprising juniors, seniors and graduate, would prefer to take online courses. About 60% of faculty surveyed did not have the skills and knowledge required for developing and using web-based learning environments. More than thirty students and twenty faculty members have undergone training through this project and on the application of information technologies in instruction, research and outreach. While several faculty members are developing online classes as part of their assigned tasks in the ongoing training, two faculty members at Tennessee State University have begun offering online courses in Geographic Information Systems (GIS) and forestry.

#0308

Our Students: A Profile of the 2011 Fall Semester College of Agriculture Freshman

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This study examined various characteristics of freshman students entering the college of agriculture at the main campus of a large land-grant university in the fall semester of 2011. A total of 233 students were surveyed and 196 students completed the survey for a response rate of 84%. Students were asked to complete a demographic profile, as well as complete other questions related to intended major, how they found out about that major, other universities they considered attending, and whether or not they visited the main campus. A demographic profile was developed for these students. The college of agriculture student was from a non-farm background (83%), lived in a suburban (51%) or rural (38%) area, and did not have an agricultural education curriculum in their high school (62%). Of those that students that did have an opportunity to take agriculture courses in high school (34%), twenty-three percent participated in those courses. The student was intending a major in the animal sciences (20%) or veterinarian and biomedical sciences (30%). Additionally, the student visited the main campus (97%), and visited with a university representative (83%), prior to enrolling at the university. The student considered other institutions for their intended major. Seventy-four percent of the respondents considered at least one other university for their intended major, and fifty percent considered at least two other universities. The student found out about their intended major through one of several sources of information; web sites, family member/friend, university representative, or a college publication.

#0309

Factors Associated with Choosing a College of Agricultural Science

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The Pennsylvania State University

Students enter universities, and more specifically colleges of agriculture, each year based on some personal criteria. Criteria, while different for each student, may include cost, program design, or learning opportunities. The

objective for this study was to rank the importance of specific factors that contributed to selecting or not selecting a particular college of agriculture. Incoming freshman for the college of agriculture (N = 608); no matter the campus location, as well as students offered admission to the college of agriculture that declined admission (N = 682) for the fall semester 2011, were sent an electronic survey. A total of 515 surveys were completed for an overall response rate of forty percent. Due to multiple campus locations for this university, 3 groups were compared in this study. Students that accepted admission for all campus locations except the main campus, students that accepted admission for the main campus, and students that declined admission were compared on 9 individual factors. The factors were; cost, career opportunities, availability of scholarships, reputation, offered my major, access to research facilities, agriculture background/experience, variety of clubs and teams available and international program opportunities. Means were calculated, based on a 5-point Likert-type scale (1 being not at all important through 5 being very important), on each item for the three groups. Results indicated that offered my major, cost, and career opportunities were the most important factors. Factors such as cost, availability of major, and career opportunities should be emphasized when recruiting and promoting the college of agriculture

#0310

Sources of Information Utilized in Choosing a College of Agriculture Science

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Various sources of information related to colleges of agriculture are available to potential students. These sources of information aid students in making the decision to enter, or not enter, the college. Information sources could include people, electronic media, and print media. This study examined the sources of information that incoming freshman most readily identified as contributing to finding out about a particular college of agriculture. Incoming

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freshman for the college of agriculture (N = 608), no matter the campus location, for the fall semester 2011, were sent an electronic survey. A total of 365 surveys were completed for a response rate of sixty percent. Students were asked to respond to how they found out about the college of agriculture. While there was some variation between responses for those students that were accepted to the main campus and those students that were accepted to other campus locations, the top five rated options for both groups, were; Web sites, family member/friend, university representative, college of agriculture publication, and teacher. For these top five rated sources of information, the lowest percentage was seventeen percent (teacher), while the highest was 44 percent (web sites). Results indicated that print media distributed by the college aided approximately one-quarter of the students in finding out about the college of agriculture. Thus, individuals that are looking to recruit students for colleges of agriculture should consider the variety, and use, of sources of information that students are utilizing to learn about the opportunities offered through colleges of agriculture.

#0311

On-line Versus In-Class Evaluation of Teaching: Is There a Difference?

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Faculty have been asked to document effectiveness of teaching in a variety of ways— in-class administration using an approved teaching evaluation form, peer evaluations, open-ended comments, and observations of teaching. In recent years, with the advancement of technology, colleges and universities have opted for on-line administration of evaluation of teaching. The purpose of this paper presentation is to determine differences, if any, between face-to-face and on-line administration of evaluation of teaching. Data for this study came from end-of-semester course evaluations from three courses taught by two faculty in a major land-grant university. The following questions guided this study: 1) is there a difference in on-line and in-class administration, 2) is there a difference in

qualitative measures (open ended comments) used to document teaching effectiveness, and 3) what are the advantages and disadvantages of the two methods of collecting evaluation data. Results revealed no in-class administration were slightly lower than on-line scores. Regarding qualitative measures, on-line responses tended to be long and critical, but offered constructive suggestions for improvement. Conversely, in-class administration responses were short and offered very little comments. Response rates were obviously high (90%) in in-class administration, while it was very low (under 45%) in on-line administration. Faculty received immediate feedback (2 weeks) after the final grades were posted, while it took almost 2-3 months in in-class administration. Based on the findings, several recommendations were offered including extending the time for on-line responses from two to three weeks.

#0312

Linking Environmental Education and School Culture: Recommendations for Success

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South Jackson Elementary School

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University of Georgia

Although much research exists regarding barriers to teaching environmental education (EE) in secondary schools, there has been little examination of how a school's culture may influence that integration. Trinity School in Atlanta, Georgia has been recognized as an organization dedicated to EE. In order to understand how the teachers and administration have successfully integrated EE into their curriculum, a qualitative case study was conducted to: (1) describe characteristics of Trinity School which influence or hinder EE integration and (2) examine the administrations' perspective on EE integration. Six teachers and an administrator participated in semi-structured interviews. Each interview was analyzed separately and domain analysis was used to summarize the data. Eight domains emerged regarding characteristics of the school which have influenced or hindered EE integration,

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including: support, administration, teachers, parents freedom in the curriculum for exploration, collaboration among teachers, a research-based mentality, and an integrated curriculum. Seven domains emerged regarding administration's perspective, including: the decision to make EE important, support through trainings, the permission to go outside and be creative, collaboration, the Enviroscape/resources, integration with existing curriculum, and incentives. Pre-service teacher education programs interested in placing students in schools with successful EE integration might consider schools which: (1) Appoint teachers as designated EE representatives; (2) Designate spaces that can be used for EE; (3) Provide teacher trainings on grant writing; (4) Allocate a resource room with EE materials; (5) Partner EE-experienced teachers with less experienced teachers; and (6) Publicly acknowledge teachers who are integrating EE activities in their classroom.

#0313

The ACE Program: An Undergraduate Student Led Citizen Science Experience Builds Life Skills in Urban High Schoolers

Nicholas E. Fuhrman, Milton G. Newberry, III, A. Chris Morgan and Sarah G. DeLoach
University of Georgia

The Ambassadors for Conservation Education (ACE) Program involves undergraduate students teaching high schoolers from Atlanta, GA and Washington, DC about forestry data collection and careers in the natural sciences. Perhaps most importantly, it prepares urban high schoolers to become life-long learners through a citizen scientist experience where the students collect data in state and federal parks. The high school students work collaboratively in teams to collect tree species and diameter data within established plots and answer real-world natural resource questions with their data. Although the literature is rich with information on the positive outcomes of involving youth as citizen scientists, much of it is anecdotal. The purpose of this study was to empirically measure the impact of such experiences on youth life skill development. In this presentation, participants

will: (1) acquire knowledge of the process used to empower undergraduates and high schoolers in a positive collaboration and (2) reflect on the benefits of this service-learning experience. To assess life skill developmental outcomes and interest in science careers, 78 high school students completed a retrospective post-then-pre questionnaire online following their data collection experience. Paired samples t-tests revealed statistically and practically significant gains in problem-solving skills ($t = 3.218$, $p = 0.002$), self-efficacy ($t = 3.441$, $p = 0.001$), teamwork skills ($t = 2.575$, $p = 0.012$), and communication skills ($t = 4.938$, $p = 0.000$). In addition, students indicated knowing more about career opportunities in the sciences and felt more comfortable interacting with natural resource professionals because of the ACE Program.

#0314

Undergraduate Student Perceptions of Public Speaking, Natural Resources and Communication Technology

Sarah G. DeLoach, Milton G. Newberry, III, Nicholas E. Fuhrman and A. Chris Morgan
University of Georgia

The natural and social sciences are often taught separately; however, employers indicate that students from both disciplines currently lack key communication skills necessary for success. Agricultural Communication 4000 is a class designed to combine the natural and social sciences while helping undergraduate students improve skills in three areas previously identified by agricultural and natural resource employers as being important: public speaking, tree species identification (dendrology), and communication using technology. In this poster, participants will: (1) become aware of unique course development strategies for marrying these two disciplinary arenas, (2) acquire qualitative data directly from students regarding their perceptions, and (3) gain advice concerning how best to improve course curriculum of this nature. Students were asked to share their perceptions of the experience through reflective journals. Qualitative data were analyzed using content analysis procedures and

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common themes were examined. The data revealed that students perceived a direct link between course experiences and a reduced anxiety toward public speaking. In addition, students had an improved overall confidence in their ability to effectively communicate. After completing this course, students felt more confident speaking before an audience, identifying trees based on key biological characteristics, and communicating this knowledge using video technology. Engaging students in a course of this nature could potentially lead to greater soft skills competencies, knowledge of dendrology, and agricultural communication proficiency

#0315

Needs Assessment for the Development of a Geographic Information Systems Course to Manage Campus Information.

Kevin Duerfeldt, Jennifer Bousset and
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Iowa State University

While working with the EARTH Program (Education And Resiliency Through Horticulture), we collected and managed spatial information using Geographic Information Systems (GIS) at Giff Hill School (GHS), U.S. Virgin Islands. To determine whether to continue the use of GIS, we developed three objectives. 1) Describe current information management at GHS. 2) Determine and measure perceptions of GIS and demand for continued GIS development 3) Identify how stakeholders would like to see GIS incorporated into property management and curriculum. We developed a brief online survey consisting of five closed-ended and four open-ended questions. The survey was administered to teachers, administrative staff, and school board members at GHS. We found that while these stakeholders at GHS believe spatial information pertaining to the school's properties, facilities, and students is managed adequately; they would be interested in further development of GIS as a method to manage spatial information. Questions pertaining to current information availability, organization, and accuracy averaged 3.27 on a 5-point Likert scale indicating information is

currently moderately well managed. We also found that stakeholders were interested in incorporating GIS into the curriculum. When asked "Would you like to see GIS incorporated into curriculum at GHS and if so how?" stakeholders responded positively with suggestions on integration with current courses and possible development of a new elective course on GIS. These results suggest that there is enough interest among GHS stakeholders to continue exploring integrating site management using GIS into the curriculum as an introductory vocational training program.

#0316

Biobased Energy Education Materials Exchange System (BEEMS)

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Project members have noted that new courses related to biobased energy are being introduced regularly around the country and that there are few resources that adequately synthesize information in this diverse and changing field. Compiling expertise and course materials from existing courses would help those instructors already teaching such courses as well as those who would like to offer a new course at their institution. The project team members have been working to develop a biobased energy education material exchange system for faculty members to share course materials and advocate student interaction among different institutions. Course materials such PowerPoint slides, homework exercises, and examination problems will also be developed by the team. Up

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to now, the team has developed PowerPoint modules for the following eight (8) topics: biomass pretreatment, enzymatic conversion, biodiesel, sugar-based and starch-based ethanol, biobutanol, anaerobic digestion, biomass gasification, and biomass pyrolysis. More than 30 faculty members who are teaching biobased energy related courses are reviewing and using these modules in their classes now. The following six (6) modules are under development now: algae; liquefaction; physical, chemical, and structural properties; fermentation; microbial fuel cells; and feedstock logistics. It is expected to have up to 50 faculty members using BEEMS for their bioenergy teaching. We hope to reduce teaching preparation time by 50% via sharing of course materials, increase the quality of the biobased energy courses among the member universities, and increase student enrollment in such courses (up to 1,000 students enrolled annually in courses utilizing BEEMS).

#0324

Celebrating Award Winning Teaching by Identifying Themes to Sustain in Post-Secondary Agriculture Instruction

Laura Sankey and Daniel D. Foster
The Pennsylvania State University

While there have been some calls for improvement in higher education instruction, excellent, award-winning instructors do exist and are celebrated. What beliefs do they have as instructors that can be captured to sustain instructional excellence? An effective teacher is the single most important school related factor for student success. The purpose of the descriptive research was to identify themes present in the teaching philosophy statements of the United States Department of Agriculture Excellence in College and University Teaching in the Food and Agricultural Sciences award recipients. To accomplish that purpose, the following research objectives guided the study: identify the biographical, educational background, and professional experience profile of award recipients from 2000 – 2010; identify via content analysis predominant themes in the espoused philosophy statements of award

recipients; and describe frequency of predominant themes identified in the teaching philosophy statements of the award recipients. The results of this research study include identification of eleven predominant themes, which include: Student Centeredness, Instructional Variability, Build Student Rapport, Conducive Learning Environment, Professional Teaching Commitment, Enthusiasm, Expert in subject, Role model, Organization and Clarity, Provide opportunity to learn, and Technological integration. The results of this study also show a profile of award winning professors using selected demographic survey information. Future recommendations would be a descriptive research study determining if a disconnect exists between the stated teaching philosophy of award winning professors and their actual teaching practice. Further application would be to analyze the classroom practice of award winning professors and the impact had on student learning.

#0327

Current State of Beef Education Relative to Future Needs of the Beef Industry

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To provide preliminary information for a strategic planning conference to enhance undergraduate education in beef production, recent Animal Science graduates and beef industry employers were surveyed to ascertain opinions regarding the current state of beef education relative to future needs. This conference was made possible by a USDA-HEC grant (NIFA Award #: 2011-38411-30534), and functioned to engage discussion amongst faculty, representing six universities, and industry professionals. Recent graduates were asked to rate the future importance (1 = extremely important, 5 = not important) of animal welfare (1.47), ecosystems health (1.67), food safety (1.53), and genomics (1.86) to the beef industry. Despite these ratings, few students completed courses that focused on animal welfare (33%), ecosystems health (27%), food safety (13%), or genomics

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(40%). However, a majority of respondents indicated these subjects were addressed as components of other courses. The beef industry employer survey indicated knowledge of traditional production practices associated with nutrition (2.29), herd health (2.21), animal breeding (2.00), and reproduction (2.09) may be less important for new hires than their ability to manage personnel relations (1.69), to assess and interpret data/records (1.40), and to identify and outline the basis of current issues (1.42). While employers believe usage of social media will become more important in the future (2.17) compared to the present (3.08), traditional business communication skills (1.33) remain critically important to the success of graduates. Both groups indicate future beef educational programs need greater focus on managerial application, communications, and issues related to components of beef systems.

#0328

A Comparison of Learning Styles and Academic Performance of Students Enrolled in Introductory Poultry Science Courses

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North Carolina State University

The purpose of this exploratory research was to determine if the learning styles of students enrolled in either a Bachelors of Science or an Associates of Applied Science program were different and if their dominant learning style affected academic performance. Distribution of dominant learning styles, Concrete Sequential (CS); Abstract Sequential (AS); Abstract Random (AR); Concrete Random (CR), among both groups of students was not significantly different, $p=0.77$. Concrete sequential was determined to be the most dominant learning style for each group. Similar results regarding distribution were noted when learning styles were combined based on either perceptual or ordering capabilities (Concrete or Abstract; Sequential or Random). Both groups of students were dominant in a concrete perceptual quality and sequential ordering capability. No significant differences were noted between either group regarding perceptual ($p=0.88$) or ordering

capabilities, ($p= 0.39$). When comparing the effects of dominant learning style on academic performance, no significant differences were noted in the lecture component of the course (quizzes and hourly exams) for either program or learning style ($p=.57$, 4 yr.; $p=.94$, 2 yr.). Although students enrolled in the Bachelors of Science introductory poultry science course had consistently higher scores on each of the laboratory components than students enrolled in a similar course in the Associates of Applied Science program no significant differences were noted in any of the laboratory components or the final laboratory grade ($p=.77$, 4 yr.; $p=.43$, 2 yr.) for either group of students or learning style.

#0329

Tox in a Box: Utilizing Inquiry-Based Instruction and a Flipped Classroom to Instruct Environmental Toxicology

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The eTOXIC (Environmental Toxicology Inquiry Curriculum) project's goal is to help biomedical research become accessible to students in an inquiry-based instructional approach focused on applied STEM materials while utilizing social networking technology to achieve a "flipped" or inverted classroom. In pursuit of that goal, the materials provide connections between lesson topics and research projects that will resonate with current student learning. Each module is structured around a laboratory activity in which students design, plan, execute, and interpret their own experiment. As an open educational curriculum, the unique hybrid design is available to every instructor. For the first "Everyday Toxicology" module there are six lessons 45 minutes in length. Student learning in this curriculum comes through a variety of modalities: reading articles, participating in group work, contributing to class discussions, viewing custom animated videos, completing out-of-class assignments, and online discussions. The use of online collaborative/social networking platforms will be used in and out of the classroom to extend learning. Student materials come in a collection

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of pieces that will provide teachers ease in posting student components to their selected online collaborative tools. Teachers are not only provided with meaningful materials to use with their students but are also supported with content and technology professional development materials. Curriculum is appropriate for both secondary and post-secondary audiences. The module was pilot tested in 2011 and field tested in 2012 in 11 schools in 9 states with 285 secondary students. Next module currently in development is "Food Toxicology"

#0330

Faculty Book Club for Teaching Excellence

Jeremy M. Falk and John Foltz
University of Idaho

A perennial challenge for faculty is to continually seek ways to improve their courses and enhance student outcomes. Sometimes all that is possible is to rely on one's own experiences, discussions with students, and annual teacher evaluations. Yet it is valuable to regularly pause and consider ways of improving the way we teach. This challenge can be taken individually, but the College of Agricultural and Life Sciences at the University of Idaho created a teaching study group that examined our teaching through the use of a book on college teaching. This inaugural Book Club read *How Learning Works: 7 Research-Based Principles for Smart Teaching*.

Twelve self-selected faculty members met four times, bi-weekly, and discussed how the principles offered in the book could be implemented to improve student performance. Participants were assigned to read approximately two chapters every two weeks and come prepared to discuss or ask questions about how what was read comes to life in our classes. Discussions were generally guided by questions posed on a worksheet provided by a faculty member in Agricultural Education. The results have been: 1) an increased awareness of struggles of faculty members across the college, 2) improved collaboration on both teaching and research projects, and 3) modified learning strategies within courses to effectively educate

students. The book brought to light how coursework needs to be purposefully aligned to build on previously taught concepts, as well as how assignments should reflect the objectives set by the course. Future professional development topics also were created as a result of this book club.

#0331

A Distributed-Framework for the Research Experiences for Undergraduates in Water Resources

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University of Florida

The goal of the Research Experience for Undergraduates (REU) Program in the Agricultural and Biological Engineering Department (ABE) at the University of Florida (UF) is to provide students with a unique opportunity to conduct interdisciplinary research in water resources, integrating research and extension. The eight-week REU Program utilizes the extensive infrastructure of UF – Institute of Food and Agricultural Sciences (IFAS) through the Research and Education Centers (RECs). Some students are located at the main campus, in Gainesville, FL, and some students are distributed off-campus, at the RECs, where some of the ABE faculty are located. Cyber-infrastructure is heavily utilized to ensure a positive cohort experience. The students achieve an enriching cohort experience through social networking, daily blogs, and weekly video conferences to share their research and other REU experiences. Weekly group meetings and guest lectures are conducted synchronously via video conferencing. In the last two years of the Program, fifteen students from diverse cultural and educational backgrounds have been mentored. The research projects have resulted in 10 presentations at professional meetings, with one Best Presentation award. Five presentations will be given in the coming year. Feedback and assessment forms indicate that, for most students, our Program was their first exposure to extension in water resources. This model of providing integrated research and

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extension opportunities in hydrology, where not all the REU participants are physically co-located, is unique and can be extended to other disciplines.

#0332

Applying the Modified Social Technographic Ladder to Education in Agriculture

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Much like Rogers' technology diffusion model's longevity in agricultural production and education, the modified social technographic ladder can potentially be a longstanding model that describes agricultural students' behaviors in advanced Web 2.0 education. These modifications follow Bernhoff's levels of activity, but specifically refer to educational activities ranging from inactivity to creation. In Web 2.0 technologies, students can be immersed into life-like agricultural learning environments to work through case studies, explore different types of agricultural production, experience natural disasters, and engage in learning through atypical experiences. Each profile within the modified social technographic ladder describes the adoption levels and specific behaviors of agricultural students in their education experience. Further, depending upon the Web 2.0 activities students participate in and their level of involvement, students can be placed into behavior profiles within the social technographic ladder. These profiles may have predictive value in determining levels of activity students will adopt in online communities and e-commerce. Current practices that employ the modified social technographic ladder profiles in teaching and learning in agricultural education have been and will continue to be examined. Instances of such application identified by the researchers include Web 2.0 components of curriculum in crisis communication, food safety, cultural immersion, online conversations about agricultural production, and emergency animal response. This modified social technographic ladder can serve to more accurately describe students' educational involvement and

engagement in agricultural experiences within Web 2.0 activities.

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#0336

Student Concerns and Expectations of an International Travel Course

Cynthia Haynes and Ann Marie VanDerZanden
Iowa State University

In 2000 and 2012, faculty from the Department of Horticulture at Iowa State University took students to England for a two week trip with a semester long preparatory course. On both trips to England students were surveyed to determine; 1) motivation and goals for the trip, 2) fears or concerns for the trip, and 3) expectations of the course and trip. A 16-question survey (10 close-ended and 6 open-ended) was given to each student in the 2000 class (25 students) and 2012 class (14 students). In 2000 many students responded that the three semester credits given for the course were not the motivating factor for participation. Their primary concerns or fears regarding the upcoming trip were packing efficiently (39 %), money issues (26%), and interacting with other students (17%). Ninety percent of students responding indicated that the course and trip met their expectations. Eighty percent said they would participate in another international course and trip. Several student responses also noted changes in personal development and growth including: an opportunity for introspection, increased tolerance of other people and customs, better ability to adapt to new situations, the development of close friendships with other travel companions, and an increased interest in horticulture. Survey results from the 2000 England trip will be compared to the 2012 England trip (conducted in May).

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#0337

Usage of Team- and Problem-Based Learning in a Sophomore-Level Animal Management Course

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Employers demand graduates who can interact with others and solve problems. However, most undergraduates have negative perceptions of team- and problem-based learning. It may be difficult for groups to meet, and there is anxiety regarding fairness of grading. For two years, team- and problem-based learning was used as an integral component of a sophomore-level animal management course; average enrollment, 80 students. Students were stratified into equal groups (5-6 students each), based upon primary species of interest. Prior to discussion of each unit, teams completed a readiness assessment test (RAT) using special scratch-off answer sheets designed to provide immediate feedback and award partial credit on multiple choice tests, and student teams could appeal incorrect responses on the RAT. Overwhelmingly, 95% of students agreed that team quizzes facilitated learning, and scratch off answer sheets promoted discussion (94%). Furthermore, 96% indicated the appeal process enhanced learning as teams worked together to develop concise arguments. Associated with positive peer pressure, 68% of students reported increased preparation for team quizzes. Problem sets were also associated with each unit. Eighty-nine percent agreed that completion of team problem sets facilitated learning within the group. While 19% of students believe they did more work than their peers, only 6% indicated a preference for individual quizzes. Team scores were individually adjusted based upon self- and peer-evaluations. Finally, 88% of students stated they were more attentive and interactive when team components were conducted. Team- and problem-based learning appears to be methods that can actively engage students in the learning process.

#0339

Pilot Study of Teaching and Learning Herbaceous Plants Using an iPhone Application

Cynthia Haynes and Kevin Duerfeldt
Iowa State University

In 2010 ISU Horticulture and MEDL Mobile began development of a mobile application (Mobile Educator: Flowers 101) for iPhones to use in an undergraduate herbaceous plant identification class. In 2009, 61 % of students from the class participated in an online survey about their expectations of such an application. All participants expected a mobile application would assist them with learning and 50% thought it could be helpful in future careers. In the fall of 2011, student learning and perceptions of the application were assessed. Students were given pre and post-surveys to predict and record their opinions on the ease of use, time spent using it, and its affect on their learning. One group (9 students) received an iPod touch with the application loaded for the first half of the semester. At midterms the iPod touches were transferred to the second group (14 students) that did not have access to it earlier. When asked how useful they thought the application would be before using it, the average student response was "somewhat helpful" to "greatly helpful" (4.7 on a 6 point Likert scale). After completing quizzes with access to the application, student responses on the helpfulness of the application were much lower as "little help" or "some help" (2.4 on a 6 point Likert scale). The researchers also discovered that many students were only using the application once per week for fifteen minutes prior to the identification quizzes, thus possibly explaining their perceived lack of usefulness.

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#0341

Correlation of SAT/ACT Scores and Estimated Family Financial Contribution of Texas FFA Scholarship Recipients

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Sam Houston State University

For years, professional educators and psychologists have searched for a link between a student's family income and his or her college admissions exam score. These test scores are also often used to make decisions about the awarding of scholarships, graduate assistantships, and other academic-based awards or privileges. The primary objective of this study was to determine whether a family's estimated family contribution (EFC) has a positive relationship with the student's score(s) on the SAT and/or ACT. Data was derived from 246 high school seniors that were chosen for Texas FFA Association scholarships in 2011. The initial descriptive statistics showed no significant changes in test scores between EFC groups for the ACT and SAT. After running an ANOVA and post-hoc tests there were two significant changes between groups having taken the SAT. The Tukey post hoc test showed a significant difference ($p = .041$) between the Need Base Loan/No Pell group and the Full Pell Eligible group. LSD showed a significant difference ($p = .008$) between the Full Pell Eligible group and the Need Base Loan/No Pell group. Based on the statistics, there is very little to no correlation between Estimated Family Contribution and a student's score on the ACT or SAT.

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#0346

The Professional Development Project for Teaching Advanced Animal Science

Smantha Ullrich , Doug Ullrich,
Sheyenne Krysher and Dwayne Pavelock
Sam Houston State University

The 80th Texas Legislature, in May 2007, passed HB 3485, requiring the State Board of Education (SBOE) to revise the Texas essential knowledge and skills (TEKS) for career and technical education. Following the approval of these new TEKS and new courses in Agriculture, Food and Natural Resources, the SBOE made changes to the graduation requirements. Within these changes the Advanced Animal Science class was approved as a fourth science credit. To meet these new standards the Texas Education Agency created a project to develop online Professional Development for teachers and to create, gather and disseminate educational materials for the Advanced Animal Science class. The project's first phase began in January, 2011. Twelve agricultural science teachers served as an expert panel to give guidance and develop a Scope and Sequence for the class and to review online professional development materials. High school agriculture teachers must complete the 90-hour, online professional development module to be eligible to teach Advanced Animal Science as a 4th science. The project's second phase involves reviewing and updating these online materials and developing student materials for teachers to use. Student materials are to follow the same Scope and Sequence as the professional development project. The third phase will begin in September, 2012. This part of the project will focus on developing and correcting student materials, plus loading them on the website. An additional function will include monitoring the online teacher professional development website, making additions and corrections, and addressing teacher questions and concerns.

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#0347

Engaging Undergraduates in International Relationships in Agriculture

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Moscow State Agroengineering University (MSAU) in Moscow, Russia, is a place where students from the United States have been coming for a semester of study abroad for the past 13 years. The program, which began through cooperative efforts between Penn State and MSAU, allows undergraduate students to discover a new culture, discuss agricultural issues on a global scale, and experience Russia first-hand. It is a faculty-led program coordinated out of Clemson University. The program is largely funded by Clemson's Study Abroad Office. In recent years, the program has expanded to include students from AgroSup Dijon, an agricultural engineering university in France. Students earn credits for agricultural curriculum courses as well as a Russian language course. In most courses, students from the three countries work in teams on various projects. As an added bonus to the program, the intercultural activities continue beyond the classroom in the form of agricultural field trips and extracurricular activities around Moscow. Discussion from this poster will include: 1) a detailed explanation of the conceptual model for this unique program; 2) an overview of student perspectives of the program, including the weekly agricultural field trips and samples of course projects; 3) a discussion about the reciprocal program that allows French and Russian students an opportunity to visit the United States for an agribusiness study, and 4) perspectives about the Russian and French cultures from a faculty member who has taught an Agricultural Leadership course in the program.

#0352

Teachers' Concerns and Behaviors While Implementing the CASE Curriculum

Misty D. Lambert, Jonathan J. Velez and
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Oregon State University

This qualitative study sought to explore the impact that the new CASE curriculum was having on the total high school agriculture program as perceived by the Agricultural Education instructor. Five teachers across four schools participated in a year of weekly journals, two semi-structured interviews, and one focus group. This research uses the Concerns Based Adoption Model as the framework and lens for the research. The findings for the study are supported by thick, rich quotes and indicate seven themes: a) Teachers were uncertain as to the impact CASE would have on their enrollment; b) All of the teachers saw CASE as paperwork heavy, grading heavy, or both; c) The materials and equipment were essential to the successful implementation of CASE; d) The teachers took personal ownership of CASE and modified it; e) FFA and SAE were altered; f) Pacing was a challenge for some; and, g) CASE provided more science content and less production focus. Results also indicated that, when placed in the Concerns Based Adoption Model, the teachers were at various stages of concern, levels of use, and implementing the curriculum in various configurations. Teachers considering the implementation of CASE should be aware of funding and equipment needs as well as understand the requirements of preparing and teaching a CASE lesson. Teacher educators should consider their statewide focus in agricultural education and determine whether an emphasis on science integration is beneficial to their local teacher. The researchers offer practical suggestions for implementation and modification of this national curriculum package.

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#0353

A Collaborative Study Abroad Research Project of the Assessment of Dairy Cows Behavior While Integrating Group Problem Solving and Critical Thinking Skills

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Purdue University

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University of Florida

Creating real life situations for problem solving is an effective tool for education. This methodology allows students a great benefit by direct relationship to the issue and immediately observing their solutions to the problems. The ability to solve problems is a sought after skill in the work place and even more so the ability to work collaboratively in groups. When students have the ability to discuss situations and to work with different viewpoints and opinions and collectively develop a solution, it greatly enhances their critical thinking and problem solving skills. Most study abroad courses usually highlight visits to farm sites where students normally just tour the farm. However, in our study abroad course hands on farm research was included in an integrative learning approach. Sixteen students participated in a study abroad course in Costa Rica and they were placed in team groups that collected qualitative data of the feeding behavior of dairy cows fed common and novelty feeds. Students observed and recorded the feeding behavior using an ethogram. Major practical implications from this experience were lessons regarding teaching students about agricultural practices and animal feeding behavior in different countries. The results from the student assessments were an increase in their current knowledge of personal problem solving style with a mean post-pre of 0.44, as well as, an increase in their ability to identify types of feeds consumed with a mean post-pre of 1.12. The project was successful in raising students' awareness of the challenges and limitations of conducting on-farm research, the use of novelty feedstuffs, dairy cow feeding behavior, and how to work more effectively with team members when problem solving.

#0354

Uses of Horses for Innovative Teaching and Research

T Ross, D Hansen, J Bruemmer, D Denniston and J Black
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In animal science based undergraduate programs, there is a need to provide hands-on learning experiences. Often, these experiences are limited due to large student numbers, small faculty numbers and financial pressure. A nutritional/orthopaedic based research project using 12 horses was planned, and undergraduate learning opportunities were incorporated as a method of providing in- depth learning. The same horses were also used for a reproduction research project in which students enrolled in a reproductive techniques course participated. The objective was to document the value of working with these research projects to three populations of students: volunteers, independent study students, and reproduction students. Students assisted over a 100-day period and were responsible for horse handling and care, weighing feed rations, collection of biological samples, documenting vital signs, body weight, body condition scoring, and preparation for arthroscopic surgery and recovery. Independent study students were additionally required to write a lay article focusing in equine nutrition. Students participating in the reproduction course were responsible for blood sampling, artificial insemination, and reproductive examinations. Evaluation of the experience was done by survey. The scale ranged from 1 (strongly disagree) to 5 (strongly agree). Student response to the question that the experience was valuable to their undergraduate education was: 4.92/5 for student volunteers; 5/5 for independent study students, and 4.75/5 for reproduction students. The research projects generated data for publication and provided students with a unique opportunity to understand research procedures, and develop appropriate animal management skills within animal care and use guidelines at a university level.

2012 NACTA/DOCE Abstracts

#0355

The Relationship Between Self-Regulated Learning and Problem Solving Style in Participants of an Agricultural Leadership Program

Avery Culbertson, Alexa Lamm and
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To build upon adult learning, agricultural leadership programs are established to increase leadership skills and understanding of issues. Through training, leaders improve themselves, their industries, and their communities. As programs are assessed, self-regulated learning and problem solving styles are two areas that can be examined in the context of adult learning. Since assessing the effectiveness of adult education to encourage positive community change is part of the National Research Agenda, a study of the relationship between self-regulated learning and problem solving style in adults can provide a description of needs of adult learners and direction for future research.

The purpose of this study was to describe the relationship between agricultural leadership program participants' self-regulated learning and problem solving styles. Participants in this census were members of an agricultural leadership program in a southern state. Self-regulated learning and problem solving styles (adaptors and innovators) were assessed using the Motivated Strategies for Learning Questionnaire and Kirton's Adaption-Innovation Assessment. The study indicated a negligible correlation between self-regulated learning and problem solving style. This indicated that self-regulated learning strategies can be adopted by both adaptors and innovators.

Participants in these programs can increase their leadership skill by understanding behaviors and styles within themselves and others. They can also take responsibility for their own learning, and construct meaning and understanding from their experiences. Knowing this, program facilitators should understand how participants implement skills such as self-regulated learning and effective problem solving in the learning process to equip leaders to assume leadership roles.

#0356

Experiential Learning at the Catawba Sustainability Center

Rachel Kohl
Virginia Tech

The Agricultural Technology Program (AT) is Virginia Tech's only 2-year associate's degree. AT utilizes hands-on, educational opportunities as essential components to provide skilled graduates. Our students tend to learn better through these methods and to the extent possible, we provide these learning experiences. However, due to limitations in resources, these learning opportunities are more limited than either we as a faculty or the students would like and we often believe we are not meeting their needs or our mission adequately. While the College of Agriculture and Life Sciences (CAL S) provides many fine facilities for us to utilize, there are still areas in which the facilities are inadequate for what we are teaching, or, our access to them or ability to utilize them are less than desirable.

The university owns a 377 acre property, the Catawba Sustainability Center, which is underdeveloped and virtually unused. To continue our work with the Center which began in fall 2010, I created a special study class, Catawba Center Farm Mgt. The class created a rotational grazing system, including fencing, livestock capacity and water sources for the local producer planning to graze cattle on a section of that land. This class created an experiential learning, community outreach and service learning opportunity for these students. It has allowed them to not only research and plan this grazing system but work towards implementing their plan. This 'real life' lab class provides invaluable experience and is one I hope to continue in the future.

2012 NACTA/DOCE Abstracts

#0357

Celebrating Student Ownership in Learning: Utilizing Student Contracts to Develop Global Citizenship in an International Immersion Experience

Melanie M. Foster
College of Agricultural Sciences

Daniel D. Foster and David Ader
The Pennsylvania State University

A true celebration of the teaching and learning process is the moment when a student accepts ownership and personal responsibility for their own learning. However, in individualized learning scenarios like global immersion experiences with host families, accountability for learning and student ownership in course expectations can be difficult to obtain. In the INTAG 297 "Spanish for Agriculture Course", eleven students attended 14 class sessions to prepare for four weeks in Costa Rica. Students were asked to create an individualized learning contract. A learning contract is a collaboratively written agreement between a student and a faculty member that delineates what is to be learned, how it will be learned, and how that learning will be evaluated. Allowing students to decide which activities they will engage in and how they will demonstrate that they have satisfactorily completed their studies permits a teacher to differentiate instruction. The pedagogical approach shifts responsibility for learning from the teacher to the student, but at the same time offers an incentive by ensuring success under known conditions. One of the primary objectives of the learning contracts in INTAG 297 was the development of the very individual construct of global citizenship. An increase in global awareness and intercultural competence is often an assumed side effect of international travel; the global learning contract represents a systematic approach to guide students toward these goals. All eleven students satisfactorily completed the learning objectives and the instructor intends to utilize the learning contract in future embedded travel courses.

#0361

Perspectives on Agriculture and Life Sciences Undergraduate Research Experience

Amanda Ford, Elaine Turner and Wendy Dahl
University of Florida

Although many undergraduate students participate in research, little is known about how their expectations compare to faculty overseeing the research. This study explored the attitudes, perceptions and expectations of undergraduate students enrolled in the College of Agricultural and Life Sciences, University of Florida, and of their faculty supervisors. Students (n=3,935) and faculty (n=506) were contacted, and 328 (8%) students and 86 (17%) faculty members completed questionnaires through Survey Monkey™. On average, faculty supervised 2 students, expecting 5 hrs /wk per credit hour or 8 hrs /wk for volunteers. Student respondents participated in research, on average, 8 hrs/wk. Students agreed or strongly agreed that they play an important role in research (59%), are actively engaged (67%), are satisfied with the research experience received (77%), believe the task and projects they are assigned showcase their interests and talents (55%), and are primarily motivated to participate in research due to a genuine interest (65%). Faculty agreed or strongly agreed that they believe that the undergraduate students feel they play an important role in research (79%), are actively engaged (79%), believe the undergraduates are satisfied with the research experience received (90%), assign tasks that showcase their students' interests and talents (72%), and believe undergraduates are primarily motivated to participate in research due to a genuine interest (54%). In general, faculty have more positive perceptions on undergraduate research experiences than their students. Further research is needed to identify specific outcomes for undergraduate research experiences, as well as appropriate methods for assessment of these outcomes.

2012 NACTA/DOCE Abstracts

#0362

Teaching Technology in a Push-Button World

Emily Rhoades
Ohio State University

In a technology-laden world students are not only expected to know technology automatically, but they are also expected to pick it up instantly. However, not all students walk into our classrooms ready to take on that challenge. These students also expect for their instructors to show them each button to push to be successful. With this same technology changing the minute they leave the classroom, we as instructors cannot give them step-by-step instructions and expect them to succeed. This presentation aims to discuss the variety of ways in which learning styles must be taken into consideration as instructors teach how to learn technology rather than use technology as it is today. Theoretical frameworks around critical thinking, learning styles, and experiential learning will be taken into account as directional methods for teaching technology to savvy users and apprehensive users. From directed to self-guided learning, students can be challenged in a variety of ways in order to grasp the skills needed to learn technology as it appears. Observations from courses in which learning is centered on technology will be shared from successful cases and lessons learned on how to reach each student successfully.

#0365

Teaching to Different Generations in Today's Classroom

David Jones
North Carolina State University

For the first time in the history of the American education system there are four generations sitting side by side each other, learning the same material. In the educational setting, these different generations can and will affect how well the information is learned. It is important for the teacher to understand the differences in generational attitudes and beliefs if they wish to be successful in educating their students. These generational differences affect not only the way individuals learn, but each generation brings with it differences in motivation, relationships and how to deal with change. Even communication strategies vary between the different generations. Research has shown that each generation learns differently based on their generational background (Hammill, 2005). Depending on the generational attitudes, behaviors, beliefs, motivation needs as well as learning/educational expectations will be different. For the educator it is imperative they are aware of these differences and have the ability to communicate and relate to the different generations. This ability to communicate with the different generations will help to reduce confrontations and challenges within the classroom. Until the teacher understands that each generation has unique values, attitudes, needs and motivators, learning will be hampered. In order for the educator to successfully make an impact in their student's lives one must be able to connect, communicate and relate to their students. By realizing how different generations learn, what motivates them as well as their expectations from their teacher an educator can enhance the educational experience for their students.



2012 NACTA/DOCE Abstracts

#0366

Perceptions of Receiving Feedback and Overcoming Performance Anxiety: Insights from Preservice Agriculture Teachers

Julie Robinson and Caryn M. Filson
The Ohio State University

Through a review of literature researchers found that when teachers receive feedback on their performances it impacts their teaching abilities. It was also found that performance anxiety acts as either a motivating or debilitating factor for teachers in the classroom. A research study was conducted with preservice agriculture teachers at a Midwestern land grant institution on the perceived benefits of receiving feedback following microteachings and their perceived levels of performance anxiety. Participants completed a survey questionnaire; the first half of the survey addressed the students' attitudes and perceptions about feedback they received after completing a microteaching for their methods of teaching course. The second half of the survey addressed students' performance anxiety before teaching a lesson. Preservice teachers reported that the feedback from instructors was the most beneficial for making improvements to their teaching strategies; self-reflected feedback generated after viewing a recorded video of their teaching was found to be the second most beneficial; and feedback from peers was reported as the least beneficial. Overall, preservice teachers agreed feedback was important to improve their teaching. In addition, preservice teachers felt somewhat nervous and anxious before conducting a microteaching during class. When asked if they felt comfortable teaching in front of their peers, they reported feeling somewhat nervous and anxious. It was found that the more the preservice teachers planned, the less nervous they felt before teaching. Lastly, they reported that when they experience anxiety before teaching a lesson, it motivates them to prepare more for future lessons they teach.

#0367

Celebrating School-Based Agricultural Education Across the Globe: Utilizing and Sustaining Digital Community of Practice

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R. Kirby Barrick
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Seung Il Na
Seoul National University

International experiences are valuable learning opportunities that universities need to continue to develop in response to the demands of the workforce. The most beneficial international experience is highly related to the career goals of the students participating. The literature defines the need and importance of international experiences for collegians studying in the agricultural sciences, specifically to develop global citizenship and competency. The study of agricultural teacher education at the undergraduate level occurs in few countries; South Korea, like the United States, offers programs in agriculture in the secondary schools and provides teacher education programs in universities to prepare agriculture teachers. There were 19 students from two land grant universities participated in a three-credit academic course with ten course sessions and an embedded 10 day travel experience. The experience was the first global experience for 17 of the 19 participating students. Students from both universities engaged in constructing knowledge, understanding and meaning through the development of a digital learning community within a web structure hosted by the future professional organization of the students. Over 40 blog posts, 20 documents and 15 discussions occurred in the digital learning community. In addition, students were assigned to a digital pen pal. The digital pen pal was a student from the host institution in Korea. Students were placed in groups of three, provided an initial prompt and encouraged to communicate via email and to interact in the digital learning community. Constructing repository of knowledge on the global experience allowed student to maximize learning in country.

2012 NACTA/DOCE Abstracts

#0369

Enhancing Learning and Introducing Agripharmatech Program to Middle and High-School Students by Involving Botany Club Members as Student Ambassadors

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Windward Community College

The Botany Club at Windward Community College (WCC) originated in 1998. The Club Officers consist of an Advisor (Program Coordinator), a President, a Vice-President, a Recording Secretary, and a Treasurer. Members are Botany students and other students interested in plants. Activities include participating in study groups and learning about plants. In 2005, active club members doubled to more than 50 students. Their activities expanded by providing potting/transplanting demonstrations to community members through campus and off-campus events such as the annual Hoolaulea and creating orchid floor/table displays for Island orchid shows. Starting in 2008, club members became student ambassadors, increased their campus involvement by providing hands-on activities and tours to the campus medicinal garden to about 300 K-12 students (through the WCC Summer Youth Program, the WCC Exploring Windward, and the Kailua Imagine Day) and introducing the Agripharmatech program to more than 1,000 community members (through the Hoolaulea, the WCC Adult Return to Education Day, the Kahuku Education Fair, the Future Farmers of America, and the Waimanalo Education Fair). The student involvement and extracurricular activities experienced by these student ambassadors have positively impacted their learning efficiency and retention. The number of Agripharmatech graduates has increased by 20%, the number of students meeting certificate requirements within 18 months increased by 70%, and transfer retention in higher degree institutions in program related fields increased by 50%. The effort of introducing the Agripharmatech program to the community members, middle and high school students resulted in a 90% favorable interest in plant sciences.

#0370

Measuring Community Economic Impacts Derived from FFA Career Development Event Participant Spending

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Texas A&M University

Dwayne Pavelock and Doug Ulrich
Sam Houston State University

According to AAEA (2011) national research priorities, research is needed that informs potentially uninformed citizens about the economic viability of agriculture. A total of 168 schools participated in a single Career Development Event (CDE) and each advisor was given a single survey to represent their entire program. The results were that 92 completed surveys were collected from the population of the event (n=168), which results in a response rate of 55 percent. The survey results found those programs attending the state CDE contest had an average attendance of one advisor (1.42), very few chaperons (.25) and nearly seven students (6.64) with an average group size of eight persons. In terms of developing economic value, the majority of programs (86%) stayed in the local community utilizing hotel room nights ranging from one to three nights with the majority of those using hotels reporting a one night stay (73%). In terms of tourism spending, respondents reported \$650 in total group spending, with the majority of the spending reported in the areas of meals (\$215) and accommodations (\$211). Total spending is estimated at \$109,076 across all groups. In addition to spending values, these dollars replicate and create a total value of over \$200,000 in economic value IMPLAN. These spending values are directly connected to the local community, which potentially offers opportunity for building relationships with community leaders by better understanding local community economic impacts from agricultural education events.

2012 NACTA/DOCE Abstracts

#0371

Creating Virtual Nursery Trips to Improve On-Campus and Distance Education in Nursery Production

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University of Arkansas

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Texas A&M University

A national survey conducted in 2009 or instructors of nursery production indicated a need for multimedia resources to supplement in-class instruction and field trips. Finances, logistics, and geography limit the scope of nursery production operations that students can view on field trips. The objective of this project is to document nursery production operations with video footage and create virtual nursery trips to improve on-campus and distance education in nursery production. For the first year of this project, digital video footage was collected at nurseries around the country. A professional videographer was hired, and operations were filmed in HD. Over the course of 11 months, video footage was collected at 42 nursery businesses in 22 states. Total travel included 18 trips covering 43,000 miles. To date, all images and video footage have been inventoried and archived. A professional narrator has begun preparing narration, and all video editing is being done by a professional video editor. Video footage will be arranged by topic, and we currently estimate having approximately 20 chapters or topics. Segments will range from a few seconds to several minutes. Videos will be made available to instructors of nursery production, free of charge, in July 2012 for use in fall semester 2012. Videos will be provided either as web-based or as a hard copy in the form of a USB drive. Evaluation and review of product will be conducted spring semester of 2013. Following in-class evaluation, implementation in distance education courses will be initiated.

#0373

Sustaining Agriculture by Integrating Globalization in the Curriculum

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University of Arkansas

Globalization has major implications for the sustainability of agriculture. The need to increase an awareness of globalization is critical for undergraduate students through study abroad experiences, or the integration of globalization in the curricula. The study examined how an interdisciplinary course covering the major sectors of globalization impacted the knowledge and attitudes of students enrolled in an introductory course about global agriculture. Seven units of the course illustrated the interconnectedness of technology, health, environment, trade, culture, energy, and women. Student engagement was achieved by group discussion on case studies, expert speakers and student presentations. Students submitted critiques on unit readings and developed a paper on a foreign country. News from the BBC, CNN, or similar outlets was used to gain a different cultural perspective. Speakers on topics such as GMOs, biodiversity, food security and agricultural trade policies were utilized to explain the global significance to agriculture. Evaluations indicate that students have more favorable attitudes of international travel, global issues, and interest in world events. Over 90 percent indicated an interest in study abroad. Comments like "I loved everything about the course", "I am considering changing my major to international relations", "I am encouraged to study abroad" or "I learned about topics I had never thought about" are examples of the attitude change. This course gave students an opportunity to understand globalization, review current issues, and achieve a consciousness for sustainability worldwide. Faculty should consider integrating global topics in other courses to enhance awareness.

2012 NACTA/DOCE Abstracts

#0374

Veterinary Interest Areas of Students Enrolled in a PreVeterinary Track Professional Development Course

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North Carolina State University

A unique professional development course for PreVeterinary track students (ANS 495) was developed in the Animal Science Department at the NC State University in 2011. It was offered to the PreVet students during with the two-fold objectives (a) educating students about the expanse of veterinary profession and (b) assist students in developing an understanding of the DVM application procedure. Students were surveyed for their choice of veterinary interest areas as a future veterinarian in Spring 2011 (43 students) and Spring 2012 (52 students) at the beginning of the course (Pre-test). The students were also surveyed on the level of confidence in their decision to apply to veterinary school and become a veterinarian. The highest response rate for the veterinary interest areas was earned by two categories, namely, small animal veterinarian and exotic/wildlife veterinarian. In 2011, 32% of total student responses indicated that they wanted to be small animal veterinarians while 25% aspired to be an exotic/wildlife veterinarian. The percentages of student responses were similar in 2012 with a 31% total response rate for small animal veterinarian and another 20% for exotic/wildlife veterinarian. Other categories included large animal practitioner, mixed animal practitioner, equine veterinarian, specialty veterinarian and research. In both the years, 65% students cited feeling extremely confident about their decision to be a veterinarian. Recognizing these interests in diverse aspects of veterinary medicine is key in comprehending the choices that the PreVeterinary track students make while planning their undergraduate curriculum, internships and extra-curricular experiences.

#0375

Service Learning Meets Digital Modeling Technology

Treva Sprout Ahrenholtz
University of Wyoming

Over the past seven years in the University of Wyoming's Interior Design II course, students have merged service learning with advanced digital modeling technology as they create professional commercial designs for actual clients in the community. Although traditional constructs that solve theoretical design problems provide a solid foundation, they fall short of the authenticity and engagement created by designing for an actual client needing a tangible design solution. Furthermore, effectively communicating that solution and using critical thinking skills to explore alternatives are necessary competencies in the field and key learning outcomes of the course. Digital and Building Information Modeling (BIM) technologies, including AutoCAD®, REVIT Architecture®, and 3DSMAX Design®, allow students to quickly create, analyze, and evaluate multiple 3-D design possibilities. The fast and flexible platform is an innovation for learning, simply because it saves time and allows more exploration, as compared to conventional drafting methods. The photo quality images and animated "walk-through" capabilities allow the student to communicate design alternatives with a high level of precision and professionalism. Every client in the past seven years has voiced overwhelmingly positive feedback of both process and solutions, providing another level of authentic assessment for the student and curriculum. Additionally, just under half of past commercial projects were designed with sustainable building practices in mind, and BIM technology was used to explore day-lighting and energy savings. While service based learning is a noted best practice applicable to many fields, digital modeling is flexible enough to explore as an innovative option in various programs.

2012 NACTA/DOCE Abstracts

#0376

Promoting Agriscience Literacy Through a State Fair Learning Scavenger Hunt

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The Indiana State Fair Commission

Communicating the science behind agriculture and its importance is essential for developing a factually based view of agriculture; the challenge lies in using an appropriate educational outlet. Using principles of experiential learning along with other science learning strategies, an agricultural exploration scavenger hunt was created for use at the Indiana State Fair (ISF). To encourage interaction and conversational investigation on the topics of science and agriculture with youth and their families, two important components were developed. The first component is the scavenger hunt taking place at the ISF. The self-guided quest leads participants around the ISF to interact with exhibits while answering agriscience related questions. The second component is the online curriculum. Created to promote further literacy and learning after the fair or as a stand-alone curriculum, the learning objectives of the lessons correspond with the agriscience objectives at the ISF. Focused on a central learning activity, there are also discussion questions to help participants reflect on their learning, as well as additional projects that are more challenging in nature. The program was implemented during the ISF with over 20,000 individuals participating in the experience. ISF staff observed participants and reported that participant's reactions to the agriculture experience were positive. Observations of the youth and their families as during their participation indicated that there was extensive dialogue between adults and children as well. Overall, this program displayed great potential as a learning experience and opens research avenues for learner-guided educational experiences in non-formal and informal settings.

#0378

Academic Performance in a Two-Year Turfgrass Management Program as an Indicator for Career Success

David A. Willoughby
The Ohio State University

Student academic performance, based on college final grade point average, tends to have a greater impact on career success in selected professions, most notably in the fields of law and medicine. Graduates with higher final GPAs customarily acquire more prestigious professional positions which result in higher compensation packages. Little information is available regarding the use of college academic performance as an indicator for career success in the turf grass management industry. This study examines the relationship between student academic performance based on final college grade point average, in a two-year turf grass management program, and the success level achieved by graduates at least five years after graduation. Turfgrass management students typically view achieving success in the industry as being determined by securing high level professional positions such as golf course superintendents, sports turf facilities managers, landscaping managers, related business owners, or associated industry managers. This work focuses on turfgrass management graduates from the Ohio State University Agricultural Technical Institute (n = 348) between the years of 1996 and 2006. Data for this work was gathered through personal contact, alumni records, and through industry professional organizational sources. Results of this particular study reveal that college graduates with higher grade point averages (3.0 – 4.0) do not achieve higher levels of career success, both in professional positions held and compensation, than graduates with lower grade point averages (2.0 – 3.0) in the turf grass management industry.

2012 NACTA/DOCE Abstracts

#0379

Building K-14 and University Partnerships to Enhance Science Capacity in Introductory Animal, Plant and Food Sciences Courses

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University of Nebraska-Lincoln

There is an academic chasm between high schools and universities. Although attempts such as articulation agreements, dual-enrollment, and dual-credit have been made to address this chasm, many high school students are not prepared for the expectations of college professors because their academic preparation was not closely aligned with college instruction. Although 70% of high school graduates will attend a postsecondary school within three years of graduating, more than 40% of these students need remediation. To address this problem, a Higher Education Challenge Grant project was funded to build capacity for life science education by creating a more effective partnership between high schools in [State] and [State] and [two Universities]. The purpose of this project is to develop and disseminate online learning enhancement modules for university life science introductory courses: Animal Science, Plant Science and Food Science. Teams of pedagogy, content specialists and technology were organized and have determined the most difficult central concepts for students in their courses and how students could learn that concept best. Pilot testing for these modules will begin spring 2012 and continue throughout the year. Innovative professional development is planned for summer 2013. This provides an opportunity to work together across establishments in providing a common thread of critical concepts students will need for academic success in college science courses. Recruitment for educator teams will begin this fall. These teams of high school, community college and university educators will work together to

continue pilot testing the modules as well as receive innovative professional development.

#0380

Minnesota Career and Technical Education Student Performance

Sonja L. Flaagan, Lyle E. Westrom and Brad C. Greiman
University of Minnesota

Minnesota Career and Technical Education (CTE) concentrators (240 hours completed in approved CTE courses) and non-CTE concentrators were the subjects of this study which described their achievement on mathematics, reading, and graduation rate. Data was collected from the Minnesota Comprehensive Assessment-II (MCA-II) and the GRAD. Gender, ethnicity, and socioeconomic factors were described within each data set. Research was taken from a three year time frame, 2008-2010, utilizing data collected from all schools in Minnesota. A two sample binomial test was used to compare the test results. Findings indicated that CTE-concentrators had statistically lower test scores on the mathematics and reading MCA-IIs conducted in the 10th and 11th grade than non-CTE concentrators. Results on the GRAD test administered in the 12th grade showed a statistically higher graduation rate of CTE concentrators than the non-CTE concentrators for all demographic subgroups. Z-scores for CTE concentrators indicated that individuals with disabilities or those who were economically disadvantaged had the widest advantage in graduation rates over the non-CTE concentrator comparison group.

2012 NACTA/DOCE Abstracts

#0384

Enhancing Teaching and Learning: What do Faculty Need?

Maria Navarro and Timothy L. Foutz
The University of Georgia

Efforts to improve curricula and enhance teaching and learning abound in colleges of agriculture. The drivers of these efforts can be organizational units (providing administrative structure and coordination), senior administrators (providing institutional commitment and leadership), campus champions (providing innovativeness, mentorship, collaborations), select groups of faculty (providing knowledge, grassroots leadership, and examples), students (demanding and participating in change), and other stakeholders. Faculty are key players in most successful curriculum revitalization programs. The author presents and analyzes examples of successful programs developed to support faculty in their efforts to enhance teaching, transform curricula, and improve student learning. These include: 1) support from the administration (vision, leadership, promoting a culture supporting the scholarship of teaching and learning); 2) change in policies (evaluation, reward system, leave); 3) group and individual training and professional development opportunities; 4) facilitating collaboration (i.e., faculty learning communities); 5) providing access to consultants, support personnel, and resources; 6) mini-grant programs (funding, time release, graduate students, other resources); 7) recognition; and 8) mentorship. By examining successful programs, the poster will provide a framework to help design programs to support faculty in their efforts to improve teaching and learning.

#0385

Examining Student Experiences in a Modified Problem Based Learning Approach to Teaching Sustainable Soil Management

Alisha F. Hackinen, Maja Krzic,
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University of British Columbia

Soils sustain life on Earth and their capacity to do so is dependent on the sustainable management of this limited resource. However, enrolment in soil science undergraduate programs has steadily declined over the past 30 years across North America. To ensure an adequate supply of soil scientists, some post-secondary institutions are restructuring their soil science programs. Innovative teaching methods like problem based learning (PBL) may prepare soil scientists for rigorous workforce demands. At the University of British Columbia (UBC), a combined upper-level undergraduate/graduate-level course titled Sustainable Soil Management employs a modified PBL approach to teaching applications of fundamental soil science principles to forested, agricultural, and constructed ecosystems. Groups of 4-6 students collaborate on four-week cases addressing chemical, physical and biological challenges aided by guiding questions. The goal of this study is to examine how student experiences in the Sustainable Soil Management course contribute to the development of critically thinking soil science professionals. This case study converges evidence from classroom observations, student interviews, and document analysis obtained between January and May 2012. Data analysis is being conducted through pattern matching for trends and anomalies. Preliminary results suggest that while students feel the lecture/group-work balance is supportive to learning about sustainable soil management for their own area of interest, transfer of knowledge between contexts is weakly exhibited in students' written assignments. Final results will be presented as key transferable elements for utilizing PBL in teaching Sustainable Soils Management with the goal of contributing to the enhancement of soils education in North America.

2012 NACTA/DOCE Abstracts

#0386

Exploring the Use of a Course Management System for Online Academic Advising

Kelsey Hall and Taylor Adams
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Since millennial students use various electronic resources to communicate daily, faculty and academic advisors should know about and use the electronic resources available at their universities to communicate with students. Many faculty already use a course management system (CMS) for classroom learning and communication. Little to no research has explored how a CMS can be used to electronically advise students. The purpose of this study is to explore how academic advisors use Canvas, a CMS, to advise undergraduates. The researchers conducted semi-structured face-to-face interviews with four academic advisors who use Canvas to advise students online at a western university's College of Agriculture. The participants were asked 11 open-ended questions. Interviews were digitally recorded and transcribed. The researchers used the constant comparative method to identify similarities and dissimilarities among responses from the participants. Participants used Canvas for providing an advising syllabus, calendaring and posting announcements about internships, jobs, courses, important dates, events, club news, and scholarships. They suggest using the chat, video conferencing, and discussion functions to communicate with students online. Participants feared learning the new CMS, but hands-on training and informational sheets about Canvas functions helped them overcome their fear. The biggest strength of Canvas was that students chose how they received announcements, selecting Facebook, Twitter, text messaging, or e-mail. Another strength is that students instantly provided feedback and posed questions to the participants by sending messages on Canvas or through university e-mail. Academic advisors and faculty should consider how their universities' CMS could be used to advise students online.

#0388

Recycling Barrel & Roll Out the Rain Barrel Service-Learning Project

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Service-learning is a method of teaching and learning that integrates community service activities into academic curricula and expands the learning of students from the classroom to the community. The goal is to benefit both the community and the student. Service-learning gives hands-on experience to students and encourages students toward lifelong civic involvement. Recycling Barrel and Roll Out the Rain Barrel, a service learning project was incorporated into an introductory Soils course. The project focused on constructing recycling barrels for collection of recycling items and rain barrels to capture rainwater and then to use the water in the home landscape. Funding for the project came from a Kansas Clean Neighbor Grant with donations of 30- and 55-gal plastic barrels from Coca-Cola Enterprises. The recycling barrel recipients responded to a survey indicating that 46% are recycling 0-25% more, 27% are recycling 25-50% more and 96% see the relationship between recycling and reducing waste as it relates to water quality and water quality protection. Of the rain barrel recipients, 77% had installed their rain barrel within 1 month of the event and 72% had learned about water conservation from visiting with students and/or watershed staff during the event. Students wrote about their service-learning experience (94% believe they learned more participating in the service-learning project than writing a term paper on recycling and water conservation) and then shared their impressions with others in the class. Overall, students expressed their increased understanding of the course material and their feeling of contributing to the community.

2012 NACTA/DOCE Abstracts

#0389

Critical Evaluation of Sustainability Claims in Building Products

Treva Sprout Ahrenholtz
University of Wyoming

While technical content, historical perspectives and theory are important in the teaching of any course, their predominance can leave little time for thinking. When more emphasis is placed on what to think, rather than how to think, the opportunity for higher learning and true critical thinking is lost. With this observation in mind, a new upper division course, Green Design, was created at the University of Wyoming in 2008. As the building industry attempts to move towards greater sustainability, much “green-washing” results as products vie for market share. However, for a product to be truly sustainable, the economic and social considerations cannot be sacrificed, and often are as environmental considerations are overemphasized. Using ASTM E-2129, Standard Practice for Data Collection for Sustainability Assessment of Building Products, as a guide, students learn how to evaluate a product in a calculated manner to rate its true sustainability. Most products evaluated didn’t rate as truly sustainable. Additional thought provoking assignments that foster good “habits of thinking” include debate forums on topics such as human responsibility for climate change, critical research of environmental illnesses, and examination of politically charged concepts and their influence on public policy. Because the course is framed primarily on dialogue, students are removed from focusing on memorization of facts, and free to think, debate, and discuss. The work submitted has been more objective and intelligent than in any other class taught by this instructor, and focusing primarily on teaching students how to think, rather than what to think is recommended.

#0391

Celebrating and Sustaining Honors and Agriculture

Timothy J. Nichols
South Dakota State University

While South Dakota State University is a land grant institution with a significant enrollment of agriculture students, traditionally, very few of these have pursued the Honors College curriculum and graduated with Honors College distinction. As a complex system, agriculture provides an ideal framework for critical thinking and multidisciplinary analysis – approaches that are foundational to Honors pedagogy. This session will provide an overview of an initiative at SDSU designed to expand enrollment and build Honors College programming for students and faculty around issues related to agriculture. Program components include a colloquium on Agriculture, Food and Society; service learning efforts aimed at reducing local hunger; an Honors in Agriculture undergraduate research initiative, and curriculum development efforts which have included revision of agriculture courses for integration of honors experiences, and revision of general education courses for more content about food and agriculture. Examining sometimes controversial ethical issues in agriculture from multiple perspectives has been present throughout project programming. Faculty development has involved long-time Honors faculty, as well as agriculture faculty without previous experience in Honors. Student and faculty perspectives and early assessment results indicating increasing levels of student engagement, satisfaction, and higher order learning outcomes will be shared.

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Assessing Critical Thinking and Communication Skills of Undergraduate Research Interns in Sustainable Agriculture

L. E Marsh, F. M Hashem, C. P Cotton and A.L Allen
University of Maryland Eastern Shore

A team of faculty has served as research mentors for an 1890 Capacity Building grant aimed at enhancing the critical thinking and communication skills of undergraduate students majoring in agriculture. The project paired students with researchers who guided them in developing and implementing sustainable agriculture research projects. A rubric was developed to assess the student learning outcomes and to demonstrate advanced levels of critical thinking in planning, conducting, and communicating the research findings. This instrument was designed to align selected outcomes for critical thinking and communication skills with three levels of proficiency; with "proficient" as the desired level. Embedded in each proficiency level for each outcome was an expected critical thinking level for observing, analyzing, or applying phase. The outcomes included identification of the research problem, writing hypotheses, conducting a literature review, setting up an experiment, collecting and managing data, developing a written research document and making oral presentations on their research. Within the past 18 months, eight interns were mentored on projects that include: vermicomposting, poultry waste usage, microorganisms use in crop production, cover crop development, and transport mechanisms of urea in soils. For the overall seven outcomes, 29% of the interns have progressed to the intermediate level and 55% to the advanced level of proficiency. This is compared with 2, 20 and 78% at advanced, intermediate and beginning proficiency levels, respectively at the start of the internship. Assessments of these skills are ongoing. We will continue using this rubric to measure the students' skills as this project progresses.

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