

# Paper ABSTRACT BOOK

19<sup>th</sup> Annual  
Research Symposium



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## **Effects of Conscientiousness and Openness to Experience on Academic Performance**

**Bashir Abdullah and Dr. Mark Hamlin**  
**Department of Psychology**  
**McNair Scholar from University of Central Oklahoma**  
**Subject Area: Social Sciences**

The purpose of this study is to examine the relationship between Conscientiousness and openness to experience on academic performance. Participants completed an instrument on conscientiousness, openness to experience, and academic performance. The proposed hypothesis is that the higher level of conscientiousness and openness to experience is linked to a higher academic performance history. The researcher surveyed students attending a mid-size university in the Midwest. The study had 153 participants, 42(25.5%) were male and 111 (72.5%) were female. Analysis showed a statistically significant correlation between conscientiousness and academic performance. Further research is needed to devise ways of increasing conscientiousness and openness to experience.

## **Investigation of Sexual Dimorphism in the Human Sternum for use in Forensic Anthropology**

**Temperance Acquistapace and Jaime Oeberst, Ph.D.**  
**McNair Scholars Program**  
**McNair Scholar from Wichita State University**  
**Subject Area: Biological Sciences**

This investigation was based on the use of sexual dimorphism within the field of forensic anthropology. The science of forensic anthropology includes the positive identification of human remains using the skeletal features on remains recovered. There are only a few bones within the human skeleton that can stand alone in the identification process; there is a need to increase that number. The hypothesis for this study is that there is appreciable sexual dimorphism within the human sternum. This investigation was accomplished by extended literary research, using not only information found within the field of physical/forensic anthropology, but also using many other associated fields. There have been few studies done on the sexual dimorphism of the human sternum. These studies have shown positive results in the use of the sternum and its features for identification of forensic human remains. The studies done on the sexual dimorphism of the human sternum to date have used the measurements designed by Ashley (1956), along with other extending factors, such as the development of the sternal rib ends, and clavicle development. The sternum could be used alone in the forensic process if the measurements designed by Ashley (1956) were modified to include more length, width, and depth measurements, as well as including the depth of the sternal angle. In conclusion, after researching this subject extensively, it has been determined that there is a need for more research in this area for forensic anthropology, as well as for the use in comparative anatomy studies.

## **Can Democracy Promote Peace in the Middle East?**

**Oyeyemi Adeyiga and Dr. Kenneth Kickham**  
**Department of Political Science**  
**McNair Scholar from University of Central Oklahoma**  
**Subject Area: Social Sciences**

This work looks into the issue of democracy and peace in the Middle East. The research approaches the study by looking at factors that promote Islamic resurgence and how this revivalism of Islamic movements hinders democratization and peace processes in the greater Middle East.

## **High Prevalence of Low Serum 25-OH Vitamin D Concentrations in Women of Child-bearing Age in Jordan During Summer**

**Muna Algharibeh and Barbara J Stoecker**  
**Department of Nutritional Sciences**  
**Oklahoma State University**  
**Subject Area: Biomedical Sciences**

Serum 25-(OH) Vitamin D [25(OH)D] was assessed in 93 women of child bearing age in Jordan in July 2007. Mean age (SD) was 34.0 (6.0) and body mass index (BMI) was 29.6 (15.2) with 77% of women having BMI < 25 kg/m<sup>2</sup>. Mean concentration of 25(OH)D was 25.6 (9.6) nmol/L. Only two women (2.2%) had 25(OH)D concentrations < 12.5 nmol/L but 71 (76.3%) of the women had values between 12.5 and 30 nmol/L. Twenty-one percent of the women had 25(OH)D values between 30 and 75 nmol/L but no women had values above 75 nmol/L. In this sample, 86% of the women wore clothing that exposed only their face and hands, but dress style had no significant effect on 25(OH)D concentrations. Only 7 women reported taking supplements that might include vitamin D. Despite the abundant sunlight in Jordan during summer, vitamin D inadequacy was highly prevalent in women of child-bearing age.

## **Effect of Anti-Schizophrenia Drug Clozapine on a *Drosophila melanogaster* Model of Schizophrenia**

Shaymaa Alrikabi and Dr. Douglas Ruden  
**Department of Biology**  
**McNair Scholar from Wayne State University**  
**Subject Area: Biological Sciences**

Schizophrenia is a chronic, severe, and disabling brain disorder that affects more than 2 million Americans. Fifty percent of people in hospital psychiatric care have schizophrenia. Symptoms can include hallucinations, delusions and disorganized thinking. In this research, I used a *Drosophila melanogaster* mutant strain *sluggish-A (slgA)* as a fruit fly model for schizophrenia. This fly model has a deleted gene that encodes proline dehydrogenase (PRODH). In humans, PRODH is localized at chromosome 22q11 in a region that is often deleted in psychiatric patients with schizophrenia or bipolar disease. Our goal in this research is to determine whether the antipsychotic drug Clozapine will correct the defect in the PRODH mutant flies and to use *slgA* as a model for some aspects of schizophrenia drug therapy.

## **United States Food Aid: An Empirical Study of Public Law 480 II**

**Alexander Anderson**  
**Department of Political Science**  
**McNair Scholar from Harding University**  
**Subject Area: Social Sciences**

The end of Cold War hostilities initiated several United States foreign policy changes. One post Cold-War modification may have been United States administration of food aid. Public Law 480 II is a food aid program which has possibly been affected by changes in United States foreign policy. This research project is a study of possible developing affects which current administration of Public Law 480 II food aid may have on recipient nation-states.

To facilitate this study, an overall research question and hypothesis were developed. Are current reasons for donating food aid to recipient nation-state aligned with the goals described by the United States Congress when the Public Law 480 II food aid program was first enacted? It is hypothesized that the reasons for endowing Public Law 480 II food aid is no longer consistent with Congress's original intentions.

In order to identify any new changes in motives, this research project is used to examine indications of food aid effectiveness in recipient nation-states. A randomly selected group of fifteen recipient nation-states was compared to another randomly selected group of fifteen non-recipient nation-states. Twelve research questions were raised and thirteen sub-hypotheses were tested in order to show the affect Public Law 480 II

food aid may have on recipient nation-states over a time period. This was then compared with the function of non-recipient nation-states over the same period of time.

The findings indicate that the food aid is, for the most part, having no adverse effects in recipient nation-states compared to non-recipient nation-states. This suggests that foreign policy ends to be achieved by the of Public Law 480 food aid program are still consistent with those ends originally stated by Congress.

## **Effects of Field Experience Encounters on Preservice Teachers' Self-Efficacy**

**Melinda Anderson and Dr. Kathy Brown**  
**Department of Elem Education**  
**McNair Scholar from University of Central Oklahoma**  
**Subject Area: Education**

The purpose of this study is to investigate the possible correlation between self-efficacy and field experience encounters of preservice teachers. The researcher hypothesizes that the field experiences encountered will play a vital role in the preservice teachers' sense of self-efficacy.

## **Strain Identification of *Pseudomonas syringae* Using Repeat Markers: A Whole Genome Multi-locus Approach**

**Christy Baker, Carol Bender, Ulrich Melcher, and Jacqueline Fletcher**  
**Department of Entomology & Plant Pathology**  
**Oklahoma State University**  
**Subject Area: Biological Sciences**

Agriculture is economically important, and US crops are vulnerable to introduction of pathogens. *Pseudomonas syringae* pv. tomato DC3000 (Pst DC3000) is a gram-negative plant pathogenic bacterium that causes bacterial speck of tomato. *P. syringae* shares survival and virulence mechanisms with pathogens that are currently on the USDA APHIS select agent list, but is a model pathogen that can easily be utilized without biocontainment facilities. Related studies demonstrated that repeat loci, which are found throughout bacterial genomes, were useful for rapid and reliable strain identification in other organisms. In the current study, primers for 5 repeat loci were used to amplify products by polymerase chain reaction (PCR) from a collection of diverse pv. tomato isolates. These loci were able to distinguish among some strains, and represent a promising molecular tool for tracing bacterial outbreaks and dissemination, as well as studying population structure and diversity.

## **Theodore Roosevelt, Politics, and the Medal of Honor**

**William Ballou**  
**Department of History**  
**Oklahoma State University**  
**Subject Area: Humanities**

The paper addresses the issues of Theodore Roosevelt's nomination for the Medal of Honor for his part in the Battle of San Juan Heights on July 1, 1898 just outside of Santiago de Cuba during the Spanish-American War. The paper briefly explores Roosevelt's early life including his family and his early education as well as his ranching in the Dakotas and his early political life. The paper goes into the details of the Santiago Campaign, Roosevelt's part in the battles, the politics surrounding his Medal of Honor recommendation, and the eventual awarding of Roosevelt's Medal of Honor posthumously in 2001. The paper highlights the details of the politics of the Round Robin Letter and the feud between Roosevelt and Secretary of War Alger.

## **The Relationship among Social, Emotional, Cultural, and Communicative Competence in Predicting Social Adaptability of International College Students in the US**

**Hyeyoung Bang and Dr. Steve Edwards**  
**Department of Educational Psychology**  
**Oklahoma State University**  
**Subject Area: Education**

Many studies have shown that international students encounter many challenges in everyday life. This study attempted to look at international students' intrapersonal factors which increase their emotional and social well-being. International students' cultural, emotional, social, and communicative competence levels were measured with a 5-point Likert scale to predict social adaptation. Coefficient alphas show high internal consistency of the measurement used in this study. 83 international students in a Midwest university participated in the study. Correlations between competence factors are high and strongly correlated with dependent variable which is social adaptation. Regression analysis shows that 70 percent of variance in international students' social adaptation is accounted for by their competence levels. More culturally, emotionally, and socially competent international students with communicative skills are more likely to adapt socially. The result may give insight to psychologists, higher educators, and the student development personnel for their understanding of international students' emotional and social well-being.

## **The Effects of Different Music Genres on Children With Autism**

**Janice Barnett and Dr. Barbara Green**  
**Department of Family Life Education**  
**McNair Scholar from University of Central Oklahoma**  
**Subject Area: Social Sciences**

This study sought to determine how music effects children with autism. Observations were made of three children with autism. The music was played while the children played in their classroom and the researcher observed and recorded their body movements, facial expressions, verbalizations, and interactions.

## **Job Satisfaction among Presidential Assistants in Higher Education**

**Larry Shawn Bassham and Lihua Xu**  
**College of Education**  
**Oklahoma State University**  
**Subject Area: Education**

Interested in the implications of an imposed change, such as a presidential transition, on higher education the qualitative study examined administrators, professors and staff. From that particular study a new interest became a focus. Intrigued in the intensity of the impact the imposed change had on individuals of proximity to the President, e.g. Vice-presidents, Provost and other direct line directors. Further inquiry of presidential transitions was seen as a need within the Office of the President, specifically the presidential assistant.

The purpose of this study is to examine the impact of presidential transitions on presidential assistants. Specifically, job satisfaction among presidential assistants will be examined to determine the significant differences between presidential assistants who have not experienced a presidential transition and those who have experienced a presidential transition.

Spector (1997) points out some important reasons for the use of job satisfaction. First, people deserve to be treated fairly. Job satisfaction can reflect organizational treatment. Second, there are important implications of employee feelings which affect productivity within the organization. Job satisfaction can discover the behavior of employees that affects the organizational functions. Third, job satisfaction can be a reflection of organizational functioning.

This is the only known study of individual impact of change in higher education on the office of the president. The study will shed light on the impact individuals experience through imposed changes. Future studies will be developed through the knowledge base of this study.

## **Nelcuilolli: A Revisionist Approach to Indigenous Epistemological Writing Systems of Anahuac**

**David Becraft**  
**Department of Anthropology**  
**McNair Scholar from Southern Oregon University**  
**Subject Area: Social Sciences**

The following research is intended to describe and raise some interesting questions about Mesoamerican writing, specifically the Anahuac system of Central-Mexico. This research is based on the theories of Geoffrey Sampson and the teachings of David Charles Wright. The investigation has shown a contrasting postulation to the theory of the evolution of writing as espoused by I. J. Gelb in regards to Mesoamerican writing. Terms such as "pictograph", "ideograph", "hieroglyph" and "glyph" are ambiguous terms that do not clearly explain the type of writing that existed in Anahuac; emic-appropriate categories will be used here instead. The research has concluded that Mesoamerican writing did not go through the evolutionary stages as theorized by I. J. Gelb and that in fact, Anahuac writing was created independently and without Near Eastern influence. Analysis focuses on the wider cultural context of which Anahuac writing was a part. Nahua, Nudzahui, Zapotec, and Maya writing were primarily mixed systems consisting of semasiographic and glottographic writing. Two principles are shown to dominate Mesoamerican writing: the memorization of visual images/symbols and the memorization of related oral traditions. These two principles complemented and reinforced the other.

## **On Learning Critical-Thinking From an Idiot**

**Bradley Bellatti**  
**Department of English**  
**Oklahoma State University**  
**Subject Area: Humanities**

More and more these days the word idiot gets thrown around quite loosely. Whether it is the need to "cure" idiocy through improved education programs, or whether it is simply used as a derogatory term. Yet, many people who identify idiots as lacking in critical-thinking skills are merely inferring that idiot's ability to behave rationally is somehow limited. Upon making this identification they are, in effect, valuing rationality above irrationality. But, what are the more serious consequences of this ideological acceptance of the goodness of rationality and rhetorical skills on America's conception of common sense? Moreover, a like Frasier, which is structured in such a way to create laughs over intellectualism, illustrates that a non-normative cognitive capacity is a safe topic of ridicule within American culture. If one were to examine news networks and entertainment shows alike, they might be struck to see the ways in which rationality works to oppress creativity and difference by rejecting both the idiot and the intellectual. Rationality, in the hands of the non-idiots, has become a dominating and severely ignored issue within American mass media. This paper asks who the real idiots are and what are the stakes of a seemingly harmless preoccupation with rationality?

## **Fixed or Flexible: The Effect of Negative Feedback on One's Religious Identity**

**Erika Brown**  
**Department of Psychology**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

The purpose of this study was to investigate the effect of negative feedback on self-reported religious identity among Christian students. After initially rating themselves on a computer-administered continuous scale ranging from "as religious as possible" to "not at all religious", participants completed a difficult Bible trivia quiz and received negative feedback regarding their performance. The participants were then made to believe that their initial computer ratings had been lost, and were asked to rate themselves a second time. Individuals also completed the Spiritual Involvement and Beliefs Scale and were divided into high and low religiosity groups. Statistical analyses revealed that participants were consistent in their pre- and post-ratings despite the negative feedback on the quiz; low and high religiosity groups were equally consistent. The results therefore suggest that self-reported religiosity is a resilient construct. Given the low level of statistical power of this study, however, more research is needed before more definitive conclusions can be drawn.

## **Producing a Consumer Acceptable Product from Off-flavor Catfish**

**Teresa Brown and Dr. Christina A Mireles Dewitt**  
**Department of Animal Science**  
**Oklahoma State University**  
**Subject Area: Whiteman Award Presentation**

The objective of this research was to determine whether catfish could be further processed to remove muddy off-flavors caused by 2-methylisoborneol and geosmin. Two pound farm-raised catfish were transferred into three tanks of water. Treatments included: control, 1 ppb MIB, 1 ppb geosmin. Fillets were collect from each group and ground. A portion of fillets were kept and labeled as 'non-processed'. The remaining portion of ground fillet was solubilized to pH 2.5. The filtrate was collected and adjusted to a final pH 5.5. Precipitated protein was collected and labeled 'processed'. Protein collected from each treatment will be evaluated for MIB, geosmin and proximate composition. An acceptance consumer panel will be conducted on catfish nuggets formulated with protein from each treatment. Results from this study

should demonstrate the acceptability of a product formulated with 'processed' protein and determine whether processing removes muddy off-flavors sufficiently to produce a consumer acceptable product.

## **Gagged into Division: How the Congressional "Gag Rule" Split the Democratic Party, 1836-1844**

**Kristen Burton**  
**Department of History**  
**Oklahoma State University**  
**Subject Area: Humanities**

Typically overlooked in many studies, this paper examines the role and resulting affects of the 'gag rule' in the House of Representatives. In effect from 1836-1844, the Congressional gag rule prevented the discussion of anti-slavery petitions by placing all such documents immediately 'on the table,' where they were promptly ignored. By essentially denying the abolitionists their Constitutional right to petition, the anti-slavery movement was motivated into greater organization in their quest to end the institution of slavery. While the gag rule initially received most of its support from the Democratic party, the voting results for the gag's repeal indicate clear fractions in the party caused by the gag, as over 75% of the Northern Democrats voted against it. This study looks into the resulting affect of the gag rule on the splintering of the Democratic Party, as well as the abolitionists' fight with Congress.

## **Cognitive Differences Between Genders Before and After Engaging in Video Game Play**

**Amy Cavner and Dr. Mark Hamlin**  
**Department of Psychology**  
**McNair Scholar from University of Central Oklahoma**  
**Subject Area: Social Sciences**

This study looks at Csikszentimihalyi's Flow Theory and how it can play a part in cognitive disruption. Participants took a pre-test, play a video game to achieve flow and then took a post-test. The test scores were then compared to see if there was a difference in scores between genders.

## **Evaluation of a high pH solution as an alternative to phosphate for meat enhancement**

**Claudia Cerruto, Deborah VanOverbeke, and Christina A. Mireles DeWitt**  
**Department of Animal Science**  
**Oklahoma State University**  
**Subject Area: Biomedical Sciences**

Paired beef strip loins USDA Select, aged 2 days, were enhanced with either a high pH solution containing 3.6% sodium chloride, 1% Herbalox seasoning, and adjusted to pH 10 with ammonium hydroxide (~0.1%, FFC grade); or a phosphate based solution having 3.6% sodium chloride, 1% Herbalox seasoning, and 4.5% sodium tripolyphosphate. Steaks were evaluated over 14 days under retail conditions. Composition of steaks differed only in protein content ( $p < 0.05$ ), where phosphate enhanced steaks were ~2% lower. Phosphate enhanced steaks performed better than ammonium hydroxide treatment in all quality parameters measured except for controlling microbial growth, which was significantly lower ( $P < 0.05$ ) for aerobic and anaerobic plate counts. These data demonstrated that adjusting the enhancement solution with ammonia hydroxide to pH 10 is effective in controlling bacterial growth, generating higher yields, increasing water holding capacity, reducing protein loss, and improving tenderness and juiciness in beef steaks.

## **Towards a better understanding of young adults and their smoking behavior.**

**Garrett Coble**  
**Department of Marketing**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

This study examined a major phenomenon, the transition from adolescence to adulthood. In order to better understand the transition and its effect on risk behaviors, surveys funded by a Department of Health Office of Tobacco Use were taken of young adults between the ages of 18-24. Results from those surveys brought to light several important findings. Characteristics of adolescents that led some to smoke were analyzed, and findings supported previous literature. Characteristics consistent with young adults who quit smoking and other characteristics of those who started smoking were also found. Results suggest that young adults can be broken into segments by activities in which they are involved in so that public policy makers can make more efficient use of their effects to combat tobacco use.

## **Using Cooperative Group Strategies in Reading and Writing Stories**

**Patricia Cole**  
**Department of Education**  
**Oklahoma State University**  
**Subject Area: Education**

The purpose of this study is to analyze the cooperative learning group's achievement when a social skills approach is taught. After cooperative group strategies are taught, the groups will use these traits in the reading and writing of stories. The groups will be given a beginning and middle of certain stories from the researcher. Students will write an appropriate ending for the story. Each group member will have a designated job in the cooperative group setting.

The research groups will be taught by the researcher, the strategy called Share Ideas, Compliment Others, Offer Help or Encouragement, Recommend Changes Nicely, and Exercise Self-Control or (SCORE) concept introduced by Vernon & Schumaker in 1995. The final product or story will be presented and each group will evaluate their work and assign a grade to the group. Survey questions, interviews, and observations will be used in conducting this research.

## **Professional Enculturation of Faculty and Administration in Higher Education**

**Austin Conner and Dr. Sion Honea**  
**Department of Accounting**  
**McNair Scholar from University of Central Oklahoma**  
**Subject Area: Education**

The purpose of this study was to determine whether attitudes exist regarding the relative value of the academic activities of "research", "scholarship" and "creativity". This was determined by administering a survey to faculty and administrators which sought to determine whether a correlation existed between the respondents' academic position and background discipline.

## **Directed assembly and characterization of composite Hydroxyapatite-Tri-Calcium Phosphate (HA-TCP) scaffolds with designed pore distribution for controlled solubility**

**Cornelia Cretiu Vasiliu, Elizabeth Clark, Michelle Gurfinkel, John L. Ricci, James E. Smay**  
**Department of Chemical Engineering**  
**Oklahoma State University**  
**Subject Area: Biomedical Sciences**

Concentrated (45 v/o), aqueous colloidal gel ink for extrusion-based direct writing was formulated with mixtures (15:85, 60:40) of processed commercial HA and TCP powders. Disk samples (diam. 11mm X 3mm) with a lattice of 250µm diameter rods in a periodic, open pore network were printed and sintered at 1100°C/ 4h. The empty pores control set and two test groups (filled respectively with 2.4% Chitosan, Calcium Sulfate(CaS)) were immersed in simulated body fluid and weighed every three days.

Empty, HA rich (60:40) scaffolds decreased in weight for 14-16 days and stabilized at 10% weight loss. Empty, TCP rich (15:85) scaffolds decreased in weight for 52 days showing 24.5% total weight loss, but a slowing of weight loss rate after 7 and 48 days. CaS-filled scaffolds decreased in weight mainly due to CaS filling dissolution. In contrast, chitosan filled samples showed minimal weight loss, attributed to shielding by the chitosan.

## **How Do Feelings Towards Blood Quantum Affect Partner Selection Among American Indians?**

**Cinda Dailey and Dr. Patricia Loughlin**  
**Department of Sociology**  
**McNair Scholar from University of Central Oklahoma**  
**Subject Area: Social Sciences**

The purpose of this study was to investigate how opinions of blood quantum influence an individual's likelihood of selecting a partner of Indian descent. The researcher hypothesized that the feelings one has about blood quantum would significantly affect an individual's likelihood of selecting a partner of Indian descent.

## **Cultural Swarm for Multiobjective Optimization Problems**

**Moayed Daneshyari and Gary G. Yen**  
**Department of Electrical and Computer Engineering**  
**Oklahoma State University**  
**Subject Area: Physical Sciences & Technology**

Multiobjective particle swarm optimization algorithms (MOPSO) have been widely used to solve multiobjective optimization problems. Most of MOPSOs use fixed momentum and acceleration for all particles throughout the evolutionary process. In this study, we introduce a cultural framework to adapt the flight parameters of the MOPSO namely momentum, personal, and global acceleration for each individual particle based upon the various types of knowledge in belief space, specifically situational knowledge, normative knowledge, and topographical knowledge. Movement of the particles using the adapted parameters helps the MOPSO to perform efficiently and effectively in multiobjective optimization.

## **Hope as a Predictor of Suicide Risk**

**Collin Davidson and LaRicka R. Wingate**  
**Department of Psychology**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

Joiner proposed a theory of suicide that holds that risk is composed of (1) belongingness, (2) burdensomeness, and (3) acquired capability to commit suicide. People who successfully complete suicide often have low belongingness, high burdensomeness, and high acquired ability to commit suicide. In addition to identifying risk factors, it is important to identify factors which buffer individuals from suicide. One such factor is Hope Theory. Hope is composed of the related elements of goals, pathways (strategies to achieve goals), and agency (motivation to achieve goals). There is a lack of research investigating to role of hope in suicidal behaviors. The current study investigated the relationships between hope and Joiner's theory of suicide. Results indicated that hope scores and each of the subscale scores (goals, pathways, and agency) significantly predicted burdensomeness and belongingness scores. Results also indicated that scores on hope, goals, and pathways positively predicted acquired capability for suicide.

## **The Latinos of Tulsa: Their Place in Space and Patterns of Migration.**

**Samuel Dent**  
**Department of Geography**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

The proposed study has been constructed in partial fulfillment for a Masters of Science in Geography. The study focuses on two issues concerning the Latino population of Tulsa, Oklahoma. First, patterns of migration are explored through a surveyed sample of Latinos living in Tulsa. Next, the place of Latinos within Tulsa's business and cultural landscape is described. The majority of the data used in the study derives from on site interviews with Latinos living in Tulsa and also leaders within the Latino community.

## **The Effects of the Death of a Parent on Biological Children**

**Joi Douglass and Dr. Patricia Loughlin**  
**Department of Family Life Education**  
**McNair Scholar from University of Central Oklahoma**  
**Subject Area: Social Sciences**

The purpose of this study was to gather information about the effects parental death has on children so we can provide better services to support families. In this study, the main source of gathering data was intensive interviews of the parents on their perceptions of how death has affected their child/children.

## **The Rise of Kurdish Nationalism and Territoriality in Iraq and Turkey between World Wars**

**Whitney Durham**  
**Department of Geography**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

This paper examines the rise of Kurdish nationalism and territoriality between world wars. This is a political geographical analysis set in the context of the 1920 Treaty of Sèvres, the breakup of the Ottoman Empire, and subsequent British and Turkish geopolitical policies regarding the Kurds and Kurdistan.

## **Literacy Development in Early Childhood: A Case Study of a Kindergarten Student**

**Soha Elfeel**  
**Department of Curriculum and Instruction**  
**Oklahoma State University**  
**Subject Area: Education**

This teacher research focuses on literacy development in bilingual children through the case study of my daughter (kindergartner), Magi (pseudonym). For data collection, I used Magi's work, teacher and STAR Literacy Assessment reports. For data analysis, I used the shadow and making meaning protocols as well as qualitative content analysis. For data interpretation, I examined available data while keeping an eye on Magi's personality traits and sociocultural background to interpret her attitude toward reading and writing within the context of literature review on early literacy development. I seek to answer these questions: How could we facilitate the shift from an emergent to a beginner reader level in Magi's case? How accurate are STAR Early Literacy Assessment tools as compared to teachers' assessment in this case study? Which classroom practices helped in developing Magi's concepts about print? Is the development of literacy skills sequential? What is the sequence of development?

## **Differences in the Associations of Parenting Practices with Childrens and Teachers Perceptions of Peer Acceptance**

**Paul Emrich, Keti Danelia, Lonnie Manuel, and Laura Hubbs-Tait**  
**Department of Human Development and Family Science**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

This study investigated links between parenting practices with children's perceptions of peer acceptance and teachers' perceptions of children's peer acceptance. Participants included 73 mothers and children enrolled in a rural Head Start program. Data were gathered at multiple times from mothers, children, and teachers from the child's Head Start year through first grade. Parents' use of physical restraint and verbal commands with children were associated with children's and teachers' perceptions of peer acceptance. Specifically, mothers' use of physical restraint was negatively related to sons' perception of peer acceptance, positively related to daughters' perception of peer acceptance, and negatively related to teachers' perceptions of girls' peer acceptance. In addition, the more mothers used verbal commands towards daughters, the higher the daughters' perceptions of peer acceptance and the lower the teachers' perception of the girls' peer acceptance.

## **Ethnic Identity Development in Multiethnic Individuals**

**Jessica Fleming**  
**Department of Psychology**  
**McNair Scholar from University of Kansas**  
**Subject Area: Humanities**

The current research attempts to develop a better understanding of the similarities and differences in ethnic identity development as it relates to multiethnic individuals when compared to the ethnic identity development of individuals belonging exclusively to either the majority or a minority group.

## **Through A Splintered Looking Glass: Defining the Bengali Babu**

**Sayanti Ganguly**  
**Department of English**  
**Oklahoma State University**  
**Subject Area: Humanities**

Britain's colonization of India produced a subversive Western influence among upper class Indian men. These men, adopting the decadent lifestyle and aesthetics of the Restoration rakes, are called 'babus' and

appear throughout nineteenth-century colonial Calcutta in the guises of world wise libertines, wholly depraved fools, or as a hodgepodge of both types. Under the British Raj, many of these educated and upper-class young men clearly mimicked the English rakes in an effort to appear cultured and to cast away the traditional restraints of their positions. In fact, the babus' with their money-minded marriages to repair ruined estates, copious extramarital affairs, and heady indulgence in any number of vices rival the English rakes in abandon. The paper explores the many startling resemblances between the lifestyles and aesthetics of the Restoration rakes and the babus. It illustrates how colonialism served to solidify this causal relationship within the cultural milieu of the era.

## **Green Supply Chains and the American Consumer**

**Michael Gonzales**  
**McNair Scholars Program**  
**McNair Scholar from Texas Christian University**  
**Subject Area: Environmental Sciences**

This research will discuss the trends in greener supply chains in the retail industry as well as present information about the green consumer.

## **IGF-I dependent gene expression in cultured porcine granulosa cells**

**Juan Alberto Grado-Ahuir, P. Y. Aad, L. Hulsey, D. Lagaly, L. J. Spicer**  
**Department of Animal Science**  
**Oklahoma State University**  
**Subject Area: Whiteman Award Presentation**

To characterize the IGF-I regulated genes in FSH-treated porcine ovarian granulosa cells, a microarray experiment was performed with Affimetrix Porcine GeneChips. Abundance of mRNA for differentially expressed (IGF-I vs. control) genes was determined through one-step real-time RT-PCR. Of 388 sequences that were differentially expressed, 31 matched annotated genes in the UniGene database. Six genes were selected for further analysis: Serotonin 2B receptor, FGF receptor 2 III c (FGFR2c), and frizzled 8, (1.34, 1.32, and 1.22 fold change relative to the baseline, respectively); thrombospondin 1 (THBS1), contactin 4, and integrin beta 8, (-1.91, -1.74, and -1.41 fold change, respectively). Expression patterns for six genes detected as up- and down-regulated by IGF-I in the microarray analysis were consistent with the quantitative RT-PCR analysis for only FGFR2c and THBS1. The role of FGFR2c and THBS1 on granulosa cell steroidogenesis and proliferation during follicular development will require further study.

## **Dimension Reduction in the Study of the Genetics of Gene Expression**

**Qiang Guo, Kathy Hanford, and Stephanie A. Monks**  
**Department of Statistics**  
**Oklahoma State University**  
**Subject Area: Physical Sciences & Technology**

Several groups have suggested a novel approach for combining many types of genomics information, like genetic marker data and gene expression from microarrays, in order to better understand the underlying causes of disease. One of the challenges of such an approach is how to study genetics of a vast set of highly interrelated measures which likely represent a much smaller set of truly meaningful responses. The objective of this study is to investigate the results of linkage tests conducted on the components derived from large-scale gene expression data by several statistical dimension reduction methods, such as principal components, partial least squares, and non-negative matrix factorization. These methods were each applied to a dataset containing 45101 expression phenotypes from a sample of 84 M16xICR F2 mice. Linkage tests were performed on the components from each dimension reduction method, and identified QTLs were compared to the analysis results without dimension reduction.

## **Optimizing a three-dimensional tissue model for the production of dendritic cells.**

**Renee Hale and Heather Fahlenkamp**  
**Department of Chemical Engineering**  
**Oklahoma State University**  
**Subject Area: Biomedical Sciences**

Large quantities of functional dendritic cells (DCs) are vitally important for the research and treatment of several diseases, and this research explored a 3-D tissue model that is quickly becoming a viable alternative to other time-consuming methods of deriving DCs. This project tested two variables, size and number of DC precursor cells (PBMCs) added, to determine which model produced the highest number of DCs while incurring the least amount of damage. Models tested with the higher number of PBMCs produced higher numbers of DCs than the other models. Also, the smallest format typically generated the highest number of DCs per area, regardless of the number of PBMCs added. Since two variations of the model produced similar results, a cost analysis was used to determine that the smallest format with the high number of PBMCs was the optimal model.

## **Current Trends in Muscle Dysmorphic Research**

**William Hale and Matt Vassar, Ph.D.**  
**Department of Health & Human Performance**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

Muscle dysmorphia (MD) has recently emerged as a form of body dysmorphia where symptoms include dissatisfaction with current muscular appearance and the perception of small stature, despite the actual mesomorphic physique of these individuals. Individuals exhibiting symptoms of MD are likely to engage in risky health behaviors, such as excessive exercise, overeating, or taking anabolic steroids (Pope et al., 1997).

The rise for concern of MD is reflected in the literature. Thompson and Cafri report an increase of articles with a focus on the muscular ideal increased 731% from 2000 to 2007 (2007). Muscle dysmorphia is not currently listed in the DSM-IV, however, researchers Muller et al. have proposed an exploration of MD to possible OCD tendencies (Muller et al., 2004). This presentation will serve as a report for current research being conducted on MD and future recommendations for research in MD.

## **Evaluation of Competition Amongst Turf Bermudagrasses During Establishment Phase**

**Holly Han, Dennis Martin, Greg Bell, Charles Taliaferro, Nathan Walker, and Yanqi Wu**  
**Department of Horticulture**  
**Oklahoma State University**  
**Subject Area: Environmental Sciences**

As improved turf-type bermudagrasses (*Cynodon* species) are established in golf or sports applications, their desirability can be compromised by the re-emergence of the previously existing turf stand. Patriot, TifSport (Tift 94) and Tifway (Tifton 419) interspecific hybrid bermudagrasses (*C. dactylon* X *C. transvaalensis*) were evaluated for their ability to compete against an aggressive locally adapted turf-type common bermudagrass (*C. dactylon* 'TGS U-3'). Newly sprigged plots of each variety were contaminated with three sprigs per plot of the contaminant TGS U-3. Colonization (percent living cover) of the plot by the designated cultivar and the contaminant was visually assessed using a 100 point grid. Patriot contained significantly higher cover on all dates than that of Tifway or TifSport. Findings from this establishment phase research suggest that, in Oklahoma, Patriot colonizes ground more rapidly, and more effectively competes against a localized aggressive common bermudagrass than either Tifway or TifSport.

## **Supply Chain Disruption Management with Responsive Pricing and Contingent Capacity**

**Sharethram Hariharan and Tieming Liu**  
**Department of Industrial Engineering and Management**  
**Oklahoma State University**  
**Subject Area: Physical Sciences & Technology**

We study the capacity investment and disruption management decisions for a firm selling two products with responsive pricing and contingent capacity. Contingent capacity is available to produce a product when its capacity is insufficient. We formulate the problem as a stochastic programming model, and characterize the structure of the optimal policy.

## **Method of Dietary Adaptation: Effects on Performance and Health of Steers Grown on a High-Concentrate, Program-Fed Diet**

**B. P. Holland<sup>1</sup>, C. R. Krehbiel<sup>1</sup>, D. L. Step<sup>2</sup>, and L. O. Burciaga-Robles<sup>1</sup>**  
**Department of Animal Science**  
**Oklahoma State University**  
**Subject Area: Whiteman Award Presentation**

Five hundred thirty-six steers (initial BW = 284 kg) originating from auction markets were blocked by arrival date and BW into 24 pens. Pens were fed using four methods of adaptation to a high-concentrate diet during a 60 d growing period. Treatment 1 included three diets with an increasing percentage of concentrate from 65% to 80% fed ad libitum during the first 21 d prior to feeding an 88% concentrate diet (TRAD). Steers in Treatment 2 were fed ad libitum the same 65% concentrate diet as in TRAD for the first 28 d, followed by adaptation to and feeding of the 88% concentrate diet (REC). Steers in Treatment 3 were fed similarly to TRAD; however, maximum feed intake was limited to 2.1, 2.3, and 2.5 times the arrival maintenance energy requirement for wk 1, 2, and 3, respectively (LMI). Steers in Treatment 4 were initially fed a restricted level of the 88% concentrate diet with daily increases in intake of 0.23 kg/d (PF). Steers in all treatments were fed the final diet at a level that targeted ADG at 1.13 kg/d. BW, ADG, and ratio of daily ME intake:ADG (MEG) did not differ among treatments for the first 22 d ( $P=0.58$ ; 0.41; 0.57, respectively). However, on d 43, REC steers had greater ( $P<0.01$ ) BW and ADG than TRAD, LMI, and PF steers. Day 60 BW tended ( $P=0.056$ ) to be greater for REC (352 kg) and TRAD (350 kg) steers than LMI (347) and PF (345 kg) steers. REC steers had the greatest ( $P<0.01$ ) daily ME intake and lowest ( $P=0.03$ ) MEG over the growing period. Bovine respiratory disease morbidity was greater ( $P=0.02$ ) for TRAD (45.9%) and PF (43.6%) than REC (34.0%) and LMI (29.6%). Lengthened feeding of a lower concentrate (65%) diet after arrival improved growth efficiency and decreased morbidity of high-risk steers.

Departments of Animal Science<sup>1</sup> and Veterinary Clinical Sciences<sup>2</sup>, Oklahoma State University

## **The Relationship of Adolescent Violence with Parenting Style and Victimization.**

**Aesha John and Ms. Cheryl Delk**  
**Department of Human Development and Family Science**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

Parenting and neighborhood factors are consistently linked to adolescent violence, theoretically and empirically. However, few studies have tried to explore the specific parenting style that would predict adolescent violence. Also, while disadvantaged neighborhoods and schools share a positive relationship with violence among youth, there is negligible literature on the mechanisms through which neighborhood factors get linked to violence. In this study, using the data from Wave 1 (1994-95) of the National Longitudinal Study of Adolescent Health (Add Health) public use dataset we looked at two things. First, the relationship between adolescent violence and autonomy granting parenting is assessed. Next, the links between victimization in the neighborhood and violence are examined. The findings indicate a strong and significant

relationship between victimization and adolescent violence. However, autonomy granting parenting failed to predict adolescent violence. The research found some gender and ethnicity based differences in these relationships.

## **Dry Thermal Resistance of Three Ballistic Materials**

**Panagiotis Kamenidis, An Su Kyoung, Uthkala Urubail, Huantian Cao, Semra Peksoz, Donna Branson**

**Department of Design, Housing, and Merchandising**

**Oklahoma State University**

**Subject Area: Environmental Sciences**

Military personnel operating in a hot dry environment such as the desert are susceptible to severe heat stress. Although there is an urgent need for body armor with improved comfort characteristics, limited information on thermal characteristics of ballistic material exists. This study determined the dry thermal resistance ( $R_{ct}$ ) of three ballistic materials commonly used to construct soft armor which uses multiple textile layers to achieve protection. Number of layers depends on type of material and desired protection level.  $R_{ct}$  was obtained on a sweating guarded hot plate using a modified ASTM F1868-02, due to thickness of the materials. Three samples of KM2 Kevlar, unidirectional Dyneema and unidirectional Spectra, were measured for one to fifty-six layers. Results for KM2 Kevlar showed a strong positive linear relationship between  $R_{ct}$  value and number of layers ( $R^2=0.993$ ). Dyneema and Spectra had a strong positive logarithmic relationship between the same variables ( $R^2=0.963$  and  $R^2=0.971$  respectively).

## **Discovery of a novel tetrapod life history: an annual chameleon living mostly as an egg**

**Kristopher Karsten, Laza N. Andriamandimbarisoa, Stanley F. Fox, and Christopher J. Raxworthy**

**Department of Zoology**

**Oklahoma State University**

**Subject Area: Biological Sciences**

The nearly 30,000 tetrapod species (four-limbed vertebrates) almost exclusively have perennial lifespans. Here, we report the discovery of a remarkable annual tetrapod from the arid southwest of Madagascar: the chameleon *Furcifer labordi*, with a post-hatching lifespan of just 4-5 months. At the start of the active season (November), an age-cohort of hatchlings emerges, without larger juveniles or adults. These hatchlings grow rapidly, reach sexual maturity in less than two months, and reproduce in January-February. After reproduction, senescence is apparent and the active season concludes with population-wide adult death. Consequently, during the dry season, developing eggs represent the entire population and incubate for 8-9 months before synchronously emerging at the onset of the following rainy season. Remarkably, this chameleon spends more of its short annual life cycle inside the egg than outside of it. Our review of tetrapod longevity (>1,700 species) finds no others with such a short life span.

## **A Variance Components Method to Test for Quantitative Trait Locus Heterogeneity among Multiple Ethnic Groups**

**Trecia Kippola, Karen L. Edwards, and Stephanie A. Monks**

**Department of Statistics**

**Oklahoma State University**

**Subject Area: Biomedical Sciences**

One in four Americans may be affected by metabolic syndrome (Ford et al. 2002). The prevalence of metabolic syndrome varies greatly among ethnic groups (Park et al. 2003). We wish to simultaneously investigate the etiology of metabolic syndrome among multiple ethnic groups using quantitative trait linkage

analysis methods. We propose a method, which is an extension of the variance components method suggested by Almasy and Blangero (1998). Our method can determine if there exists statistically significant heterogeneity among different ethnic groups, countries or geographic locations. We wish to determine whether or not linkage exists among at least one of several populations. Our test statistic is a likelihood ratio test statistic and will be applied to an existing data set consisting of genotype and metabolic syndrome phenotype data. Future work will include investigation via simulation of various statistical properties, such as power and Type I error rate, of our proposed method.

## **Virulence Analysis of Abiotic Surface-Adherent Strains of *Listeria monocytogenes* in Tissue Culture Assays**

**Kalpana Kushwaha and Peter Muriana**

**Department of Animal Science**

**Oklahoma State University**

**Presentation Subject Area: Whiteman Award Presentation**

*Listeria monocytogenes* is a facultative intracellular Gram-positive bacterium causing foodborne illness (listeriosis) in humans. Recently, we developed a microplate adherence assay identifying strong and weak adherence to abiotic surfaces in strains of *L. monocytogenes* isolated from raw and RTE meats and environmental samples in RTE meat processing facilities. Since cellular adherence is the first stage of infection with *L. monocytogenes*, we were interested to see whether the strong adherence observed with abiotic surfaces would also facilitate cellular adherence and aid virulence. Our objectives were to examine the virulence characteristics of these strains using tissue culture adherence and invasion assays. Several strong (CW50, 99-38, CW62 and CW77) and weak (CW34, CW35, CW52 and SM3) adherent strains of *L. monocytogenes* were selected for adherence and invasion assays with the Caco-2 cell line. Cell monolayers were inoculated with bacterial suspension adjusted to obtain an MOI of ~100 bacteria per cell. Duplicate monolayers were infected with bacterial culture and incubated for 2 hrs. Nonadherent bacteria were then removed by washing 3x with EMEM. Total associated bacteria were determined by lysing monolayer cells with 1 ml of 1% (v/v) Triton X-100 for 5 min and enumeration on TSA plates. For invasion assays, gentamicin-containing (1000 ug/ml) medium was used to kill extracellular bacteria and surviving intracellular bacteria were enumerated. Negative controls included *L. innocua*. Results indicate that there may be a correlation between adherence to abiotic surfaces and invasion for strong biofilm forming strains. The highest invasive indices were observed with several strains showing strong adherence to abiotic surfaces (CW50 with an invasive index of 0.857) whereas strain CW77 (weak adherence) had an invasive value of 0.636. With low MOI of 1:10 and less incubation time showed remarkable difference between strong and weak adherent strains. The data suggest the strong adherence characteristic not only promotes retention of such strains in food processing facilities, but may also demonstrate enhanced virulence characteristics.

## **A Psychometric and Construct Validity Investigation of the Epistemological Beliefs Scale Medical Science**

**Bonnie Laster, Laura Barnes, Miriam McGaugh, and Amy Morse**

**School of Educational Studies**

**Oklahoma State University**

**Subject Area: Education**

Personal health epistemology may be defined as the beliefs individuals hold about health and medical knowledge: what it is, where it comes from, how it is attained, and how it is justified. In this study, the Epistemological Beliefs Scale Medical Science (EBS-MS) was developed to measure the nature of knowledge and learning in the domain of Medical Science. Utilizing item analysis procedures, exploratory and confirmatory factor analyses, reliability estimation, and correlational analyses, the psychometric properties of the instrument and the factor structures were examined and refined. Relationships with other related constructs were also explored. The initial results of this pilot study were promising. The final 29

items included in the EBS-MS represent a variety of dimensions within personal epistemology of healthcare and medical science. The EBS-MS may be a good starting point for examining this topic.

## **Regenerating Large Tissue Sections: Characterizing Fluid Flow within Rectangular Bioreactors**

**Benjamin Lawrence and Sundararajan V. Madihally**  
**Department of Chemical Engineering**  
**Oklahoma State University**  
**Subject Area: Biomedical Sciences**

One strategy for regenerating damaged or diseased tissue involves growing cells on degradable 3D polymer sponges. Cells grow in and the polymer degrades away, leaving only normal healthy tissue. The construct must be matured in a reactor in order to regenerate large sections of tissue required for bladder, skin, or blood vessel regeneration. Fluid flow within the reactor greatly influences the quality of regenerated tissue through both nutrient distribution and mechanical stimulation. In this study, the fluid flow properties within a thin rectangular reactor (2.5 cm '8 cm '0.2cm) with three different inlet and outlet configurations were evaluated using both computer simulations and a bench scale reactor constructed from transparent material. Further, simulations were performed to determine the change in pressure drop and mechanical forces as cells grow into the polymer sponge. Results showed expected flow profiles with increased pressure drop and shear stress as pore size decreased.

## **Lateral Migration of Fishes in the Lower Verdigris River, Oklahoma**

**Jared Lorensen and Bill Fisher**  
**Department of Natural Resources and Ecology Management**  
**Oklahoma State University**  
**Subject Area: Biological Sciences**

The lower Verdigris River in Oklahoma forms the uppermost portion of the McClellan- Kerr Arkansas River Navigation System (MKARNS). The U.S. Army Corps of Engineers is planning to deepen the MKARNS navigation channel to 4 meters and dredge the cutoff channel connections to enhance lateral fish migration. We are estimating fish abundance in three cutoff channels and diel movements of fish during four periods into and out of cutoff channels in the uppermost pool (Pool 18) of the MKARNS. At the cutoff channel connections, we are continuously measuring directional flow, water depth, temperature and dissolved oxygen during each diel sample. Sampling was conducted during spring-summer high water and summer-fall low water periods of 2007. Future research will focus on relating environmental changes to seasonal lateral fish migrations.

## **[Un]Common Language: The Corporate Commodification Of Alternative Agro-Food Movement Frames**

**Alison Lutz and Dr. Thomas E. Shriver**  
**Department of Sociology**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

Many corporate agribusinesses have adopted the messages associated with the organic movement. As a result, the term 'organic' is losing its association with qualities of the food system that go beyond federally-determined minimal production standards. In this paper, we compare the framing strategies of the alternative agro-food (AAF) movement with that of mainstream corporations. The AAF movement embraces issues such as food justice, sustainability, and community development. However, corporate agribusinesses have co-opted the frames of the AAF movement in order to tap into the increasingly significant 'green' market. We examine the corporate commodification of frames using content analysis of

organizational literature and in-depth interviews with movement and industry leaders. Our findings indicate that corporate commodification is occurring. This suggests that the AAF movement, much like the organic movement, may be experiencing difficulty in garnering support because of the similarities between their own framing strategies and those generated by corporate entities.

## **10.4% HOUSEKEEPER INJURY RATE: BEYOND THE FIGURE**

**Emily Ma, Dr. David Njite, and Dr. Hailin Qu**  
**Department of Hotel & Restaurant Administration**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

A recent report released an alarming fact that housekeepers suffer a high injury rate. Although housekeeping is a vital function for hotel daily operation, little attention has been given to the well-beings of housekeepers. This study aims to explore the causes and consequences of housekeeper injury. Extensive literature review shows that both internal and external factors attribute to housekeepers' injury. Expected consequences include adding costs to hotels, increased employee turnover, and employee and customer dissatisfaction. Recommendations and future research directions are also proposed.

## **Eco-Boomer Menswear Cradle-to-Cradle: From Concept to Practice**

**Rachel Macclure**  
**Department of Design, Housing, and Merchandising**  
**Oklahoma State University**  
**Subject Area: Environmental Sciences**

In this literature review and research product development project the definition of a sustainable product and triple bottom line are assessed. Environmental issues in relation to menswear fashion and trends are also reviewed with possible textile changes in apparel assembly and their manufacturing process. These points are all within special regard to the environment, equity, and futurity. Toward the end of the literature there will be apparel design recommendations with illustrated examples of eco-friendly menswear. These forecasted apparel pieces can be altered from the current pieces to environmentally improved versions. With the assistance and inspiration from a successful eco-responsive company 'Patagonia - these design changes can be implemented into today's market and be a stylish sustainable product of consumption.

## **Deriving standard 12-lead electrocardiogram from simultaneously recorded vectorcardiogram (VCG)**

**Milind Malshe, Dr. R. Komanduri, and Dr. S. Bukkapatnam**  
**Department of Mechanical and Aerospace Engineering**  
**Oklahoma State University**  
**Subject Area: Physical Sciences & Technology**

Electrocardiography (ECG) and vectorcardiography (VCG) both describe the temporal changes of the surface potentials resulting from cardiac electric field. The standard ECG uses 12 leads placed around chest to measure the electrical signal generated by the heart. The placement of the leads in ECG was adopted in clinical practice as it was found optimal from the medical point of view. On the other hand, the VCG uses a set of orthogonal leads to produce a 3-dimensional recording of the electric signal. Over the years most of the rules for diagnosis were established for the 12-lead ECG. In the present study a transformation from VCG to 12-lead ECG was obtained. The use of derived ECG offers the simplicity of the VCG recording while utilizing the already established rules for different diagnosis.

## **The Nature of Proton Transfer Reactions in Proteins**

**Edward Manda, Beining Nie, Richard L. Martin, Wouter D. Hoff, Aihua Xie**  
**Department of Physics**  
**Oklahoma State University**  
**Subject Area: Biological Sciences**

Proton transfer reaction is essential in biology. This molecular event is utilized in a diverse range of biological process, including energy transformation, biological signaling, and enzymatic reactions. Despite extensive studies, the key question what drives a proton to move from the proton donor to the proton acceptor remains unanswered. We report a proton transfer mechanism that is regulated by hydrogen bonding interactions. This mechanism can be used to predict when a proton transfer reaction will take place in any protein systems of interest.

## **Colonization of Ticks with *Francisella tularensis* by Capillary Feeding**

**Rinosh Mani, Mason Reichard, Rebecca J. Morton, Jessica Abbey and Kenneth D. Clinkenbeard**  
**Department of Veterinary Pathobiology**  
**Oklahoma State University**  
**Subject Area: Biomedical Sciences**

The  $\gamma$ -proteobacterium *Francisella tularensis* causes tick-transmitted tularemia in a wide variety of mammals. A tick colonization model was developed for elucidating the pathobiology of bacteria in tick. Colony-reared nymph and adult *Dermacentor variabilis* were fed with  $10^6$  CFU *F. tularensis* strain LVS via capillary tube. Post feeding, level of colonization was determined by serial CFU determinations of tick minceate. The % colonization for adult *D. variabilis* was approximately 60% with a maximum colonization level of  $10^6$  CFU/tick whereas for nymphs the value was approximately 70% and  $10^7$  CFU/nymph. *Dermacentor* transmitted the bacteria transstadially and were seen concentrated in the gut and salivary gland as was evident in the immunostained tick tissues. This model will be used to study the amount and predilection of virulent stains of the bacteria in ticks as well as for identification of bacterial factors important for tick colonization and transmission of *F. tularensis*.

## **Machine Vision weed control for Canola**

**Sunil Mathanker, Paul R Weckler and R K Taylor**  
**Department of Biosystems and Agricultural Engineering**  
**Oklahoma State University**  
**Subject Area: Physical Sciences & Technology**

Selective herbicide application to control weeds has several advantages. Machine vision using digital images can be employed for selective herbicide application. Various crops have been studied by different researchers and there are limited studies for Canola crop. This article attempts to apply machine vision approach to identify weeds in Canola crop using digital color images. The images were acquired using a digital color camera and then individual plant images of 128x128 pixels were extracted using Matlab software. Shape, green color and radial spectral energy features were selected to classify crop weed images and three resolutions were taken. Excess green method was used for segmentation. A Bayesian classifier was used for three classifications while using only shape features, only green color and spectral energy features, and all features combined. Green color and spectral energy features performed best. The classification accuracy using these features for weed detection was investigated.

## **Migration of Mexican Indigenous Women from Oaxaca**

**Nadia Merino Chavez**  
**Department of Political Science and Chicana/o Studies**  
**McNair Scholar from San Diego State University**  
**Subject Area: Social Sciences**

My research project is an exploratory investigation of Mexican immigrant women from the 'new' sending region in Mexico, the state of Oaxaca. It seeks to interrogate the reasons, tools, nature, work, and consequences of migration for Oaxacan female migrants in San Diego County. Data are obtained from Mexican immigrant women through interviews. In so doing, my project seeks to assess the applicability of recent findings of scholarly research to female migrants from Oaxaca. Women from this state have not been the specific foci/subjects of extensive research. The potential benefits of this study include contributing to the basic knowledge about immigrant women from Mexico and the feminization of migration.

## **Political Autonomy or Marriage?: Young Oaxaquenas' Perceptions Of Education, Employment And Motherhood**

**Nidia Merino Chavez**  
**Department of Anthropology**  
**McNair Scholar from San Diego State University**  
**Subject Area: Social Sciences**

In recent decades, the women of Santa Maria Atzompa have begun to question long held traditions of early marriage and motherhood as they have expanded their roles as economic providers through tourism and craft production. Within the context of ongoing economic, political and cultural changes in their community and the larger Mexican state of Oaxaca, this research examines women's reconceptualization of marriage, motherhood and the overall value of women. The research further investigates how their expanded roles have altered their relationships with their mother in-laws and husbands within the household structure. The mother/daughter in-law relationship in Mexico has traditionally been one based on unequal power relations where the incoming daughter in-law enters her husband's family in a highly subordinate position. Using ethnographic and qualitative research methods, recent mother in-laws, recently married women, and unmarried women between the ages of 18 and 25 were interviewed to document their conceptions about marriage, motherhood, education and work.

## **Does Butyrylcholinesterase Play a Role in the Cardiotoxicity of Organophosphorus Insecticides?**

**Nikita Mirajkar, S. Karanth, and Carey N. Pope**  
**Department of Physiological Sciences**  
**Oklahoma State University**  
**Subject Area: Biomedical Sciences**

Organophosphorus insecticides (OPs) elicit toxicity by inhibiting the enzyme acetylcholinesterase (AChE). OPs also inhibit a related enzyme, butyrylcholinesterase (BChE), but little is known regarding the function of BChE or its possible role in OP toxicity. We evaluated the in vivo effects of BChE inhibition on cardiac function using radiotelemetry. Following surgical implantation of radio-transmitters, baseline heart rate, ECG, body temperature and motor activity were continuously collected for 24 hours. Rats (n=6-10/group) were subsequently treated with either vehicle, 1.25 or 5 mg/kg of tetraisopropylpyrophosphoramidate (iso-OMPA, a BChE-selective OP inhibitor), and cardiac function was monitored for another 24 hours. Iso-OMPA elicited dose-related BChE inhibition in heart and a significant reduction in heart rate after ~ 16 - 24 hours, without any treatment-related effects on AChE, body temperature or physical activity. These findings suggest that BChE plays a role in cardiac function and its inhibition may contribute to some aspects of OP toxicity.

## **The effects of prescribed fire and cattle grazing on butterfly communities in tallgrass prairie**

**Raymond Moranz, Samuel D. Fuhlendorf, and David M. Engle**  
**Department of Natural Resources and Ecology Management**  
**Oklahoma State University**  
**Subject Area: Environmental Sciences**

We sought to determine the effects of prescribed fire and cattle grazing on tallgrass prairie butterfly communities via research at 10 sites in Missouri. One third of each prairie was burned each year, and five of the prairies were also grazed. We assessed butterfly abundance in the summer of 2006 and 2007 via modified Pollard walk transects. Recently burned, ungrazed sites had surprisingly large populations of prairie specialist as well as generalist butterfly species, whereas butterfly communities in recently burned, grazed sites were dominated by generalists, and had very low numbers of butterflies overall. Prairie patches that were grazed but had not been burned recently did retain prairie specialist butterflies. Although prairies managed with rotational fire alone supported greater numbers of rare species than prairies managed with both rotational fire and grazing, we conclude that both management regimes are compatible with survival of a diverse assemblage of prairie butterfly species.

## **The importance of emotion in creating collective identity in the Stillwater League of Women Voters: An exploratory case study**

**Joanne Murer**  
**Department of Sociology**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

**Scope and Method of Study:** The purpose of this study was to explore the role that emotion plays in creating collective identity in the Stillwater League of Women Voters. I examined these issues through an exploratory case study of the League. I employed qualitative research methods to conduct the study. I interviewed twenty respondents from the League. The interviews were open ended and in depth in format. In addition to the interviews, and to achieve triangulation, I also did participant observation and examined League documents.

**Findings and Conclusions:** The overall findings of this study fell into two categories: Components of a Collective Identity and Social and Political Activism. Overall, the members of the League of needed an outlet from home and being in the company of like-minded women who and work to right any injustices. This study was significant in that it centers on the contribution to the growing body of literature on collective identity and emotion.

## **SYNTHESIS OF 8,9-DIHYDROPYRIDO[1,2-A]INDOL-6(7H)-ONE AND 1,2,3,4-TETRAHYDRO-4H-CARBAZOL-4-ONE FROM A COMMON INTERMEDIATE**

**Baskar Nammalwar and Dr.Richard.A.Bunce**  
**Department of Chemistry**  
**Oklahoma State University**  
**Subject Area: Physical Sciences & Technology**

Efficient syntheses of the title ring systems have been developed from 1H-indole-2-butanoic acid, which is easily prepared from 2-fluoro-1-nitrobenzene in four steps. Heating 1H-indole-2-butanoic acid alone in toluene at reflux led to the formation of 8,9-dihydropyrido-[1,2-a]indol-6(7H)-one in 70% yield following chromatographic purification. Treatment of 1H-indole-2-butanoic acid with p-toluenesulphonic acid in toluene in 110 degrees afforded 1,2,3,4-tetrahydro-4H-carbazol-4-one in 80% yield following chromatography; this compound could also be prepared in 92% yield by treatment of methyl 6-(2-nitrophenyl)-5-oxohexanoate with iron in concentrated HCl at 100 degrees. The presentation will discuss synthetic and mechanistic details as well as applications to the preparation of related ring systems.

## **The impact of Nature and Science on the speaker's faith in "In Memoriam".**

**Tate Nanje and Thomas Lloyd**  
**Department of English**  
**McNair Scholar from Georgia Southern University**  
**Subject Area: Humanities**

The purpose of this study is to explore the misconceptions of the speaker's religiosity in Tennyson's In Memoriam. By assessing the role of science and nature as portrayed by the speaker, I argue against the idea that the speaker is not a Christian and propose that he is a doubtful Christian.

## **Differences in Fear of Death: Gender or Family Responsibility?**

**Jessica Palos and Dr. Mark Hamlin**  
**Department of Psychology**  
**McNair Scholar from University of Central Oklahoma**  
**Subject Area: Social Sciences**

The purpose of the this study was to a) replicate previous research that has found a relationship between gender and fear of death; and to look for a relationship between b) parenthood and fear of death; c) gender and risk-taking behaviors; and d) parenthood and risk-taking behaviors.

## **Solar-powered smart jacket development based on cradle to cradle design methodology**

**Hui Ju Park**  
**Department of Design, Housing, and Merchandising**  
**Oklahoma State University**  
**Subject Area: Environmental Sciences**

Smart clothing development and green manufacturing have been main stream ideas in apparel industries since 1990's. In order to meet consumers' growing demands for functions and environmentalism, this research suggested the possibility of the 'green smart clothing' option through the development of solar-powered smart jackets with the function of proactive heating based on cradle to cradle design concept. By utilizing flexible solar panel and smart textile technology, this research provided practical design alternatives to current issues of smart clothing such as dynamic comfort, thermal comfort and durability. Furthermore this smart jacket will provide 'Personal Area Network' for mobile devices. For efficient recycling after use, this jacket was designed to be easily disassembled into each recyclable material. It is expected that successful development of solar-powered smart jacket would make contribution to reduce negative impacts on the environment in that it uses unlimited solar energy for heating and it can be easily recycled. Follow up research was proposed for further development.

## **Assessing the Behaviors, Attitudes and Perceptions of Men Who Have Sex with Men**

**Philip Pettis and Rhonda Lewis-Moss, Ph.D.**  
**McNair Scholar from Wichita State University**  
**Subject Area: Social Sciences**

Since the onset of the HIV/AIDS epidemic, MSM (men who have sex with men) have been disproportionately affected. It is important to understand the contributing factors that lead to the spread of HIV in this population and design effective interventions. A health assessment survey was developed to examine the behaviors, attitudes, and perceptions of MSM regarding HIV/AIDS. Fifty MSM participated in the study. Fifty-two percent were HIV negative, 38% HIV positive, and 10% were unsure about their HIV/AIDS status. Forty-four percent were Caucasian, 32% Black/African-American, 8% Hispanic/Latino,

8% were of more than one race, 6% Asian/Pacific Islander, and 2% American Indian/Alaskan Native. Current researchers were interested in if there was an association between HIV/AIDS status and race with the following questions: 1. How good the participants felt about themselves 2. If participants felt that the negative aspects of HIV/AIDS had decreased since advancements in HIV/AIDS treatment. Results have shown that 84% of the participants felt good about themselves, 7% did not feel good about themselves, and 2% were unsure. Results also have indicated that 42% of participants believe that the negative aspects of HIV/AIDS have decreased since advancements in HIV/AIDS treatment, 34% did not believe that the negative aspects of HIV/AIDS have decreased since advancements in HIV/AIDS treatment, and 24% were unsure. Future research and limitations of the study will be discussed.

## **Yersinia pestis phagosomal virulence factors search through reverse genetics approach**

**Duraisamy Ponnusamy, Kenneth D. Clinkenbeard, Patricia Clinkenbeard, Rinosh Mani**  
**Department of Veterinary Pathobiology**  
**Oklahoma State University**  
**Subject Area: Biomedical Sciences**

The plague bacterium *Yersinia pestis* establishes infection through initial intracellular multiplication in macrophages and subsequently extracellular spread throughout the body. The virulence factors which favor the intracellular multiplication are largely unknown, and previous work used extracellular culture under stimulated phagosomal conditions to identify such factors. To more directly identify *Y. pestis* factors involved in intracellular parasitism, we used a proteomics approach by infecting RAW 264.7 mouse macrophage cells with *Y. pestis* Kim-6 resulting in profound bacterial multiplication inside the phagosomes with spacious extension of phagosomal boundaries. Compare to extracellular culture, the phagosomal bacteria showed different protein expression profile consisting primarily of changes in stress response proteins DnaK, TerDE, HnS, GsrA, superoxide dismutase, inorganic diphosphatase and conserved hypothetical protein YPO2705, a putative periplasmic murein peptide binding protein, MppA. In order to verify the role of MppA *Y. pestis* in phagosomal life phase, we are currently creating MppA null mutants.

## **Catholic Radicals**

**Mark Popowski**  
**Department of History**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

Most historians of American Catholicism, when they study Catholic radicalism in the post-Vatican II era, focus of the Catholic Left. While those of the Catholic Left were indeed rebellious, they were considerably less radical than their brethren at *Triumph* -- a lay-directed, ultramontane-Catholic journal of opinion. Catholic radicalism in the post-Vatican II era, then, existed on the Right rather than the Left. *Triumph's* editors sought -- through a militant apostolicism -- both the destruction of the secular-liberal order, which they believed was incapable of manifesting a Christian purpose, and to erect on its rubble a Catholic-confessional state and civilization. What were the origins of such radicalism and, by extension, *Triumph's* founding? They can be found in the post-World War II conservative intellectual revival, disaffection with American conservatism, liberal domination of the American Catholic presses, the Second Vatican Council, and Carlism.

## **Rumen temperature of beef cows around parturition and estrus**

**Monica Prado, N.M. Long, E.C. Wright, C.J. Richards, R.P. Wettemann**  
**Department of Animal Science**  
**Oklahoma State University**  
**Subject Area: Whiteman Award Presentation**

Angus x Hereford spring calving cows were used to evaluate changes in rumen temperature (RT) related to parturition and estrus. Rumen temperature 7d before to 3d after parturition, and 32h before to 32h after visual detection of estrus, were analyzed using MIXED procedure (SAS). Mean RT from d -7 to d -2 relative to parturition ( $38.94 \pm 0.06^\circ\text{C}$ ) did not differ. RT decreased ( $P < 0.001$ ) from d -2 to d -1 before parturition ( $38.88$  to  $38.55 \pm 0.05^\circ\text{C}$ , respectively). Rumen temperature was constant the day before and at parturition. After parturition, RT decreased ( $P = 0.03$ ) from d 0 to d 1 and remained constant ( $P = 0.58$ ) until d 3 ( $38.43 \pm 0.05^\circ\text{C}$ ). Rumen temperature at 8h before to 8h after estrus was first observed ( $38.89 \pm 0.07^\circ\text{C}$ ) was greater ( $P < 0.001$ ) compared with RT 16 to 32h before estrus ( $38.49 \pm 0.08^\circ\text{C}$ ) or 16 to 32h after estrus ( $38.29 \pm 0.07^\circ\text{C}$ ). RT decreased the day before parturition and increased at estrus in beef cows.

## **Reducing Thickness of Composite Matrices for Tissue Engineering by Nanoetching**

**Jonathan Pratt, Rahul Mirani, Sundararajan V. Madihally**  
**Department of Chemical Engineering**  
**Oklahoma State University**  
**Subject Area: Biomedical Sciences**

Tissue engineering presents new possibilities for the creation of synthetic organs. Currently, a natural tissue, small intestinal submucosa (SIS), is used in bladder reconstruction. SIS is difficult to provide and ensure uniform quality. Clearly, a synthetic alternative with guaranteed quality capable of mass-production would be preferable. A composite scaffold consisting of synthetic polymer Poly [lactic-co-glycolic acid] (PLGA) to provide mechanical strength and natural polymer chitosan to provide biological support was constructed to mimic SIS. However, the thickness of the matrix was significantly higher than SIS. This study aimed to reduce the thickness of existing scaffolds by nanoetching the PLGA surface. A rough surface was created by treating the PLGA with sodium hydroxide (NaOH) to encourage the hydrophilic natural polymers to spread on the hydrophobic PLGA surface. The overall thickness of the composite was reduced from 2mm to 0.6 mm without compromising the tensile properties of the initial composite.

## **Using near-infrared (NIR) spectroscopy and video image analysis (VIA) to sort beef carcasses into tenderness categories**

**Dennis Price, Gretchen Hilton, Deb VanOverbeke, Christina DeWitt**  
**Department of Animal Science**  
**Oklahoma State University**  
**Subject Area: Whiteman Award Presentation**

Beef carcasses ( $n = 191$ ) were selected (d-2) from a commercial beef processing facility. Longissimus sections were scanned with VIA and NIR cameras following carcass presentation to in-plant USDA grading personnel. One 2.54 cm thick steak was fabricated (d-3) then individually vacuum-packaged and aged at  $4^\circ\text{C}$  for a total of 14-d prior to cooking and slice shear force analysis. Wavelength coefficients were generated from NIR spectral data and used with VIA and SSF data for statistical analysis by regression to predict 14-d steak tenderness during on-line grading. Four principle components generated from the NIR system were incorporated into the regression equation and were highly significant ( $R^2 = 0.80$ ;  $P < 0.0001$ ) in 14-d tenderness prediction. Lean  $a^*$ , ribeye area, and marbling content collected from the VIA camera were also significant ( $P < 0.05$ ) in the prediction equation. Scanning by NIR and VIA cameras was successful in sorting carcasses into tenderness groups.

## **Screening Of Chemical Penetration Enhancers For Transdermal Drug Delivery Using Electrical Resistance Of Skin**

**Vijay Krishna Rachakonda, K. M. Yerramsetty, S. V. Madihally, R. L. Robinson Jr., K. A. M. Gasem**

**Department of Chemical Engineering**

**Oklahoma State University**

**Subject Area: Biomedical Sciences**

Transdermal drug delivery is gaining prominence in recent times due to various advantages. Altering the barrier characteristics of skin by using chemicals called Chemical Penetration Enhancers (CPEs) is one of the promising ways to deliver drugs transdermally. However, identifying potential enhancers for a specific drug is very difficult. This study describes a novel technique for screening potential CPEs from a larger pool of chemicals by using electrical resistance of skin. Changes in barrier properties of skin after exposing it to the CPE was monitored. Tests were performed on seven proprietary and few literature cited CPEs using a newly developed resistance chamber. The results from this technique have been confirmed by performing permeation experiments using melatonin as a test drug. Of the seven proprietary CPEs three have showed positive results from the screening technique among which only two have increased the permeation of drug (melatonin) through skin in 48 hours.

## **The Deficit of Diabetic Foot Care Education in African American and Hispanic Populations**

**Reginald Randle**

**Department of Nursing**

**McNair Scholar from Harding University**

**Subject Area: Minority Issues**

Lower extremity lesions remain a reason for hospitalization among minority diabetic patients, and may lead to amputation. Foot lesions and amputation can be prevented by daily foot care. This study measured baseline knowledge foot care among the African American and Hispanic populations. Thirty-seven participants were given a pre-test regarding foot care and diabetes management knowledge, before viewing a power-point presentation regarding foot care. The participants were administered the same test, to assess any increase in diabetes knowledge. Statistical analysis of both test scores were significant ( $t=-5.27$ ,  $df=36$ ,  $p < .05$ ). Hispanics declined to give informed consent fearing deportation.

## **The Correlation Between Body Mass Index and Waist Circumference on Resting Heart Rate Variability of Untrained College Age Males**

**Eric Reed and Dr. Brady Redus**

**Department of Kinesiology**

**McNair Scholar from University of Central Oklahoma**

**Subject Area: Biological Sciences**

The purpose of this study was to examine of the correlation between body mass index and waist circumference on resting heart rate variability of untrained college age males. The researcher hypothesized that the correlation would be significant enough to predict a subject resting heart rate.

## **A New Inducible RNA Interference Tool That Silences Sporulation in *Aspergillus nidulans***

**Lisa Rigdon and Rolf Prade, Ph.D.**  
**Department of Microbiology and Molecular Genetics**  
**Oklahoma State University**  
**Subject Area: Biological Sciences**

RNA Interference (RNAi) is a natural mechanism for silencing gene expression. We have used *Aspergillus nidulans*, a multicellular fungus, to test an alcohol-dependent, inducible construct for RNAi. This construct consists of inverted repeats of alcohol dehydrogenase promoters (alcAp) with a gene of interest located between the promoters. We tested the construct with *brlA*, which regulates sporulation. Analysis of genomic DNA from mutants indicated the construct was integrated into the genome. The mutants show normal phenotypes on standard media, but a loss of sporulation on alcAp inducible media. Expression and lack of expression of *brlA* in the two growth conditions was confirmed with Northern blotting, classical RT-PCR, and Real Time RT-PCR. These results indicate the RNAi construct induces silencing of a targeted gene. We are currently replacing the *brlA* gene with random fragments of the genome to have an 'RNAi Library,' so that we may discover new gene functions.

## **Cradle To Cradle Disassembleable Apparel Design And Production (C2cdadp) Research And Proof-Of-Concept**

**Rachel Rumsey**  
**Department of Design, Housing, and Merchandising**  
**Oklahoma State University**  
**Subject Area: Environmental Sciences**

Apparel manufacturing is responsible for more solid waste production than any other industry (Franklin Associates, Ltd, 1993). The traditional manufacturing model is a "cradle to grave" model that fails to consider the materials after their use and creates a large amount of waste and pollution.

The C2C Apparel Design Model (C2CAD) is being implemented into the first Cradle to Cradle Disassembleable Apparel Design and Production (C2CDADP) proof-of-concept prototype (EPA Award SU832483, and SU83351701). The annual 4.5 million tons of apparel products produced in the US, with a mere 1.25 million tons being recovered is harmful (EPA manual 530R97002). One obstacle for recycling materials is that most apparel is a mixture of both natural and synthetic materials destroying their recyclability. This study's focus is to ensure both sustainability, and utilize biological and technical nutrients is critical in paving the way for the future of the apparel industry through a C2CDADP prototype.

## **Financial Literacy of College Students and Their Parents**

**Jay Sang Ryu, Dr. Jane Swinney, and Dr. Sissy Osteen**  
**Department of Design, Housing, and Merchandising**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

Financial Literacy is an important issue for US consumers. According to the Federal Reserve, US consumer revolving debt totaled \$904 Billion in June 2007 with an average credit card balance of 5% of their annual income. President Bush recently established the President's Advisory on Financial Literacy. The Jump\$tart Coalition developed and had used their financial literacy survey with high school students, but the present study used a modified version of the survey with a class of university seniors and their parents. The objectives were to: 1) to examine the differences in Financial Literacy scores for college students and their parents and 2) to determine the relationship between scores and the number of credit cards owned and paid on monthly. Student and parent responses were matched with a total of 77 students and 41 parents responding. The mean scores for students and parents overall were 19.62 and 26.88, respectively. The results showed that respondents with the higher Financial Literacy scores were better in managing credit

card spending. The findings can be applied to develop the educational programs to improve Financial Literacy of US College students. Further analysis is pending.

## **Being Materialistic can be Beneficial: Instrumental Materialism and Sustainable Consumer Behaviors**

**Kristin Scott and John C. Mowen**  
**Department of Marketing**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

Traditionally, consumer materialism has had a negative connotation. As such, materialism has been linked with a host of negative constructs such as lower subjective well-being, lower self-esteem, and greater narcissism. Is there a good side to materialism? Previous research suggests there is when the purposes of consumption are taken into consideration and dividing materialism into two categories: instrumental and terminal. Terminal materialism is thought of consuming as an end in of itself while instrumental materialism is consuming as a means to an end. The current research uses this dichotomy and develops scales to measure the two types of materialism and develops a typological framework from which to view materialism. From this framework emerge four categories of materialism: terminal, instrumental, non-materialism, and dual-materialism. It is hypothesized that these four categories will differ in the degree to which they engage in sustainable consumer behaviors (e.g. repair, care/maintenance).

## **Singing Taught Using Computer Program that Displays Pitch Through Shapes and Colors: Part II**

**Tayoni Scott and Dorothy Crum, Ph.D.**  
**McNair Scholar from Wichita State University**  
**Subject Area: Humanities**

This work is seeking to create a tool for teachers who teach singing, using the computer as a tool, which will display pitch. The solution is technology enhanced with speech/singing recognition devices, much like a sonogram. However, instead of lines and a graph, the person singing into the microphone will see the overtones-frequencies of a certain pitch-sung as AH. This sound will then be projected onto a screen using shapes and colors. This screen, in accordance with shapes and colors, will show the person if they are using correct overtones. Therefore, the person can check tongue positions and pharyngeal space and allow the screen to guide them into correct overtones, format, note pitch, and the pitch/frequency of vowels. This study is confined to one vowel (AH) to narrow the field of research.

## **Social, Economic And Environmental Metrics For The Sustainable Optimization Of Chemical And Petroleum Processes**

**Olamide Shadiya and Karen A. High**  
**Department of Chemical Engineering**  
**Oklahoma State University**  
**Subject Area: Physical Sciences & Technology**

This research is focused on investigating sustainability metrics for the optimization of chemical and petroleum processes. Traditionally, engineers designed processes to meet economic goals; however with the awareness of sustainability, engineers are now considering other constraints such as resource usage, environmental impacts, social benefits and economics. Several metrics and indicators for quantifying sustainability exist; yet, there is no straight forward computer aided tool and path that engineers can follow in order to design for sustainability. Investigating and validating available indexes and metrics and implementing the three major sustainability criteria into process design and optimization are the goals of this research. A well defined methodology that will include process optimization under social, economic and

environmental constraints is being developed. This involves building upon existing multi-objective algorithms that handle selected sustainability criteria and constraints. This research will contribute to sustainability development in process design. This talk will introduce our methodology as well as present results from evaluating existing metric systems.

## **Does God Exist If We Have Free Will?**

**Jesseca Short**  
**Department of Liberal Arts and Social Sciences**  
**McNair Scholar from Georgia Southern University**  
**Presentation Subject Area: Social Sciences**

This paper examines the theory that if God exists, then human actions are not free. I define determinism which clarifies our behavior in this world. I aim to prove that if one confirms the existence of God, one is committed to the view that no human action is free or voluntary.

## **Homozygosity Mapping with Unknown Common Ancestors**

**Lei Shi, Anne V. Hing, Stephanie A. Monks**  
**Department of Statistics**  
**Oklahoma State University**  
**Subject Area: Biological Sciences**

Homozygosity mapping, introduced by Lander and Botstein in 1987, has proven to be an efficient strategy for mapping genes that cause recessive diseases. It uses the identical by descent information in affected samples to search for the locations of possible disease genes. One of the assumptions of homozygosity mapping is that the common ancestor of all the diseased individuals can be identified. However, this assumption often does not hold for isolated populations as will be demonstrated in Native Alaskan data. We have developed a new test strategy based on the concept of homozygosity mapping that does not require known common ancestors. Monte Carlo simulation was used to sample the missing information related to common ancestors. This method was applied to analyze the Oculo-otofacial dysplasia (Hing et. al. 2006) disease found within a remote Native Alaskan village. Significant evidence for disease genes was found on chromosome 2, 10 and 18.

## **Modulation of Transcriptional Activity of Virulence Genes by Sugar Metabolism in *Streptococcus pneumoniae***

**Tripti Shrivastava and Moses Vijayakumar**  
**Department of Microbiology and Molecular Genetics**  
**Oklahoma State University**  
**Subject Area: Biological Sciences**

*Streptococcus pneumoniae* is a severe human pathogen causing pneumonia and meningitis. We sought to investigate whether carbon catabolite regulation was involved in the regulation of the transcriptional activity of its virulence genes. An *E. coli* reporter gene, *lacZ*, was inserted into two well-known pneumococcal virulence genes, pyruvate oxidase involved in the generation of H<sub>2</sub>O<sub>2</sub>, and autolysin. Growth in lactose, rather than glucose, was found to reduce the transcriptional activity of the autolysin by a factor of 3 while pyruvate oxidase gene activity remained unaffected. On the other hand, inactivation of the gene encoding the carbon catabolite protein resulted in a 5 to 6 fold increase in the transcriptional activity of the pyruvate oxidase gene while the autolysin gene activity remained the same. Also, it was observed that growth in lactose resulted in a significant decrease in the stationary phase period as compared to growth in glucose.

## **Watching a single photo-receptor protein molecule in action**

**Kushagra Singhal, Wouter Hoff, Ahiua Xie, and Kaan Kalkan**  
**Department of Mechanical and Aerospace Engineering**  
**Oklahoma State University**  
**Subject Area: Physical Sciences & Technology**

Photoactive Yellow Protein (PYP) is a small cytosolic photoreceptor, responsible for the negative phototactic response of its host organism *Ectothiorhodospira halophila*. We study the photocycle of PYP at the single molecule level using our 'high enhancement factor' SERS-active nanostructures with 514 nm laser excitation. The SERS-active 'nanometal-on-semiconductor' structures are prepared employing a unique redox technique on thin germanium films, coated on glass slides. The SERS detection reveals Receptor (pG) and Signaling (pB), as well as Intermediate (pR) states of single PYP molecules. These single molecule spectra are observed in terms of sudden appearance of discernable Raman peaks (with spectral fluctuations). This is indicative of PYP molecules, under transition, finding high-enhancement SERS sites, thus implying detection of photo-cycle of single PYP molecules. The future work will pursue acquisition and analysis of time series single PYP spectra with the objective of elucidating its photo-cycle and structural dynamics at single molecule level.

## **Generation of slip pulses between frictional sliding of PMMA plates.**

**Vijay Subramanian and Demirkan Coker**  
**Department of Mechanical and Aerospace Engineering**  
**Oklahoma State University**  
**Subject Area: Physical Sciences & Technology**

Dynamics of frictional sliding of two PMMA plates was studied by applying a constant compressive load and tangentially pushing the lower slab against the fixed upper PMMA slab at a constant velocity. The normal and the tangential loads from the respective load cells are continuously acquired at the rate of 2 kS/s. Using the technique of Digital Image Correlation (DIC), the changes in the strain fields at the interface are mapped throughout the event. Two distinct events were observed: The commonly observed macro stick-slip event of the plates at frequencies around one Hz and regions of partial slip that are generated and propagate across the interface at higher frequencies. These partial slip regions can be either slip pulses or expanding slip regions. The existence and progress of these slip pulses is investigated as a function of compressive load and driving speed.

## **A Comparison of Client and Trainee Perspectives for Early Therapy Processes and Outcomes**

**Joshua Swift and Jennifer L. Callahan, PhD**  
**Department of Psychology**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

Understanding and including clients' unique preferences, concerns, and expectations have been emphasized in the delivery of psychotherapy services. These skills have further been emphasized for therapists to learn while in training. In order to examine trainee therapists' understanding of their clients, archival data for 151 clients were analyzed to compare identical ratings completed by clients and their therapists. Results indicated that therapists' and clients' ratings were significantly correlated; however, therapists underrated the relationship and progress of treatment and accurately predicted their clients' target complaints only 31.1 percent of the time.

## **Assessment of Safety in Trenchless Technologies for Culvert Rehabilitation**

**Syadaruddin Syachrani, Vajra Rai, and Hyung Seok "David" Jeong**  
**Department of Civil Engineering**  
**Oklahoma State University**  
**Subject Area: Physical Sciences & Technology**

Proper functioning of culvert is not only critical to protecting the transportation system from flooding, but also critical to maintaining the expected service life of the overall transportation system. During service life, they deteriorate due to many reasons such as corrosion caused by road salt, blockage by debris and sediment, poor construction techniques, etc. Trenchless technologies have been used by several DOT's to rehabilitate deteriorated drainage structures without disrupting the traffic and within a relatively short span of time. These technologies provide many benefits in terms of cost, time, quality and expected service life. However, the safety aspects of these techniques have not been discussed and documented in detail probably due to the complexity and the lack of safety standards/specifications directly associated with the techniques. This study will assess potential safety issues of currently available trenchless culvert rehabilitation techniques and develop recommendations based on hazard level and its associated cost.

## **Tease Me: The Postmodern Movie Trailer**

**Kimberly Tolson**  
**Department of English**  
**Oklahoma State University**  
**Subject Area: Humanities**

While the postmodern teaser trailer retains the essence of a traditional trailer (that is to promote an upcoming film), it violently breaks from the defining characteristics comprised mainly of montage and persuasion. Teaser movie trailers embody and exhibit a postmodern rhetorical approach much like the movie poster, ambiguous and vague at best. Postmodern trailers do not suspend disbelief of the diegesis; instead, they are an expression with their own internal logic not directly related to the film's narrative. The postmodern movie preview (as seen through the teaser trailer) is generally exemplified as unresolved, non-persuasive, and unexplained. Thus, postmodern previews cannot be defined as explicit advertisements or persuasive texts, although they persuade through non-persuasion. Additionally, postmodern previews are aggressively self-reflexive, exercise 'high concept' techniques, are not fine tuned and are not concerned with 'the edit.' I will also explore how the postmodern movie trailer correlates to a cinephilic, pleasure-obsessed society.

## **How Much Knowledge Do College Students Have About Sexually Transmitted Diseases?**

**Chasity Travis**  
**Dr. Barbara Green**  
**Department of Family Life Education**  
**McNair Scholar from University of Central Oklahoma**  
**Subject Area: Social Sciences**

The purpose of this study was to determine the level of knowledge college students have about sexually transmitted diseases and to attempt to raise awareness about sexually transmitted diseases, aid in improving the health of young adults, and decrease the spread of sexually transmitted diseases among this population.

## **France: Revolution's Social Change**

**Kylei Tumey**

**McNair Scholar from Indiana State University**

**Subject Area: Humanities**

Unlike other animals humans rely on social organization to live in a society. This is why cultural laws have been around for thousands of years. When a social organization is changed, people adapt. The French Revolution led to a great deal of adaptation in France. Our purpose was to better understand the changes through biographical data.

## **La Chaise et Le Bergère en Rococo**

**Mary Underwood**

**Department of Design, Housing, and Merchandising**

**Oklahoma State University**

**Subject Area: Humanities**

In America during the 19th Century a revival movement of previous styles took place. Styles such as the end of Louis XV and beginning of Louis XVI, during the Rococo era in France were common and lasted in America between the 1840's to the 1860's (LaChiusa, 2005). Influences not only from France, but also England led to the Rococo inspired idea of furniture in America during this time; however, the French, being the original influence, is what will be focused on. Common characteristics of Rococo revivals include: cabriole legs, wood carving in S or C scrolls, organic lines, asymmetry, upholstered backs and seat, which were often tufted, and dominantly curved lines (LaChiusa, 2005). Shell and floral motifs and carvings were also often found during the 19th Century revival of the Rococo style; however they are only used as influences in this piece rather than as a main spectacle.

## **Extraction of bio-active components from fruit and vegetable processing wastes: Using grape waste from the wine processing industry as a model**

**Akhila Vasan, Yannis Oikonomakos, Dr Christina Dewitt, Dr William Mcglynn**

**Department of Animal Science**

**Oklahoma State University**

**Subject Area: Whiteman Award Presentation**

A Minimum Inhibitory Concentration test (MIC) was evaluated against Gallic acid (GA), the known antimicrobial in grape waste. The activity GA against *E. coli* 0157:H7 and *B. subtilis* was effective at concentrations of 0.04% and 0.06%. The results were based on absorbance studies and Total Plate Count.

Grape waste was ground under liquid nitrogen to <3.6 mm. The extraction methods utilized 100% petroleum ether, 70% methanol, 50% acetone and 0.01% pectinase. Different pectinase: waste ratios were tested as pectinase was the limiting solvent. Recoveries ranged from 34% to 78.6%. Thus, 2:1 and 4:1 were selected. The interaction times were 1, 2, 4 and 8h on a shaker. Miracloth (for pectinase) and Whatman1 filter paper were used for extractions. Petroleum extractions were evaporated. Final volume of all extracts were 100ml using acetone or water. Extracts were stored at -20°C. Further tests will be conducted on extracts to measure antimicrobial activity.

## **US higher education environmental program managers' perspectives on curriculum design and core competencies: Implications for sustainability as a guiding framework**

**Shirley Vincent**  
**Department of Environmental Science**  
**Oklahoma State University**  
**Subject Area: Environmental Sciences**

This study is part of a multi-phase research project sponsored by the Council of Environmental Deans and Directors, National Council for Science and the Environment, to determine if a consensus on core competencies for higher education environmental programs is achievable and if so, to make recommendations for consideration by environmental program leaders. The paper presents the results of a Q methodological study of perspectives held by CEDD members regarding curricular design. Program administrators hold three distinct, but not opposing, orthogonal perspectives of curriculum design. These perspectives parallel three philosophical orientations toward program objectives advanced in the environmental education literature. Host institution type was a small but significant predictor for two of the three perspectives. Manual rotation revealed an additional two perspectives, one of which represents a majority of CEDD program administrators. Program leaders share a common view of the identity of environmental programs which aligns closely with concepts of sustainability.

## **Nanotechnology, A solution to pedagogical efficiencies**

**Earlene Washburn**  
**Department of Occupational & Adult Education**  
**Oklahoma State University**  
**Subject Area: Education**

As teachers and administrators struggle with many educational, financial, and environmental issues that adversely effect pedagogy, solutions are critically and urgently needed. Timing is delicate with relationship to multiple educational demands that promises to deteriorate pedagogy severely while making No Child Left Behind mandate impossible. Administrators are dealing with the rising cost of pedagogical threats and increasing governmental and community demands. School superintendents juggle the rising cost of education by threats of security, safety, fuel costs, energy, water purification, viruses, transportation, air quality and special needs. With such multiple and urgent issues, a singular solution would seem too good to be true. Nanotechnology offers multiple solutions. Brian Hicks, publisher of Wealth Daily (2007) stated, 'Nanotechnology will be changing the world in ways that we can't imagine now. And like the paths of those earlier 'big ideas' nanotech is just beginning to scratch the surface'(T' 3).

## **The Interrelatedness of Affective Factors in EFL Learning: A Comparative Examination of Motivational Patterns in Relation to Anxiety in China**

**Ming Wei**  
**Department of English**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

The purpose of the current study was to examine the level of anxiety and probe the motivational patterns of Chinese college-level English learners, as well as the possible relationship between anxiety and motivation. A survey consisting of an anxiety questionnaire a motivation questionnaire and a background questionnaire was administered. The results show the overall medium anxiety level and a moderately high motivation level; however, these two factors were not significantly correlated. The findings indicate the existence of two types of motivation clusters that resembled the integrative-instrumental duality. The participants demonstrated an unbalanced pattern of motivation. Integrative motivation, rather than instrumental motivation, was found to be a predictor of low anxiety. The findings validate the context-specific approach

to the understanding of instrumental-integrative dichotomy and have significant implications for the understanding of anxiety and motivation in foreign language settings.

### **Antibiotic Activity Against Intracellular *Yersinia pestis***

**Jered Wendte, Duraisamy Ponnusamy, and Ken Clinkenbeard**  
**Department of Veterinary Pathobiology**  
**Oklahoma State University**  
**Subject Area: Biomedical Sciences**

*Yersinia pestis*, the agent of plague, resides in host macrophages to initiate infection. Therefore, knowledge of antibiotic efficacy against intracellular *Y. pestis* is relevant when selecting acute stage or prophylactic treatments for plague, both likely scenarios in a bioterrorist event involving this agent. We have developed a high-throughput assay to determine minimal bacteriocidal concentrations (MBCs) for antibiotics against *Y. pestis* infecting mouse RAW or human THP-1 cell lines. With infected THP-1 cells, amoxicillin, doxycycline, and gentamicin showed a 3-fold greater, and ciprofloxacin and chloramphenicol a 2-fold greater MBC compared to extracellular *Y. pestis*. With RAW cells, MBCs for gentamicin, doxycycline, and ciprofloxacin were similar to those for extracellular bacteria, while amoxicillin and chloramphenicol were 3-fold less effective in infected cells. This suggests that some antibiotics used to treat plague may achieve their success through effects on extracellular *Y. pestis* and may not be as effective at the initial intracellular stage.

### **The Frugal and the Ecological: Comparing and Contrasting Their Trait Antecedents and Anti-consumption Propensities**

**Rand Wergin**  
**Department of Marketing**  
**Oklahoma State University**  
**Subject Area: Social Sciences**

Based upon a hierarchical model of motivation and personality, a nomological net of constructs is proposed that identifies the relationship among three constructs central to the topic of anti-consumption: environmental concern (EC), tightwadism, and voluntary simplicity (VS). In the nomological net, tightwadism and EC are proposed to be antecedents to four VS constructs: recycling, modest living actions, a belief in global warming, and green buying. In addition, in the nomological net, the traits of competitiveness, need for activity, need for learning, and materialism are investigated as possible antecedents to EC and tightwadism. The results reveal that EC and tightwadism are different constructs. While they share some antecedents (e.g., low material needs) and some consequences (e.g., green buying), there are also substantial differences in their antecedent traits and behavioral consequences.

### **Adolescents use of the internet to cope with the death of a peer**

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**Subject Area: Social Sciences**

Researchers analyzed adolescents' responses to peer death by observing commentary posted to deceased adolescents' online social-networking profiles. Coping theories were applied to content of which exemplars are presented. Results illustrate how adolescents maintain attachments to their deceased peers via the internet indicating bereavement may have farther-reaching affects than previously assumed.

## **Effects of Dried Distillers Grains During Preconditioning on Subsequent Wheat Pasture and Finishing Performance of Fall-Weaned Beef Steers**

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**Subject Area: Whiteman Award Presentation**

Fall-weaned steer calves were fed increasing amounts of corn dried distiller's grains with solubles (DDGS) for 56-d. Pens of steers (4 steers/pen and 4 pens/treatment) were randomly assigned to treatments of: 0.30, 0.75, 1.20 or 1.65% of mean pen BW of DDGS. Prairie hay was fed ad libitum and refusals measured weekly. Increasing DDGS improved ADG and hay intake decreased. Level of DDGS increased DMI and improved G:F. Wheat pasture ADG was greatest for steers fed lowest DDGS level. Feedlot ADG, dressing percentage, marbling score, 12th-rib fat thickness, LM area, % KPH, and yield grade were not different, but HCW tended to increase with increasing DDGS. An economic analysis, with hay priced at \$65/ton, indicated cost/kg of gain decreased linearly across increasing DDGS when DDGS was priced at \$125/ton, but was not different at \$150 or \$175/ton. Steers readily consumed DDGS and no symptoms of polioencephalomalacia were observed.

## **Effects of heat stress on gestation length on fall calving beef cows**

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**Subject Area: Whiteman Award Presentation**

Angus x Hereford cows were AI to calve in August or October to evaluate the effect of heat stress on length of gestation. Cows grazed native grass pasture in Oklahoma and had a body condition score of 6.0 '0.5 at calving. Length of gestation for cows that calved in August during yr 4 was shorter (278.2'0.8 d, n = 38,  $P < 0.05$ ) than for cows that calved in October (281.5 '0.9 d, n = 32). Commencing 2 wk prior to the expected calving date in yr 5, blood plasma samples were taken by puncture of the tail vein every 2 to 3 d until 2 d postpartum. Concentrations of progesterone and cortisol were quantified by RIA. Cows that calved in August had shorter gestations (275.2 '1.3 d, n = 14,  $P = 0.07$ ) compared with cows that calved in October (278.8 '1.4 d, n = 10). Maximum daily ambient temperature during the last 8 d of gestation was greater ( $P < 0.001$ ) during August (36.3 C '4.5) than during October (25.2 C '7). Concentrations of progesterone in plasma during the last 10 d of gestation were increase ( $P < 0.10$ ) for August calving cows (4.99 '0.3 ng/mL) than October calving cows (4.23 '0.4 ng/mL). Concentrations of cortisol in plasma during the last 4 d of gestation were greater ( $P < 0.05$ ) in cows that calved in August (12.5 '0.9 ng/mL) compared with October cows (9.5 '1.0 ng/mL). Shorter gestation in beef cows during heat stress was associated with greater concentrations of cortisol in plasma during the last 4 d of gestation.

## **Distributed Detection in the Presence of Frequency Offset and Phase Shift**

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**Subject Area: Physical Sciences & Technology**

In this paper, we study the problem of distributed detection in the presence of unknown carrier frequency offset (CFO) and initial phase, the issue we encounter in the emerging applications of wireless sensor networks (WSNs) due to hardware constraints on sensor nodes. Suboptimal fusion rules taking into account CFO and initial phase and non-data-aided methods of low complexity for CFO and initial phase shift estimation are developed. Instead of the estimation performance, the objective function is in terms of the final detection performance. In particular, a generalized likelihood ratio test is proposed first for distributed detection in the presence of unknown CFOs and phase shifts. Then computationally simplified algorithms

are proposed under the high and low signal-to-noise ratio regimes, respectively. Specifically, under the high-SNR condition, a time averaging autocorrelator is used for CFO estimation and the Chair-Varshney fusion rule is used for decision fusion; while under the low-SNR condition, maximum likelihood estimation can be realized by a fast Fourier transform. The simulation results show that the developed fusion schemes are robust to CFO and initial phase.

## **Sales Effort Coordination under Free Riding with Selective Rebate and Price Match**

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**Subject Area: Physical Sciences & Technology**

This paper examines a supply chain policy for a channel competitive environment: online retailers offer a lower price and free-ride traditional retailers' sales efforts. A selective rebate mechanism is that the manufacturer pays rebates to the traditional retailer's customers able to prove the price difference. When demand is influenced by sales efforts and the proportion of customers knowing the price difference is constrained, a properly designed customer rebate can achieve coordination.

## **Local Recurrence Model for Forecasting Applications**

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**Subject Area: Physical Sciences & Technology**

A local recurrence modeling approach that considers the underlying nonlinear stochastic dynamics and nonstationarities is presented for predicting the state and performance of complex physical systems. This approach uses heretofore unexplored premise of treating nonstationarity as to cause finite time detours of system dynamics from an attractor's vicinity. The local recurrence property, exhibited over a certain sets of time and state space segments, is used to partition system trajectory into multiple near-stationary segments. Consequently, local eigen representations of each segment can capture both dynamics and nonstationarities. This approach was applied for performance prediction in a real-life complex engineering system. One-step prediction errors were reduced by 34% compared to conventional stationary predictors and by around two orders of magnitude compared to the methods used in the current practice.

## **Frog's leap: A case study of SPEAK and ITA tests**

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**Subject Area: Humanities**

This study examines the performances of ITAs who took English tests in order to be eligible to teach at OSU. Examining a database between 2005 and 2006, I found one exceptional case which showed the biggest improvements within a year. Lemi first failed both tests, presenting a very low level of proficiency but he later improved greatly and finally passed the tests. The analysis compares his language behaviors for each of six trials and reveals a number of differences in his performance from the first to the last test. Examples show how he 1) familiarized himself with the tests, 2) learned to control English intonation units, 3) displayed higher interactional competence, and 4) showed his “thinking for speaking” by gesturing. This study suggests how to prepare future applicants for the tests following the lessons from Lemi's case.

## **Household Demand for Grains and Other Foods in Urban China**

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**Subject Area: Social Sciences**

A complete food demand system is estimated using a two-stage budgeting procedure and the 2004 China's Urban Household Survey data for Jiangsu province. The results indicate that region, city size, household age structure, education, and the ratio of food-away-from-home spending to total food expenditure significantly influence consumption of most of food categories. The demand for grains, oils & fats, and dairy products is more responsive to price changes than other food categories. The demand for foods with animal origin (mainly including pork, beef, mutton, poultry, dairy products, and aquatic products) is much more sensitive to expenditure changes than grains and other food categories. Finally, the almost ideal demand system (AIDS) and the quadratic almost ideal demand system (QUAIDS) yield very similar results in this application.

## **Voice and the Individual: The Construction of Identity in Jhumpa Lahiri and Julia Alvarez**

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**Subject Area: Humanities**

Of the many books that deal with cross-culturalism and its implications regarding the loss of voice, difficulties in integration, and the subsequent split identity, Julia Alvarez's How the Garcia Girls Lost their Accents and Jhumpa Lahiri's Interpreter of Maladies take on the subject, headlong. The authors explore the effects of migration and exile on the characters of their respective novels, who become displaced in relation to the world around them, both spatially and emotionally. The characters cannot easily connect with their environments due to a number of reasons, including lack of voice, and the inability to integrate themselves into new situations. With migration, it is possible that the physical person can thrive in a new place; however, that person must become someone new, with regard to identity--language, personality, even beliefs. Otherwise, in the case of a physical move, the alternative to a replaced personality is a fractured one.