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From Derricks to Pastures: The Long-Term Environmental Impact of Oil Field Development in Oklahoma

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This paper deals with the recovery of land that has been used by the oil industry to produce and refine petroleum products. The writer traces the history of oil field production practices together with the consequential environmental impact and the effectiveness of recent attempts to correct environmental damage.

Roarrrrr Vision: The Dinosaurs of J. O. Parker

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A visit to an Outsider (e.g., Visionary, Folk) art environment is an exhilarating experience. Without formal training Outsiders create their unique art forms. J. O. Parker is such an individual. On a mountaintop in Arkansas, using his skills J. O. Parker spent over a decade constructing his “Dinosaur Creations.” J. O. Parker is not an artist. Just ask him. He took a road less traveled and found passion and fulfillment few of us will experience. J. O. Parker is more than an artist. His work embodies the skills, perceptions, and energy to bring into the world something others can't imagine. For many years, the work of J. O Parker went unrecognized. Part of an Arkansas Hi-way attraction the author uncovered this story of an individual's creative vision and artistic growth. This presentation raises the question of recognizing and understanding those with hidden talent in the classroom. Slides and original artworks will be shown.

Use of a Discriminative Auditory Cue in Simulated Landing Flares

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The transition from a controlled descent to actual contact with the runway surface is crucial to a successful landing. That transition is known as the landing flare and allows the aircraft to gently settle on its main landing gear. Nevertheless, landing flare accident rates are relatively high and past studies have implicated flaws in flare instruction. This study tested the effectiveness and ergonomics of an alternative landing flare method. Twenty-six participants with no prior aviation background were trained to land a Cessna 182S simulator. Control participants were provided with traditional landing flare instruction and experimental with a discriminative auditory cue. Results indicated that control participants flared significantly higher, registered higher impacts at touchdown, and appeared to initiate the flare in a trial-and-error fashion. Thus, applying simple behavioral concepts to flare training may facilitate proper flares and reduce landing flare accidents rates.

Economic Comparisons of Three Cropping Systems

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Historically, Oklahoma farmers use their cropland to produce continuous mono crop wheat. Declining trends in wheat prices along with rising costs of farm inputs have many producers asking what, if any, are the alternatives to producing mono crop wheat. The objective of this research was to provide economic comparisons between mono crop wheat grown continuously and two alternative cropping systems. A three-year study (1998-2000) was conducted at Lahoma, OK, on a Grant silt loam (fine-silty, mixed, superactive, thermic Udic Argiustoll) to determine net returns above all specified cost from three cropping systems. The cropping systems included mono crop wheat (*Triticum aestivum* L.), mono crop soybean [*Glycine max* (L.) Merr.], and 3-crop/2-year (early-season soybean, winter wheat, double crop soybean in a biennial rotation). Statistical results indicate that returns across systems were not significantly different. Average net return for the 3-crop/2-year system of \$187 ha⁻¹ outperformed both mono crop wheat and mono crop soybeans, which returned \$140 ha⁻¹ and \$135 ha⁻¹, respectively. Net returns over all years of the experiment ranged from a high of \$312 ha⁻¹ for the 3-crop/2-year system in 1998 to a low of -\$53 ha⁻¹ in 2000. The 3-crop/2-year and the mono crop soybeans had a much higher level of variation than did the mono crop wheat.

Nutrient Uptake of the Loblolly Pine/Herbaceous Vegetation/Microbial System: Effects of Fertilizer Date of Application and Formulation

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Approximately 15 million acres of forestland are fertilized each year in the southern United States, and current forest fertilization practices (broadcast applying urea/DAP in late winter) are frequently associated with low nutrient uptake efficiencies. This study was established to explore the effects of timing of fertilizer application and fertilizer formulation on the nutrient uptake of the loblolly pine/herbaceous vegetation/microbial system in southeastern Oklahoma. Fertilizer treatments were applied on a bi-monthly regimen in 2001 to capture a wide range of environmental and phenological conditions. Conventional urea/DAP fertilizers were compared to a slow-release coated urea fertilizer (CUF) to assess the effects of fertilizer formulation on nutrient uptake. Glyphosate (Accord) herbicide was used to control herbaceous vegetation in select treatments. The nutrient contents and biomass development of loblolly pine and herbaceous vegetation were measured monthly from February 2001 to present, as were microbial biomass and available soil nitrogen. The foliage nitrogen uptake efficiency (NUE) of loblolly pine was significantly greater in response to fertilizer treatments applied in warmer, wetter conditions than those associated with conventional (late winter) forest fertilization treatments. Foliage N accumulation was consistently higher in response to urea/DAP and CUF when applied in conjunction with glyphosate, and N accumulation in response to the two fertilizers was similar. The April application of urea/DAP in conjunction with glyphosate produced the greatest biomass growth response of loblolly pine in 2001. Herbaceous vegetation appeared to be a significant sink of applied nutrients; the biomass growth response of loblolly pine to fertilization was less dramatic in plots where herbaceous vegetation was present. Microbial biomass did not appear to be a significant sink of applied nutrients since no appreciable increase in microbial biomass was found after fertilizer was applied. The microbial biomass seems to be limited more by C than N since microbial biomass was significantly reduced in plots where herbaceous vegetation was removed with herbicide, even in plots where fertilizer was applied in conjunction with herbicide.

Response of Old World and Little Bluestem to a Spring Prescribed Fire - (Whiteman Competition)

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Ten plots (2 x 4 m) each of Old World bluestem ([OWB], *Bothriochloa ischaemum* [L.] Keng) and little bluestem ([LB], *Schizachyrium scoparium* [Michx.] Nash) containing other grasses and forbs, were spring burned or not burned to determine if an exotic grass (OWB) differed from a native grass (LB) in response to fire. Although they are taxonomically related bunchgrasses, OWB and LB have continentally separated origins (Old vs New World) and different selection histories (OWB for rapid growth vs LB for persistence). Following burning in April, clipped samples were harvested 12 times over 168 d to estimate primary production (PP) of total herbage, either grass (OWB or LB), other grasses, and forbs, along with phenological stage (to estimate maturity) and percentage leaf or stem for either grass from May to September. All response variables were regressed on days after burning, using the extensively researched LB as a reference for OWB, which has limited data on its response to fire. Burning reduced ($P < 0.01$) PP of total herbage (1475 vs 2391 kg/ha), other grass species (190 vs 706 kg/ha), and forbs (27 vs 250 kg/ha) for 40 d post-fire, whereas burning did not alter ($P > 0.29$) PP of total herbage (6850 vs 7273 kg/ha), or other grass species (450 vs 670 kg/ha) at the end of the growing season. Burning increased ($P < 0.02$) PP of both grasses at the completion of the growing season (4727 vs 3062 kg/ha). Burning OWB plots eliminated ($P < 0.01$) forbs during the trial, whereas at 40 d post-fire, unburned plots had 126 kg/ha. Burning did not alter ($P > 0.44$) maturity, or percentage leaf or stem. Old World and little bluestem responded similarly to a spring fire, as burning increased productivity of both grasses, and had no effect on maturity, or percentage leaf or stem in either grass. This indicates that the dichotomous selection history of these two grasses has not influenced their response to spring burning, suggesting that prescribed fire can be an efficacious and sustainable management tool for Old World bluestem.

Bothriochloa ischaemum, *Schizachyrium scoparium*, Burning, Forage Production, Phenology

Planners: A Profile of NIPF Landowners in Southeastern Oklahoma Who Engage in Planned Forest Management

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In the United States, consumption of forest products is projected to increase sixty-nine percent. This increased demand is coming at the end of a twenty-year era where timber removal on National Forests has decreased, environmental regulations have increased, and urban sprawl is depleting productive forestlands. However, in order to meet the growing demand, domestic harvests will have to continue to increase. In Oklahoma, this is also evident. Between 1989 and 1999, pulpwood production increased an average of twelve percent and roundwood production averaged a thirty-four percent increase. Of 8.5 million acres of forestland in Oklahoma, 6.9 million acres are held by NIPF landowners (Birch 1994.) Finding out who these landowners are and what they are doing and what we can expect them to do is an important consideration in projecting timber supply and designing outreach programs.

Having a written management plan qualifies NIPF landowners to participate in cost-share assistance programs. Since creating a management plan is normally the first step in becoming a participant, more written plans would allow more market penetration of these programs. Management plans can be used to measure management and harvest activities on NIPF land, allowing more accurate projections for future land

use activities. Theoretically, landowners who have written management plans should be more likely to actively manage their land. Although encouraging landowners to develop a written plan is a goal of many outreach programs, historically less than five percent of NIPF landowners in the United States actually participate. There is a need for determining what deters landowners from this process and what can be done to increase the effectiveness of these programs.

To begin to meet these needs a mail questionnaire was used to survey NIPF landowners in southeastern Oklahoma. The first step in determining why landowners do not have written management plans is examining the characteristics of those that do. This study examines the characteristics of landowners in southeastern Oklahoma who have developed a written plan for their forestland.

Untitled: Poetry Manuscript in Progress

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"Untitled: Poetry Manuscript in Progress" will be a reading of selected poems written during my first three semesters of graduate study at Oklahoma State. Although I do hope to eventually find a title for this manuscript, I feel that Untitled presently represents my work as a whole rather well as it encompasses formal, experimental, lyric, epic, narrative, and non-narrative forms and modes. In particular, I am interested in the shift between modernist poems that seek a definite answer/message and postmodernist poems that purposefully avoid such endings and definitions. In addition, as I explore more open and indeterminate postmodernist modes of writing, I am also interested in how this shift potentially affects the poem's relation to audience and politics. Major themes of the manuscript include personal identity and relationships, anthropology, geography, medicine, religion, and consciousness.

Effect of High-Fat Diet on Leptin Production and its Relationship to Hyperinsulinemia

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The prevalence of lifestyle-induced obesity is increasing in industrialized societies, particularly in children and adolescents. Obesity increases the risk heart disease, hypertension, and type 2 diabetes mellitus (DM). High-fat diets contribute to increased body weight and body fat and the development of insulin resistance, an early stage in the development of type 2 DM and cardiovascular disease. The hormone leptin, which is produced by fat cells, reflects body fat stores, influences appetite, and appears to inhibit insulin action at the cellular level. This research examines the effect of a high-fat diet on glucose tolerance, body weight, body fat, lean body mass, and serum leptin concentrations in female rats during pre- and post-pubertal development. Twenty female weanling Sprague-Dawley rats were fed isocaloric diets containing either 22% or 39% of calories from fat for ten weeks. At five weeks of diet treatment, animals were subjected to biweekly oral glucose challenges of 2 g/kg body weight. Blood collected during these procedures was analyzed for glucose, insulin, and leptin concentrations. At six, eight, and ten weeks of treatment, animals underwent body mass analysis by dual X-ray absorptiometry (DXA). Animals were necropsied following the final DXA, and final blood was collected for analysis of insulin and leptin. High-fat fed animals

demonstrated significantly increased insulin and leptin secretion at baseline and in response to the oral glucose challenges. Despite similar energy consumption, body weights of the two groups diverged after six weeks of diet treatment. There were no differences in lean body mass between groups at any time. Body fat mass and percent body fat were significantly higher in the high-fat fed group. The data demonstrates that high-fat diets contribute to the development and persistence of insulin resistance by its effect on leptin and insulin secretion.

Influences of the Humpy Bumper on the Automotive Industry

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INFLUENCES ON THE HUMPY BUMPER ON THE AUTOMOTIVE INDUSTRY Since auto racing began in earnest in the early 1900's the sport has witnessed countless fatal accidents and serious injuries, particularly on oval race tracks. The problem is not with oval tracks themselves, but with the inherent high speeds on ovals and the rigid concrete walls which protect the viewing public from an out of control race cars. We all know what happens when a high speed vehicle strikes an immovable object such as a wall. The driver can be seriously injured. In the aftermath following the tragic on-track deaths of NASCAR drivers Adam Petty, Kenny Irwin, and Dale Earnhardt, many questions have been raised concerning improving the driver safety in motor-sports. One area of safety that needs to be addressed is Race Car Crumple Zones. That is the issue this research will attempt to address.

In recent years, the automotive industry has improved the crash worthiness of passenger cars by the use of Crumple Zones in the front and rear of the cars. Crumple Zones are created by the integration of variable grades of steel and composites into the front and rear-end assemblies of the automobile. These Crumple Zones yield during impact, redirecting the energy of the collision, often reducing the chance of injury to the driver. One of the newest developed safety precautions is the Humpy Bumper, developed by Lew Composites of Las Vegas. The Humpy Bumper is a uni-directional graphite composite that is designed to withstand the normal bumping and rubbing of stock car racing without damage. However, when a big hit occurs the bumper sacrifices itself in the process of dissipating energy.

Finite Element Analysis: Changes Within the Master Model of Sofia Section 46 and the 477 Bulkhead of the P-3c

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FINITE ELEMENT ANALYSIS: CHANGES WITHIN THE MASTER MODEL OF SOFIA SECTION 46 AND THE 477 BULKHEAD OF THE P-3C Finite element analysis is a tool used to reproduce a structure electronically, then that electronic model is tested to see how the real structure will react to various situations. In this paper, parts of a Boeing 747SP and the P-3C are explored through the perspective of finite element analysis.

The Boeing 747SP is used to explore the critical concept of the session file. It is also used to see how load shear and bending moment validation checks are performed within the MSC/PATRAN database, employing

MSC/SuperModel, to ensure each load condition defined within the MSC/PATRAN database matched the loads experienced by the actual airframe.

The 477 Bulkhead of the P-3C aircraft is also examined. Here, this bulkhead is used to explore the correction of mismatched element coordinate systems, as well as the importation of Pro/E assembly geometry into a PATRAN database to provide a 3-D solid representation of the P-3C airframe redesign.

Dynamic Yield Analysis and Enhancement of FPGA Reconfigurable Memory System

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This paper deals with the issues of FPGA reconfigurable memory system with faulty physical memory cells and proposes yield measurement techniques. Static yield and dynamic yield of FPGA reconfigurable memory systems and their characteristics are extensively analyzed. Yield enhancement of conventional memory systems relies on additional redundancy, but FPGA reconfigurable memory systems have inherited redundancy and customizability. Thus, they can accommodate numerous target memory configurations and redundant memory cells, if any, can be used as spares to enhance dynamic yield of the target memory configuration. Three fundamental strategies are introduced and analyzed: redundant bits, redundant words and combination of both. Mathematical analysis of those techniques also has been conducted to clarify their effects on yield. Selecting the most yield enhancing logical memory configuration which can accommodate the given target memory requirement among candidate configurations is referred to as optimal fitting. Optimal fitting algorithms for single configuration fitting, sequential reconfiguration system (SRS) fitting and concurrent reconfiguration system (CRS) fitting are proposed and analyzed based on the yield analysis techniques.

Building a Better Student: Holistic Education

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This presentation will be on the preliminary work from a study of holistic education. Holistic education seeks to make connections within its curriculum and, in turn, correct the mistakes that traditional American education is making. Traditional education, with its fragmented curriculum, fails to create an educational environment that fosters these kinds of connections

Within the confines of holistic education there is not one set agreed upon definition of what makes up holistic education. Holistic education, in general, is a concept that was developed to present students with a more well-rounded education than what they receive in a traditional school. Holistic education teaches subjects, ideas and topics in relation to other subjects, ideas and topics. It seeks to demonstrate the interconnectedness of the world by connecting all traditional subjects in a single curriculum.

There are, however, several specific points that all holistic authors and educators agree upon. The first agreed upon idea is that holistic education is to educate the mind, body and spirit of the child. This idea is one of the biggest differences between holistic education and traditional education. Most schools educate

the mind and body of children, but the spirit is neglected. Holistic education sets out to right this perceived wrong.

The next common idea is that of an integrated curriculum. This is something that is vital to holistic schools. The use of curriculum integration is not only important to holistic schools because it teaches the interconnectedness of the world, it also is used to aid students in their learning process. Since holistic education stresses that all things should be viewed in relation to everything else, it is a much more all encompassing view of curriculum integration than that of traditional education.

A similar thought, and third common idea, that all holistic educators subscribe to is the use of the integrated curriculum to teach the students a new way of thinking. The interconnected curriculum is not only to help the students learn in a better way, it is to teach them about the wholeness of the world around them. Since traditional schools teach in a fragmented curricular style, it teaches their students a fragmented world-view and a fragmented way of thinking.

Holistic education, when properly done, can be a tremendous educational force that students should experience. Its approach to education, such as curriculum integration, creating connections, and studying topics instead of fragmented curricular subjects, is a quality approach to helping students learn and should be encouraged in all schools.

Response of Herbaceous Plant Communities to Timber and Fire Management in the Pushmataha Forest Habitat Research Area, Oklahoma

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An ecological study in the Pushmataha Forest Habitat Research Area reveals the affects of timber and fire management on the understory plant composition. Grass and legume species dominate the burned treatments, whereas *Toxicodendron radicans* and several tree species dominate the unburned treatments and the control. Species richness in the unburned and burned treatments differ significantly. Canopy cover and the number of times each treatment has been burned are negatively correlated. The understory community composition is aligned along a canopy cover gradient. Clearcutting, canopy cover, and the number of burns over 17 years significantly change the understory species composition.

Non-Lipschitzian Dynamics to Improve Some Properties of Neural Networks

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Neural Networks as a powerful tool for system modeling, signal processing, pattern recognition, pattern classification, and optimization are known. However these models in comparison with biological neural systems have a lot of limitations. Their performance is predictable, while the biological data from brain and neural systems in microscopic and macroscopic view - such as neurotransmitter density between two neurons, and EEG graphs - show that neural systems are unpredictable and chaotic. These artificial neural networks do not forget their past without new input from outside, but biological systems are more flexible

and adaptive. From the viewpoint of stability condition, these networks satisfy Lipschitz condition in which the elements of Jacobean matrix of the dynamical system must be limited.

This work addresses the problems of artificial neural networks and how the non-Lipschitzian neural network due to the Lipschitz condition's failure at the equilibrium points of the dynamical system - can improve some of these problems. As a result, we can see the increasing of memory capacitance by using this dynamic added to Hopfield neural network.

Keywords: Neural Networks, Dynamical Systems, Chaos Theory, Lipschitz condition

Online Distance Education in South Asia With Special Reference to India

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With the world population crossing the five billion mark, and the changes that have come in the post-industrial society as far as the educational needs of the individual and society are concerned, a slow but radical change in the quality, quantity and delivery systems of education in general, and adult education in particular is inevitable. With dwindling resources, unqualified teachers, and problems of infrastructure, the only answer to educating the masses in these countries seems to be through the mode of distance education, and the new technology of the Internet and cyberspace education may provide both a viable and economical solution to educational problems in these countries. In this paper, an attempt has been made to define and outline the theoretical base for distance and cyberspace education, where Boyd's model is considered as comprehensive. The advantages of distance education like quality, accessibility, cultural biases etc. are discussed next. Issues and problems associated with Internet based education in India and South Asia are outlined. Illiteracy, accessibility, economic problems, red-tapism, and international and regional cooperation are identified as the main problems for Internet based distance education. There is a focus on the unique problems and solutions which south Asia may have in solving these problems. An argument is made for the viability and significance of Internet based education in South Asia in general and India in particular.

Benefits of Reflective Teacher Evaluation

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Every teacher who has a passion for student learning, and who takes great responsibility for doing everything possible to help students succeed, has a need for meaningful feedback that must be met in order to maintain that passion. The very nature of a clinical observation checklist, used in most public schools today, thwarts the possibility of meaningful learning from the teacher's perspective. In contrast, from the observer's point of view, one can see the difficulty of walking in to the middle of a teaching unit and trying to decipher the teacher's goals and the purposes of the activities taking place. In addition, the lack of follow up observation to measure student learning resulting from the lesson is problematic. Given this paradox, the need for a more productive method of teacher assessment is apparent.

Teacher assessment affects every aspect of the learning process between teacher and students. Wood's (1992) research shows that teacher who feel validated, challenged and appreciated for their contribution are

more likely to want to improve and learn more about teaching. In stark contrast to this recommendation, standardized checklists used nationwide for teacher assessment list generalized goals with a simple rating scale to indicate whether the supervisor observed these qualities. Of utmost importance are indicators such as establishing a clear objective, sequence and closure, but omitted are any references to students' learning, participation or indications of student understanding. Problems with this impersonal method seem obvious, for anyone who has been in a real classroom knows that good teachers do whatever it takes to help children learn, and these qualities may or may not be included in a standardized list.

Rowe (2000) suggests that no matter what type of appraisal is used, the evaluation that is most meaningful is one that is self-directed. A continued challenge for those involved is designing a teacher evaluation and supervision system that contributes to professional development and provides an accountability measurement. I argue not that we can't, but that we shouldn't. Accountability is by its very nature something that is measured, and is only applicable to concrete employee behaviors such as punctuality, attendance and record keeping. In contrast, I argue that effective teaching cannot be measured or improved by a standardized scale used to monitor concrete behaviors. What Wood (1992), Schwarz, Alberts and Hudgens (2001) suggest is a process by which the teacher and supervisor work together to choose an area that the teacher wants to improve or explore. In a nine-stage process, teachers do a guided self-evaluation including reflection, research and goal setting for professional development in this area. A process of monitoring progress, narrative feedback, and a final written self-evaluation provides evidence of changes made. As research indicates, this method shifts control of assessment and professional development from the supervisor to the teacher, and thus empowers teachers themselves to make educational improvements within classrooms, schools and districts. Our children benefit, because they gain confident teachers who are constantly searching for ways to better serve students.

The Embodied Curriculum: The Overweight Elementary School Student

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This presentation highlights preliminary findings of a qualitative study that looks at the body in general and overweight children in particular at the elementary school level. Using postmodern and feminist notions of the body as a framework, this presentation will review findings that draw attention to the contradictory and multiple spaces in which bodies in schools are given constructed meanings. Issues such as imposed self-control, cleanliness and its attendant teasing, body regulations by both students and the institution, and the prohibitive environment that does not allow students the ability to meet their own routine bodily functions, all act as sites where the body in school is inscribed with meaning. Along with these findings is a focus on the implications of the body in schools that have particular bearing on the elementary overweight and obese child. The school sites for this study are one inner-city school and one with mixed demographics. Data collection of field notes, interviews, and document analysis occurred over five months.

Determining the Intrinsic Q of a Microsphere Whispering-Gallery Mode from its Temporal Response

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Laser light is injected into a whispering-gallery mode (WGM) of a fused-silica microsphere using a tapered-fiber coupler. When the laser frequency is scanned through the WGM resonance, the fiber output shows a dip whose full width at half maximum is a result of the small intrinsic (due mainly to surface scattering) and coupling losses. When intrinsic and coupling losses are equal (critical coupling), the output dip goes all the way to zero. If the losses are unequal, the dip depth allows one to determine their ratio, but not which loss is larger (whether the WGM is undercoupled or overcoupled).

The method used here employs the temporal response of the output signal to a resonant input square pulse at a wavelength of 1550 nm. We measure the fill and decay responses to the amplitude-modulated input. The temporal response is qualitatively different for undercoupled and overcoupled WGMs.

Measuring the decay time gives the loaded Q (total loss), which value can be compared to that found from the width of the frequency-scan dip. Measurement of other features of the response gives the value of the ratio of coupling loss to intrinsic loss, thus determining the intrinsic quality factor Q_i (intrinsic loss only). This technique therefore allows the separate determination of the total, coupling, and intrinsic losses without physically moving the coupling fiber or microsphere.

Anaplasma Marginale Major Surface Protein 1a as an Adhesin: Identification of the Functional Region of the Protein

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Major surface protein (MSP) 1 of the cattle pathogen *Anaplasma marginale* is a heterodimeric protein complex composed of two structurally unrelated polypeptides, MSP1a and MSP1b. MSP1a is derived from a single gene and contains tandemly repeated peptides in the amino-terminal portion of the protein. The number and sequence of these repeats varies among geographic isolates of *A. marginale* and has been used as a marker of isolate identity, while the remainder of the protein is highly conserved. Because the number of MSP1a repeats varies among isolates, some of which are not transmissible by ticks, this portion of the protein is most likely to be involved in infectivity for ticks. MSP1a was recently shown to be an adhesin for bovine erythrocytes and tick cells, while MSP1b was found to be an adhesin only for bovine erythrocytes. The purpose of this study was to identify and characterize the functional region of MSP1a involved in adhesion. Recombinant *Escherichia coli* expressing the Oklahoma isolate MSP1a were used to study the adhesive properties of native and mutant proteins. Three mutants were constructed and expressed in *E. coli* in order to define the adhesive region of the protein: (1) a protein containing only the N-terminal of MSP1a with the tandem repeats (2) a mutant MSP1a lacking the repeats, and (3) the nonadherent MSP1b that was fused with the MSP1a repeats. Recombinant *E. coli* expressing MSP1a with the tandemly repeated peptides were adherent to tick cells, while the adhesive capacity was abolished for recombinant *E. coli* expressing MSP1a without the repeats. Furthermore, *E. coli* expressing the mutant MSP1b that was fused with the repeats changed the MSP1b from a non-adhesive to an adhesive phenotype. These experiments demonstrated that the repeated peptides of MSP1a are necessary and sufficient to mediate adhesion of recombinant MSP1a to tick cells. In order to further define the functional part of the repeated region, synthetic peptides representing each of the predominant repeated sequences were synthesized. The adhesive

capacity of the peptides for tick cell extract (TCE) was evaluated using an in vitro binding assay. Peptides containing acidic amino acids D or E at position 20 bound to TCE, while peptides with a G as the 20th amino acid were not adhesive to TCE. These results suggest a critical role for the 20th amino acid in the adhesion function of the repeated peptides. These studies demonstrated the functional importance of the MSP1a tandem repeats in adhesion of *A. marginale* to tick cells, which is a prerequisite to invasion and transmission of this tick-borne pathogen.

Effects of Harvest Date and Late-Summer Fertilization Rate on Dry Matter Yield and Chemical Composition of Stockpiled Bermudagrass Forage

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A randomized block design with four replications was used to test effects of nitrogen (N) fertilization rates and harvest dates on yield and chemical composition of stockpiled Greenfield bermudagrass at the Eastern Research Station near Haskell, OK. Four N fertilization rates were applied on August 17, 1998 (0, 34, 67, 135 kg/ha) and forage was sampled at five 28-d intervals beginning on November 5. During late April, prior to the experiment, 112 kg N/ha was applied and P & K was applied as indicated by soil test. Hay was harvested from the plots during early June and again during early August. During each harvest date, forage samples were collected from a 0.25 m² area within each plot. Near infrared reflectance spectroscopy (NIRS) was used to determine chemical composition which included crude protein (CP), soluble protein (SP), degradable protein (DG), neutral detergent insoluble crude protein (NDICP), acid detergent fiber (ADF), neutral detergent fiber (NDF), lignin (LIG), non-structural carbohydrate (NSC), fat, and ash. Total digestible nutrients (TDN) and relative feed value (RFV) were calculated. Fifteen percent of the samples were also analyzed using wet chemistry to validate the NIRS values and NIRS was adjusted accordingly. Monthly precipitation was 16.1, 21.4, 9.2, 5.9, 6.6, and 5.8 cm for September, October, November, December, January, and February, respectively. Forage dry matter yield for the N fertilization rates of 0, 34, 67, and 135 kg/ha was 3430, 4192, 5313, and 8384 kg/ha. As nitrogen rate increased, there was an increase in CP, SP, DP, and NDICP. Increased N fertilization also increased TDN and RFV, but the increased N rates lead to a decrease in ADF, NDF, LIG, and FAT. Ash and NSC were not affected by N rate. As the winter progressed, there was a decrease in CP, SP and NDICP, but an increase in DP. Also, with the later harvests, there was an increase in ADF and NDF, but decrease in NSC, with no change in LIG or TDN. The later harvest dates also showed a decrease in FAT and ASH. Stockpiled forage, Grazing costs, Beef Cows

Effect of Species Removal on Mesocarnivore Community Habitat Use in a Fragmented Cross Timbers Ecoregion

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Widespread increases in mesocarnivore populations are one result of habitat fragmentation; competition among mesocarnivores that use similar habitats is a likely consequence. A removal study was conducted by live-trapping 2 mesocarnivores, opossum (*Didelphis virginiana*) and raccoon (*Procyon lotor*), for 1 year (2000-2001) in 8, 32.4-ha heterogeneous pastures of 4 major habitat types (deciduous, cedar, grassland,

mixed forest) on the Cross Timbers Experimental Range, Oklahoma. Raccoons were removed from 4 pastures. My main objective was to describe aspects of habitat selection by opossums after raccoon removal at a micro- and macro-habitat scale. A total of 176 opossums were captured 303 times (158 removal, 145 control) and 80 raccoons were captured 100 times (28 removed, 72 control). Thirty-one female opossums were radiocollared and tracked. Habitat variables were measured in the understory, overstory, and at a scale of vegetation association. These data were used to analyze trap site and telemetry selection differences. Ordination analyses indicated that opossums shifted at the microhabitat scale toward the cedar forest type when raccoons were removed. Analyses at the trap site, den site, telemetry and landscape levels revealed no selection differences upon raccoon removal. The 2 species selected habitat differentially from availability, with raccoons being caught least often in the deciduous forest, and opossums preferring deciduous forest and avoided grasslands. Ground dens were preferred by opossums over other den types. Niche breadths were very high for both species, but niche overlaps varied. Overlap in terms of trap site habitat between raccoons captured pre-removal and opossums captured post-removal was high, lending further evidence to the shift documented at the microhabitat scale. I conclude that opossums and raccoons are competing at a microhabitat scale. The particular resource of interest is unknown and additional studies focusing on aspects of fine-scale resource use should be addressed.

A Conflict of Identity: Joseph Bruner, the American Indian Federation, and the Indian New Deal

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This study examined the life of Joseph Bruner, president of the American Indian Federation. The AIF formed in 1934 to protest the Indian Reorganization Act and other reforms championed by Commissioner of Indian Affairs John Collier. Bruner's views led to a personal conflict between himself and Collier. This work argued Bruner managed to develop a unique identity by combing his traditional, Native-American heritage with his assimilation values.

Student Computer Anxiety, Experience, Confidence, and Their Support Needs

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Topic: Student Computer Anxiety, Experience, Confidence, and Their Support Needs.

Significance:

There is a need to know more about how various options for computer support are perceived by persons of varying levels of computer anxiety, experience and confidence. Why, for example, do so many efforts at providing computer support go unappreciated and unused in spite of great need? What type of help do students need when they have computer needs? This research examined how attitudes and experience work together in getting support for various computer-related task.

When referring students to get help, how do you know when to send them to an expert, or an intelligent agent? Participants will gain some insight into the nature of these questions that they can turn into better principles of design.

Presentation:

What keeps a student going in the face of computer adversity and confusion? This research investigated the nature of student computer anxiety, experience and confidence at various tasks, their perceived support needs, and improvement in confidence when given the support they desire.

The presentation will include a summary of OSU students computer support needs in light of their levels of computer anxiety, their experience and confidence at various tasks on the computer.

Participants will learn about the nature of (differences in) task-specific student attitudes and their support needs. They will learn about how differences in computer anxiety relates to computer task-specific experience, confidence, desire/needs for support and how students respond to their support.

Educational Goals & Occupational Aspirations: Factors for Mexican American Women in College

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The research paper details findings of a qualitative investigation of factors impacting both the educational goals and occupational aspirations of Hispanic and Mexican American women attending a south Texas community college.

Hispanics enter higher education via the community college where approximately 50% seek education for specific occupational programming and 50% seek an associate's degree for transfer to four-year institutions. Hispanics have the lowest educational attainment levels of all major ethnic groups, with Mexican Americans experiencing the lowest levels among Hispanics. As a result of low educational attainment, occupational distribution is concentrated in low skill, low wage jobs. Often, Hispanic children have limited exposure to occupations outside their family's occupational reality. Gender expectations can make educational attainment even more difficult to achieve for female Mexican American college students.

The purpose of this study was to describe the cultural, social, and educational factors related to occupational aspirations of Mexican American women attending a south Texas community college as perceived by the study's participants.

The issue of educational and occupational attainment for Mexican American women cannot be examined in a vacuum; schooling, work and family are highly interdependent factors, where a discussion of one factor eventually leads to the inclusion of the other two (Ortiz, 1995). This investigation was developed as a descriptive qualitative study that viewed occupational education through the lens of critical theory. Gender roles, access to resources, and lack of role models factored heavily in the college experiences of the study's participants.

This study is significant because it presents culturally sensitive findings on a growing, yet understudied, population of college students. By gaining an understanding of the lived experiences in schooling, work and the family life of Mexican-American women in college, postsecondary institutions may develop more effective means of retaining these at-risk students and assisting them in reaching their educational and occupational goals.

Comparison of Silver and Gold Iodide Complexes with Crown Ether Encapsulated Alkali and Alkaline Earth Cations

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Consideration of a series of complexes formed by silver iodide and gold iodide with a series of crown-ether encapsulated cations reveals significant differences in the complexes formed. Gold consistently forms linear AuI₂- structures as seen in cesium benzo-15-crown-5 AuI₂, cesium dicyclohexano 18-crown-6 AuI₂ and potassium benzo-15-crown-5 AuI₂. Silver, on the other hand, forms a wide range complexes with iodide in the presence of the same cations. For example, cesium dicyclohexano 18-crown-6 AgI₂, and potassium benzo-15-crown-5 exist with flat Ag₂I₄ rhombohedra showing three coordinate silver atoms bridged by two iodide atoms and completing their coordination spheres by ligation to a terminal iodide atom. These structures are similar to that seen for potassium benzo-15-crown-5 CuI₂. However, cesium benzo-15-crown-5 forms two different polymeric complexes with AgI: cesium benzo-15-crown-5 Ag₃I₄ exists as a polymeric double-band of edge sharing Ag₂I₂ rhombs with adjacent edge silver atoms bridged by an additional iodide, whereas cesium benzo-15-crown-5 Ag₂I₃ with a polymeric single ribbon of edge sharing Ag₂I₂ rhombs with every other rhomb bridged by an additional iodide atom in an up, up, down, down sequence, also exists. With barium, benzo-15-crown-5 silver iodide forms a monomeric Ag₄I₈₋₄ unit with three corner sharing Ag₂I₂ rhombs. Both three and four coordinate silver are seen.

Physical Properties of a Short-type Pasta Product from Peanut Flour

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Defatted peanut flour, a by-product of oil production, is under-utilized for human consumption. Recently a lot of attention has been focused on the nutritional benefits of plant-based proteins in the diet to help reduce the incidence and complications of diseases such as cardiovascular disease and diabetes mellitus as well as increase the nutrient content of the typical U.S. diet. Defatted peanut flour offers a good source of low-cost, low-cholesterol, low-saturated fat, nutrient dense protein that can be incorporated into a food product such as pasta, a popular food item in the U.S. and many other countries Worldwide. However, information on peanut flour in pasta is limited to Chinese-type noodles containing 15% peanut flour. The objective of this study was to investigate physical properties of a short pasta-type product made with defatted peanut flour (PF: 58.5% protein, 1.3% fat). A Box-Behnken design for a 5² incomplete factorial arrangement of PF (0, 20, 40, 60, 80%) and guar gum (GG: 0.5, 0.75, 1.0, 1.25, 1.50%) was used in a standard short-pasta formulation. Pasta treatments were dried (21C, 23% RH), then after 72 hours they were cooked and color (Minolta chroma-meter) and texture profiles (TZ XT2i Texture Analyzer fitted with an Ottawa Cell) were evaluated. Commercial elbow macaroni was used as the control. Response Surface Methodology was used to estimate the quadratic response surface for each physical property from the equation:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_1^2 + b_4X_2^2 + b_5X_1X_2$$

Where Y = dependent variable, b₀ = intercept, b₁-b₅ = regression coefficients, X₁ = PF, and X₂ = GG.

Pasta became browner (hue: 93.7±0.97 – 78.5±0.70) as PF was increased from 0-80%. At 80% PF, L value increased from 61.6 to 66.2 as GG was increased from 0.5-1.2%, then decreased to 64.9 at 1.5% GG. There was no significant difference in hardness (g/force, compression) between the experimental treatments and

the control. Cohesiveness increased as the GG was increased and as PF was increased above 29%, but was not affected with $PF \leq 28\%$. Experimental pasta formulations containing 60% PF + 0.7% GG to 80% PF + 1.3% GG would have cohesive properties similar to the control (0.13 ± 0.019). Springiness increased from 0.25 to 0.56 as PF was increased from 30-80% GG at $<0.9\%$ had little effect on springiness, but $GG > 0.9\%$ increased springiness. Springiness of the control was 0.49 ± 0.262 . Results indicate that a product containing 60-75% defatted peanut flour and 0.75-1.2% guar gum, although tan in color, would have similar textural attributes to commercial short pasta

Spatial Distribution of Boone & Crockett and Pope & Young White-tailed Deer: 1991-2000

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This research examines the spatial distribution of Boone & Crockett (B&C) and Pope & Young (P&Y) record book white-tailed deer (*Odocoileus virginianus*) entries from 1991-2000. In total, 17,053 entries were mapped for this time period, including 2,576 B&C entries and 15,043 P&Y entries. Record book data was obtained from the B&C and P&Y clubs. All data was entered into a Geographic Information System (ArcView 3.2) and mapped at the region, state, and county level, providing a visual image of areas producing record book white-tailed deer. The B&C and P&Y entries were mapped separately to show differences in distribution patterns and combined to show a complete distribution of all record book entries. In total, 1,897 counties, or 60% of the counties in the United States, recorded at least one entry. The largest concentration of entries occurred in the upper Midwest, although significant clustering of entries occurred in several outlying regions. Clustering of entries occur in relation to large metropolitan areas, major river systems, and lower deer densities. As the largest data set available on the spatial distribution of record book white-tailed deer, this research is useful to anyone interested in designing management strategies to increase buck age structure and antler size.

Effect of Previous Liveweight Gain on Visceral Organ Mass and Oxygen Consumption in Cattle During High-Grain Feeding

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Forty-eight fall-weaned crossbred steers (231 ± 25 kg) were used in a completely random design to determine the effect of previous liveweight gain on visceral organ mass and oxygen consumption. During the 143-d growing phase, treatments were high (HGW; 1.28 kg/d) or low (LGW; .48 kg/d) daily BW gain on wheat pasture or dormant native range (NR; .21 kg/d). Before finishing, four steers per treatment were harvested, organ mass recorded, and oxygen consumption by liver, ruminal epithelium, and duodenal tissues was measured. All remaining steers were individually fed a high-grain diet for 86, 111, and 162 d for HGW, LGW and NR, respectively, to a common 1.27 cm of backfat. At final harvest, six steers per treatment were selected for harvest to obtain organ mass and measure oxygen consumption. Initial empty body weight (EBW) was greater ($P < .01$) for HGW steers than LGW, which were greater than NR steers ($345 > 280 > 197$ kg EBW, respectively). Rumen and small intestine (g/kg EBW) were greater ($P < .01$) in NR than HGW or

LGW. Similarly, total gastrointestinal tract (GIT) were greater ($P<.01$) in NR than HGW and LGW (80.3>59.1 and 67.4) Whereas total splanchnic tissues (TST) were similar in NR, HGW and LGW (108.3, 102.6 and 104.8 g/kg EBW, respectively). Initial oxygen consumption by the liver was greater ($P=.02$) in HGW and LGW than NR (35.2 and 33.8>16.2 mL/min/tissue), whereas duodenal initial oxygen consumption was greater ($P=.02$) in LGW than HGW or NR (12.06>5.77 or 4.97 mL/min/tissue). Initial ruminal epithelium oxygen consumption in HGW was greater ($P=.03$) than NR. During finishing, NR steers increased EBW at a greater rate ($P<.01$) than either HGW or LGW (2.24>1.94 and 1.72 kg/d). In contrast, change in GIT and TST were less ($P<.08$) in NR than HGW and LGW steers (-.12<.04 and .01, and .01<.09 and .09 g/kg EBW/d, respectively). Native range steers had a greater rate of EBW gain and a lower rate of GIT and TST gain than HGW or LGW steers. Coupled with lower oxygen consumption by splanchnic tissues, this could relate to an increased efficiency of energy use for maintenance during feedlot finishing in NR steers.

Isolation and Identification of Culturable Bacteria From the Crown Tissue of Bermudagrass (*Cynodon Dactylon* (L.) Pers.)

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Bermudagrass (*Cynodon dactylon* (L.) Pers.) is a warm season grass. Many varieties of bermudagrass are resistant to heat, drought, and wear. These varieties are used extensively in the sunbelt of the United States, Australia, and New Zealand. Bermudagrass is planted in urban areas to increase esthetic beauty around buildings, parking lots, and homes, on roadsides and ditch banks to prevent erosion, and in recreational areas, athletic fields, and golf courses. The state of Oklahoma makes extensive use of bermudagrass. The estimated replacement cost for bermudagrass turf in Oklahoma is \$1.7 billion dollars. The single most destructive disease of bermudagrass in Oklahoma and Kansas is Spring Dead Spot (SDS) caused by the fungus *Ophiospharella herpotricha* (Fr.:Fr.) J. C. Walker. Currently there is not a biological control agent against the pathogen. The Oklahoma and Kansas Cooperative Extension Services does not recommend the use of fungicides against SDS because of erratic results. They recommend controlling SDS through labor intensive cultivation practices. Biological control is a widely accepted alternative in controlling pests and a reasonable alternative in controlling SDS. My first research objective is to isolate culturable endophytic bacteria from crown tissue of the resistant variety of bermudagrass, Midlawn, and a susceptible variety, Tifgreen. I will assay infected and non-infected Midlawn and Tifgreen crown tissue. My second objective is to survey the endophytic bacteria for anti-*O. herpotricha* properties. Preliminary results showed 17 bacterial isolates with a high degree of anti-*O. herpotricha* properties. It is hoped a bacterial isolate will be further investigated as a suitable biological control agent against *O. herpotricha*.

A Survey of Wheat Production and Wheat Pasturing Practices in Oklahoma

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Wheat is the number one crop in Oklahoma. Southern Great Plains has the privilege to be able to produce wheat for three purposes, grain or forage-only or for a dual-purpose forage and grain crop. In a dual-purpose system, the wheat is available for grazing by livestock from late November until development

of the first hollow stem, usually in early March. Then the wheat will mature and produce a grain crop for harvest in June. The use of winter wheat as a forage-only and dual-purpose crop plays an important role in the agricultural economies of the Southern Great Plains. However, the United States Department of Agriculture (USDA) does not differentiate among wheat uses in data collection and reporting. Estimates of the number and class of animals stocked on wheat pasture are also not provided by the USDA. Some of the important production practices and management decisions regarding wheat production vary depending on the intended use. However, very little information is available on actual production practices. Dual-purpose wheat production is a complicated process. Comprehensive strategies to maximize returns to the dual-purpose wheat enterprise have not received much attention.

The overall objective of this survey study is to determine production and management practices, with special emphasis on pasturing of wheat, used by Oklahoma wheat producers. The objectives also include determining the proportion of wheat grown for each of the three purposes. The information obtained in this survey will aid the public and extension workers in monitoring the actual management and production practices in wheat production, and provide relevant support to wheat farms in Oklahoma.

A survey form was developed and revised in the division of Agricultural Sciences and Natural Resources of Oklahoma State University with cooperation of the Oklahoma Agricultural Statistics Service (OASS). To account for the variability of practices due to weather, soil, etc. in different parts of Oklahoma, the state was divided into six regions. A stratified sampling plan was used. Systematic random sampling within each region was used to select approximately 800 wheat producers from each region. Altogether, OASS selected a representative sample of 4,815 from the OASS database of Oklahoma wheat producers. Survey questionnaires were mailed on March 9, 2000 and a reminder postcard was mailed on March 15, 2000. A total of 1,090 usable surveys were received, which included more than 160 responses from each of the six regions. Thus, the response rate was 22.6%.

The results of the survey will be summarized in tables. Analysis of variance and multiple mean comparison procedures will be used to conduct hypothesis tests regarding production practice differences across intended use within each region and across region. The preliminary results show that the percentage of wheat acres in Oklahoma actually used for grain-only was 39%, forage-only was 22% and dual-purpose was 39% in the 1999-2000 season. Most respondents who reported use of wheat forage, grazed stocker cattle on their wheat pasture. Calendar date was by far the number one factor used to determine when to terminate grazing of dual-purpose wheat. On average livestock were removed from the dual-purpose wheat on March 3.

Influence of Cow Parity and Genetic Potential for Milk Production on Forage Intake of Brangus Females During Early Lactation (Whiteman Award Competition)

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Brangus females (n=24) were used in a randomized complete block design to evaluate the effects of cow parity (multiparous vs primiparous heifers; COW vs HFR) and genetic potential for milk production (MPP; HIGH vs LOW) on forage DMI. Females were selected for MPP based on their sire's EPD for milk. Initial weights were 553 and 446±14 kg for COW and HFR. Females were assigned to two periods by postpartum interval, each period averaging 60 d postpartum. Effects in the model included parity group and MPP, and period was considered a random effect. All females were placed in a drylot for a 7-d adaptation to the diet, followed by a 7-d adaptation in the barn and a 9-d collection period. Body condition score and BW were

determined at the beginning and end of the collection period. Average BW for the feeding period was determined and used to express forage DMI. Cow-calf pairs were penned individually and bermudagrass hay (5.3% CP and 76.4% NDF; DM basis) was offered ad libitum (130% of previous 2-d average intake). Cottonseed meal was fed at the rate of 0.4 and 0.5% of BW for COW and HFR, to ensure adequate protein supply. Hay, orts, and waste were weighed every 2 d. Fecal grab samples were collected at 1000 for 5 d. Milk production was determined on d 7 using a portable milking machine, following a 12-h separation from calves. Acid detergent insoluble ash was used to estimate DM digestibility (DMD). A trend (P=0.10) was observed for HIGH to produce 17% more milk than LOW (9.6 vs 7.9±.7 kg;). Cows produced 39% more milk than HFR (P<0.001). On an absolute basis, COW consumed 16% more forage DM than HFR (P<0.0001) and HIGH consumed 8% more forage DM (P<0.01) than LOW. When forage DMI was expressed relative to body weight, parity did not influence forage DMI (2.5±0.07 kg/100 kg BW; P=0.2). Yet, HIGH females consumed 7% more forage than LOW (P=0.02). Cows tended to have higher apparent DMD than HFR (51.8 vs 49.0±1.5%; P=0.06). When forage DMI is expressed relative to body weight, multiparous cows and primiparous heifers have similar intakes. Females selected for high MPP consumed more forage DM during early lactation than females selected for low MPP.

The Effects of Forgiveness

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The Effects of Forgiveness. Past research has shown that forgiveness can prevent certain psychological difficulties brought on by bitterness, anger, depression, and anxiety (Brandsma 1982) (Fitzgibbons 1986) (Hope 1987). A longitudinal study with the intervention of forgiveness and depression as the goal will be implemented with 100 male and female college students. The study will consist of two conditions; a disclosure and control condition. The purpose of this study is to examine the capability of a simple paradigm designed to ease forgiveness in victims of wrongdoings by allocating the subjects to work their profound thoughts and feelings about what they've experienced. Even though prior studies have illustrated the value of emotional disclosure for a host of adjustment-related outcomes, there are no studies to date that have applied this approach to the issue of interpersonal forgiveness besides a previous smaller-scale study performed at another university by the principal investigator. This study is a follow-up to that previous study. We will also assess people's emotional well-being hypothesized changes in forgiveness that result from our disclosure paradigm predict heightened well-being.

Ethical Purchasing Perceptions and Practices of Oklahoma Restaurant Managers

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ABSTRACT. The primary purpose of this research was to emphasize the importance of business ethics in the hospitality industry due to the lack of awareness of this by both educators and industry personnel in the past. Damitio and Schmidgall (1993) state that business ethics has become a popular topic in both the academic arena and the business setting within the hospitality industry. In general, business ethics has been discussed academically and has been practiced in industry much more vigorously than ever before.

Currently, managers and leaders are focusing more on business ethics as compared to the past. Statistically, ethical business practices can save foodservice industries and/or restaurants enormous amounts of cost every year due to ethical conduct.

The objectives of the study were to investigate ethical business practices and perceptions in purchasing dealings between young and senior managers in the U.S. restaurants. Corporate ethical standards and managerial ethical practices can guide managers and employees as to how to behave when confronted with a dilemma with regard to ethics and personal interest. Consequently, the prime principle of management or purchasing personnel in terms of ethical dealings has tremendous impact on the firm's overall benefit and enhances employees' morale. Managerial style in light of business ethics, has enhanced employees' loyalty and working behavior and attitude, and decision-making of restaurant's food purchasing personnel were investigated in this study. Additionally, organizational business ethics training for employees is also taking a crucial role in terms of ethical business practices. Some valuable and useful implications for the hospitality industry, particularly for the restaurants, would be revealed in this research.

Key Words: Hospitality business ethics, business ethics, ethical purchasing practices, management and leadership.

Educators' Perceptions of Business Ethics in Hospitality

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ABSTRACT. Business ethics has become a popular topic in both the academic arena and the business setting within the hospitality industry. This research investigates the perceptions of hospitality educators regarding business ethics in contemporary hospitality programs and the hospitality industry (Damitio & Schmidgall, 1993; Dunfee & Donaldson, 1999). This study provides some pivotal educational findings as to how hospitality educators perceive the preparation of hospitality students relative to business ethics. There are three distinctive findings. Female educators have a significantly higher level of agreement toward statements about business ethics in the hospitality industry than do male educators. Educators whose own level of education was a doctorate degree were significantly less concerned about ethics education than educators whose own level of education was a two-year college degree or a master's degree. And, educators who were employed in institutions offering graduate degrees were significantly less concerned about ethics education than educators who were employed in institutions offering undergraduate degrees. In addition to those three significant findings, this study also showed that educators perceive that organizations should not only practice business ethics with customers but also with employees. Additionally, this study showed that educators are concerned about multinational companies (MNC) and students' ability to understand ethical issues while operating businesses in foreign countries. Educators are also concerned about the strong influence of business organizational leadership and management on business ethical practices.

Keywords. Hospitality ethics education, hospitality ethics curriculum, business ethics

Effects of Technical Formulations of Three Herbicides (Rodeo, Glean, and Aatrex) on the Growth Rates of Pithophora oedogonia (Chlorophyta)

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Pre-/post-emergent herbicides Roundup, Glean, and Aatrex are used to control weed populations in sorghum and winter wheat fields in West Central Oklahoma, have the potential to runoff into local streams and affect the growth of indigenous algae. The active ingredient of Roundup is glyphosate (N-(Phosphonomethyl)glycine(acid)), for Glean the active ingredient is chlorsulfuron (2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)aminocarboyl] benzenesulfonamide), and Aatrex, the active ingredient is atrazine (2-chloro-4-ethylamino-6-isopropyl-amino-s-triazine). The technical formulations of these herbicides were used to determine their effects upon the growth rates of Pithophora oedogonia. P. oedogonia was selected as a model to simulate the herbicides overall effects upon periphyton in streams of West Central Oklahoma. The effects upon P. oedogonia can be used to predict the effects that these herbicides have upon aquatic ecosystems.

Technical grade glyphosate, chlorsulfuron, and atrazine inhibit growth rates of P. oedogonia under low light conditions (76 mmol/m²-s). Growth rate EC 50 values of glyphosate, chlorsulfuron, and atrazine were determined to be 300.00, 28.00, and 0.06 mg/l respectively. In addition, tandem herbicide mixtures inhibited growth rates of P. oedogonia more than did exposures to individual herbicides. Corrected Sum-Additive Index (CSAI) were used to determine less-than-additive or greater-than-additive effects of the tandem herbicide mixtures. The CSAI for the atrazine + chlorsulfuron mixture is 3.4 indicating a less-than-additive effect, for atrazine + glyphosate 0.277 indicating a slight greater-than-additive effect, and for glyphosate + chlorsulfuron, 0.639 indicating a higher greater-than-additive effect. These CSAI values indicate that some of the herbicides mixtures can have stronger inhibitory effects upon algal growth than would be predicted based upon exposure to individual herbicides.

Women Musicians and the Federal Music Project of the WPA, 1935 - 1939: Exclusive Inclusion

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Although the Federal Music Project, created in 1935 as part of the Federal One Arts Projects of the Works Progress Administration, promised equal employment opportunities for women musicians, these opportunities, with a few exceptions, proved inadequate and exclusive. Research has cited social prejudice against women working outside the home, and the prejudice against women performing in mixed, public ensembles as limiting factors. However, the privileged musical philosophy of its director, and the institutional policies and resource allocation that resulted from this philosophy contributed equally, although more subtly, to the limited and restricted participation of women in the Federal Music Project.

Important Factors in Business-to-Business Web Site Evaluation: A Scale Development Study

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Although there exists some research on the factors that consumers find important in a Business-to-Consumer web site (Chen and Wells 1999; Ghose and Dou 1997; Eighmey 1997), there isn't any published research in the academic literature on either the factors that are considered important or measures of the performance of a Business-to-Business web site. This is surprising given that given that Business-to-Business web sites have outperformed Business-to-consumer sites by more than three times (www.ecommerce.gov) and projections suggest the gap is only going to widen (Forrester Research, The Gartner Group, and The Boston Consulting Group). Since, Business-to-Business web sites differ markedly from Business to Consumer web sites in terms of transaction volume, average transaction amount, amount of site traffic, nature of buyer-seller relationship, logistics and fulfillment issues associated with transactions, etc., it is not possible to generalize the findings from the latter to the former (Sawhney and Kaplan 1999; Peppers and Rogers 2001). Based on a review of academic and trade press literature, we identified eight factors that might be considered important in evaluating a business-to-business web site. Since this research represents a first effort in developing scales for these constructs, we adopted a rigorous scale development procedure including construct definition, item generation either by modifying existing scales or developing new ones, a face validity check by academicians, focus group interviews and finally in depth interviews with a small sample of subjects. Data for the study was obtained through a web-based survey in which business customers of a power tool company gave their opinions about one of eight web sites in the construction industry. The scales developed were tested and purified using exploratory factor analysis, confirmatory factor analysis and finally the constructs were subjected to convergent and discriminate validity tests. The analyses provided us with measures for seven of the eight factors. Results of comparing the importance of the factors suggested that the arrangement of content in a web site and its navigability tapped by the construct organization is the most important factor. Non-transaction related interactivity (which encompasses interaction activities that don't directly lead to a transaction), privacy and security features (which refer to concerns about security of data and safety of personal information) and informativeness (which refers to the ability of the site to communicate something of value to the visitor) were found to be next in importance. Transaction related interactivity (which is the ability of a site to conduct e-commerce related activities) and level of personalization were at the next level in terms of importance. One possible explanation for their relative unimportance could be the rapid advances in technology, which have transformed what were relatively uncommon and innovative features in a web site three years ago (such as e-commerce capability and personalization) into common features. Finally, entertainment (which refers to the ability of the site to be fun, exciting or entertaining), was found to be least important in our study. Thus it appears that the utilitarian aspects are of greater importance in a Business-to-Business web site.

"I think I can...": A Model for Understanding Student Motivation

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Students' performance in school is dependent not only on their academic skill level, but the degree to which they can complete educational tasks. Their willingness to apply appropriate motivational strategies within the context of the school setting can work to enhance their academic capabilities. Recently, there has been a

shift from using traditional behavioral techniques to including the teacher, parents, and student in the intervention process for increasing academic motivation (Malouf, 1983; Nicholas & Steffy, 1999; Pearl, 1985). Although reflective in current motivational literature, there has been little coverage in school psychology of the motivational components that act as mediators in the educational process. Several factors play a role in students' motivation to initiate, follow through, and complete a given task. These include such components as historical factors, competency beliefs, volition or self-regulatory skills, the situation in which the task is performed, the perceived consequences of the task, and attributions of success or failure. This model will allow school psychologists to determine deficits in motivational capabilities by obtaining information from not only the parents and educators, but the student as well. School psychologists can then use this model to develop intervention techniques that focus on deficits specific to each child. This leads to task persistence and eventual task completion. Students having difficulty in self-regulation may need systematic interventions to increase these skills. Interventions including these components encompass motivation to a greater degree than do counseling sessions increasing self-esteem regardless of effort or reinforcement interventions that focus solely on work completion. However, interventions should also consider factors outside of the student for the full motivation model to be implemented. For example, students enter learning situations with a background including reinforcement history, acquired values, self-efficacy/competence beliefs, affective states, and goals. In learning situations, students evaluate accessibility of rewards, situations as competitive or cooperative, their ability to choose their academic peer group, and their teacher's perceptions of their ability and effort. For students to achieve an optimal level of motivation, a teacher should structure the classroom in a way that will positively affect students at all levels of academic functioning. For example, ability attributions for failure will lead to lower future motivation, while poor effort attributions can lead to increased effort in the future. These attributions will then be internalized into students' motivational history and belief system described previously. Interventions that focus on changing their attributions of previous and current events will increase their motivation levels in future academic situations. The application of a comprehensive model for conceptualizing and intervening for motivational difficulties will allow school psychologists to focus not only on students' outcome behavior such as work completion, but on internal components of motivation such as history, value and belief systems, and perceptions within academic situations. Understanding and intervening in students' attributions following academic events will increase the likelihood of a positive motivational belief system for future events. School psychologists' understanding and application of this model will significantly expand their ability to contribute to successful motivation in students.

Dual Heuristic Programming On-line Learning and Switching for Fault Tolerant Control

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As technology advances so do the complexity and the degree of reliability and availability required from the systems. At the same time, faults increase in chance of occurrence, diversity and severity of consequences. Fault Tolerant Control (FTC) is a field of research that emerges to address to this dichotomy by specifically designing control algorithms capable of maintaining stability and performance despite the occurrence of faults.

Contained in this area is a broad scope of approaches, ranging from static robust controllers to intelligent reconfigurable architectures. Off-line computed schemes such as causal analyses and robust control are usually simpler to design and implement, but can only cope with a restricted class of expected faults, often requiring models of the healthy system as well as those of the system affected by various faults of interest.

Such a huge amount of prior information is often unrealistic in real world problems. In those cases, on-line adaptive or learning systems, often referred to as model free approaches, are required. Purely adaptive algorithms though, suffer from slower response due to the fact that they must be allowed time to gather information and modify themselves. As opposed to model based algorithms, which make use of all prior knowledge, completely model free approaches do not allow any specific solution of a fault to be inserted during the design phase.

In this paper a hierarchical architecture that combines a high degree of reconfigurability and long-term memory is presented as a fault tolerant control algorithm for complex nonlinear systems. Dual Heuristic Programming (DHP) is used for adapting to faults as they happen for the first time in an effort to prevent the build up of a general failure and also as tuning device after switching to a known scenario. A dynamical database, initialized with as much information of the plant as available, oversees the DHP controller. The decisions of which models to record, when to intervene and where to switch are autonomously taken based on specifically designed quality indexes. The results of the application of the complete algorithm to a proof-of-the-concept numerical example help to illustrate the fine interrelations between each of its subsystems.

Are Integrated Pest Management Techniques More Expensive than Chemical-Based Strategies in Controlling Insects in Stored Wheat?

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The United States is a world leader in wheat production and stores more than 15 billion bushels of grain each year. Elevator managers across the country have developed several methods to control pest infestation and keep the insect numbers under the levels required by regulations and market standards. Among the methods of controlling pests are turning and blending the grain, aeration, temperature control, sanitation, fumigation, etc. Nevertheless, managers still depend mainly on chemical control, such as phosphine fumigation, without accurate knowledge of insect infestation. Integrated Pest Management (IPM) techniques can help in the control of pest population through a balanced use of chemical, biological, social and other control methods, using cost-benefit analysis in decision-making. This project compares costs of IPM and conventional chemical-based pest management, taking into account different rates of effectiveness of the strategies, and the risk of failing to detect insects in IPM sampling. The cost comparison considers variables such as costs of fumigation and aeration, labor costs, cost of insect monitoring, and electricity costs. Consideration is also given to less easily measured environmental and worker safety concerns.

G-Protein Mediated Signal Transduction

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Capacity of leukocytes and organisms like *Dictyostelium discoideum* to clear invading microorganisms and take up bacteria, respectively, is dependent on their ability to respond to various chemoattractants and release proteolytic enzymes and reactive oxygen species to facilitate phagocytosis. Chemoattractants elicit intracellular signaling through specific receptors coupled to G-proteins. The goal of this study is to determine if G α subunits are involved in desensitization of chemotactic responses by characterizing the

desensitization of cells expressing mutant G α subunits. Current, research includes streamlining an assay to detect superoxide production in HL-60 cells and in *Dictyostelium discoideum*

Expression Studies of Metabolic Genes Involved in Plant Cell Wall Defradation

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We propose to identify all of the plant cell wall degrading enzymes produced by *A. nidulans* while growing on plant cell walls. This will involve developing a novel negative genetic screening method designed to yield cDNAs for all proteins the fungus produces when it is shifted from growth on glucose to a medium containing one or a whole range of plant cell wall polysaccharides including pectins, cellulose, and xylan. cDNAs, prepared from mRNA templates extracted from glucose-grown cultures, will be labeled (herein designated "glucose-grown probes) and used to screen a cDNA plasmid library made from mRNAs extracted from plant cell wall polysaccharide-containing cultures (herein designated polymer-grown library). Isolation of condition-specific cDNAs will be accomplished through differential DNA/DNA hybridization among a labeled "glucose-grown" probe, and membrane lifts from the "polymer-grown" plasmid library. Transcripts expressed in both, the cDNA probe and the plasmid library being screened, appear as positives. Transcripts expressed only in the plasmid library that is being screened will not be labeled. Negatives (800) will be selected for further analysis. Genes identified through negative screening are all the ones induced as a consequence of the physiological shift. Thus, the suggested approach is comprehensive because a whole gene set activated by a specific physiological condition can be isolated. If successful and robust enough, this method should be a powerful tool that will allow us to survey quickly a large set of nutritional circumstances and assemble a comprehensive set of genes involved in decomposition of plant cell walls. Once we have identified all the cDNAs that are specifically upregulated under conditions in which plant cell wall carbohydrates are being metabolized we will produce glass microarrays for further examination of the physiology, gene regulation and expression.

Standing Up: The Male Violence Debate

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The theoretical positions voiced within any movement affect, to some extent, all who encounter it. In particular, the impact of feminist theory within the academy has brought many traditional, embedded definitions of maleness into play. Instead of the earlier, mainly unspoken assumption that "men are men", many feminist theorists have looked to the causes and origins of what we know as masculinity as a means of resisting patriarchy and male violences.

Following this, and perhaps responding to it, a number of books from the field of anthropology have emerged which work to show possible relationships between violent male behaviors in humans and our primate cousins. Such a stance implies, obviously, an essentialist reading of male violence that directly opposes many feminist perspectives on the topic.

Working within the tensions between these arguments are many populist authors who claim understanding, favoring one side or the other, of what it means to be male and what we should do about it.

This debate will play out in many areas/situations/locations. For example, this struggle to frame maleness will continue to inform the field of education as teachers, parents and administrators look to these texts for answers to questions such as "What is the best way to reduce the number of males enacting school violence?"

My paper will briefly survey texts emerging from this debate in order to discuss the possible implications these arguments might have on our understandings of violence, maleness, men, and boys.

Effect of Implanting During the Summer Grazing Period on Subsequent Feedlot Performance and Carcass Characteristics of Steers

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Effect of implanting during summer grazing and (or) finishing on feedlot performance and carcass characteristics of steers. Levi J. McBeth, Don R. Gill, and Clint R. Krehbiel Animal Science Oklahoma State University. The objective of this study was to determine the effects of implantation with Ralgro during summer grazing and (or) a Revalor S implant during finishing on feedlot performance and carcass characteristics. Crossbred steers ($n = 180$; $BW = 280 \pm 17.3$) were randomly assigned to one of three treatments. Treatments were: 1) no implant during summer grazing or finishing (CON; $n = 20$); 2) no implant during summer grazing and Revalor S implantation during finishing (IMPLF; $n = 80$); and 3) Ralgro implantation during summer grazing and Revalor S implantation during finishing (IMPLGF; $n = 80$). Steers were grazed on mixed native range in Western Oklahoma for 74 d prior to finishing. Upon arrival at the feedlot, steers were blocked by weight and randomly assigned to 36 pens (18 pens/block; 5 hd/pen). The heavy and light blocks were fed for 132 and 147 d, respectively. Steers that received Ralgro during summer grazing had 9.8% greater ($P < 0.01$) ADG than steers that were not implanted. In the feedlot, DMI was greater ($P < 0.05$) for IMPLF and IMPLGF steers from d 84 through 112 (8.4%), d 0 to 112 (6.0%), and d 112 to the end of the feeding period (11.7%) compared with CON steers. Steers implanted during grazing entered the feedlot heavier ($P < 0.01$) and were heavier on d 28 than steers not implanted. However, by d 56 IMPLF steers had similar ($P > 0.10$) BW compared to IMPLGF steers, and IMPLF and IMPLGF steers had greater ($P = 0.01$) BW than CON. Steers that received an implant during finishing were more ($P < 0.01$) efficient and had greater ($P < 0.01$) ADG throughout the feeding period. No significant differences were observed for dressing percent, kidney pelvic and heart fat, marbling, rib eye area, yield grade or tenderness among treatments. However IMPLF and IMPLGF steers had greater ($P = 0.01$) hot carcass weight and fat thickness at the 12th rib than CON steers. In this experiment, performance advantages gained by implanting during the summer grazing period were compensated for by d 56 of the finishing period by cattle that received an implant in the feedlot.

Assessing Musculoskeletal Discomfort Among College Students for Impact on Test Performance

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College students were asked to take a cognitive reasoning exam in order to determine how movements in body posture associated with muscle discomfort would affect test performance. A total of four students from ages 20-25 were studied with three females and one male participating. Two different room locations were chosen for the exam environment and students were videotaped during the exam. Room A is equipped with some modern ergonomic features; Room B is not. Following the exam, the students were given a survey. Results showed better exam performance for students in Room B rather than Room A, which may have been caused by uncontrollable factors. Survey results showed that all students complained of either back or neck pain from the chairs. This was confirmed by the video that showed students massaging either back or neck muscles. Also, the survey found that classroom concerns before taking an important exam are mainly chair comfort, legroom concerns, and desk area. Improvements suggested for another study include a larger population, a more specific survey about the muscle groups and a test given for course credit. Further research is definitely recommended to deduce the impact poor seating has on the performance of college students.

Collider Phenomenology of Universal Extra Dimensions

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The latest developments in theoretical particle physics indicate that viable, phenomenologically motivated extensions of the Standard Model (SM) of particle interactions may feature universal, extra, compact dimensions, propagated by all particles and gauge bosons. The compactification radii of these extra dimensions must not exceed the sub-millimeter regime according to everyday experience, which provides overwhelming evidence that the motion of ordinary macroscopic matter is confined to the usual four spacetime dimensions. The periodic nature of this extended geometry results in one tower of Kaluza-Klein (KK) excitations for each SM gauge field and two such towers corresponding to each SM particle. The masses of these associated KK states are approximately integral multiples of the compactification scale, which can be as light as 350 GeV. This relatively low mass bound is a consequence of tree-level KK number conservation, a reflection of $(4+N)$ -dimensional momentum conservation, which dictates that KK excitations can not be singly produced. Such KK states manifest themselves in the detection of scattered final states from particle collisions at high-energy colliders through interactions with ordinary matter. The lowest-lying KK excitations may very well lie at the edge of the experimental grasp of present-day high-energy colliders.

The most stringent collider bounds on the compactification scale for a scenario involving a single universal extra dimension originate from proton-proton collisions at the Tevatron, where Run I has concluded and Run II is underway, and proton-antiproton collisions at the Large Hadron Collider, which is expected to commence operation in a few years. The most significant cross sections correspond to the production of KK excitations of the gluon and two distinct towers of quarks. The signatures of the KK excitations depend on the stability of the lowest-lying KK states: Stable, slowly moving KK quarks produced at colliders will hadronize, producing high-ionization tracks; while KK gluons and light quarks that decay within the detector via graviton emission will predominantly result in a dijet signal with missing energy. This analysis places

the Tevatron Run I mass bound for stable KK light quarks and gluons at 350 GeV, while Run II can extend this bound to 400 GeV. The constraint is heightened for KK quarks and gluons that prevalently decay within the detector via graviton emission, as in the fat brane scenario: Run I can probe up to 400 GeV, while the Run II reach will be 450-500 GeV at its initial luminosity and 500-550 GeV if the projected final luminosity is reached. The Large Hadron Collider will either discover universal extra dimension KK excitations of quarks and gluons or elevate the constraint to about 3.0 TeV, with little regard to their stability.

Innovation Versus Stability in a Deregulated Environment: An Economic Perspective

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The year 2001 was unpleasant for three important American industries - the electric utilities industry, the airlines industry, and the telecommunication services industry. The Electric Utilities industry suffered capacity shortages that led to price spikes and scattered blackouts. The Airlines industry, even before September 11, had to cancel flights and put planes into desert storage. And finally the overbuilt telecommunication services industry cut investment so dramatically that it helped drag the entire U.S. economy into recession. The reason for this tragic collapse in these industries and subsequent economic recession is due to all three industries having one thing in common: they have an increasing-returns-to-scale economic structure. Although this structure is profitable, it is inherently unstable. This instability arises from the fact that all three industries have the same Achilles' heel: Nearly all their costs are up front. Once they build capacity, they can increase their output at little cost. At first, this may sound like a good recipe for making money, but it's really a recipe for a big disaster. Industries whose costs keep falling as production rises tend to turn into monopolies or oligopolies. And furthermore their pricing economic structure is Byzantine. For example, captive customers (like business flyers) pay far more than noncaptive customers (like tourists). Moreover, investment in technological innovation tends to swing wildly between boom and bust cycles or between expansion and downsizing cycles. Now regulation can tame these instabilities and smooth out the cycles' swings, however regulation also suppresses innovation and takes away incentives for companies to be efficient. Consequently and for the past two decades, the government has been deregulating so-called increasing-returns industries, with positive and negative attitudes and results. And so, this research investigates the impact of deregulation on technological innovation in so-called increasing-returns industries. Furthermore, maintaining sound technological innovation processes by the industry's participants will be the key components to track and use to determine if these industries will remain deregulated in the near future. To make this determination, the researcher used System Dynamics to study the short-term and long-term economic consequences of deregulation on the technological innovation processes of so-called increasing-returns industries.

Thermal Quenching of Thermoluminescence in Quartz

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Thermal quenching of both thermoluminescence (TL) and optically stimulated luminescence (OSL) from natural quartz is a well-known phenomenon which has to be accounted for when interpreting the TL and OSL behavior of this material. In this study we examined the thermal quenching properties of the TL from several natural quartz specimens, at two different wavelengths, using the heating rate dependence of the TL signal. As the heating rate varies the TL peaks shift to different temperatures and become affected by thermal quenching to different extents. In this work we varied the heating rate over several orders of magnitude and, through deconvolution of the TL glow curve, we followed the behavior of the main TL peaks as a function of the temperature at which the peak appeared in the glow curve. Through an analysis of the glow peak areas as a function of glow peak temperature the decrease in the efficiency of TL production with increasing temperature could be monitored, at the different emission wavelengths. The analysis supports the contention that the quenching phenomenon is a result of a Mott-Seitz mechanism.

Control of the Aphid/Barley Yellow Dwarf Complex Using Insecticides Seed Treatments

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The aphid/barley yellow dwarf (BYD) complex is the most economically damaging pest complex of cereal crops in the world. The complex is damaging because barley yellow dwarf virus (BYDV) can be transmitted to many cereal crops by over 23 species of aphids. Hence, controlling the aphids that vector BYDV with insecticides is one of the most effective methods of reducing or eliminating the aphids and the BYD. Thus, the objective of this research was to control the aphid/BYDV complex on hard red winter wheat (HRWW) using two systemic insecticide seed treatments, Gaucho 480 and Cruiser. Seed of two HRWW cultivars (Karl 92 and 2174) treated with Gaucho (1, 2 and 3 oz/cwt) and Cruiser (0.75 and 1.33 oz/cwt) was planted on 29 Sep- and 09 Nov-2000 in a field west of Stillwater, OK. An untreated control of each cultivar at each planting date was included for comparison. For each planting date, plots were arranged in a randomized complete block design with four replications. Due to unfavorable environmental conditions, no aphids were ever found in any of the plots, and no symptoms of BYD were ever observed. Hence, data collected for fertile head count, grain weight (yield), thousand-kernel weight, and test weight showed no significant differences among insecticide treatments. However, there was an affect by planting date, with significantly fewer fertile heads, and lower grain weight, TKW and test weight in the late-planted wheat. Although in other studies, Gaucho and Cruiser have increased yields and have been economically advantageous to use when aphids and subsequent BYD occur, this study shows that in the absence of the aphid/BYDV complex, no such economic advantage is realized.286 words

Genes Induced During the Hypersensitive Resistance Response in Cotton Leaves to *Xanthomonas*

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Resistance of cotton foliar tissues to the bacterial pathogen *Xanthomonas campestris* pv. *malvacearum* (Xcm) is expressed as a hypersensitive response (HR) accompanied by accumulation of sesquiterpenoid phytoalexins in the hypersensitively dying cells. Using suppression subtractive hybridization (SSH), we have prepared a differential library of Xcm-induced transcripts that are likely to be important in the HR of highly resistant cotton line Im216. Northern blot analyses have verified that most of the genes initially identified are induced after inoculation with Xcm. Transcripts identified as being differentially expressed include ones with similarity to pathogenesis-related proteins, O-methyltransferases, chitinases, and putative proteins in other organisms. Some differentially expressed transcripts show no similarity to any proteins present in the public database and hence may represent novel genes. Cloned inserts that had already been sequenced were labeled and used as probes to screen the library, thereby enabling us to identify clones that had not yet been sequenced. Unique cDNAs from the SSH library will be arrayed on nylon membranes and screened with RNA-derived probes from six near-isogenic lines, each containing a race-specific B gene for bacterial blight.

Profiling U.S. Air Traffic Control: Is the FAA Ready for Cyber War?

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With the events of September 11th, 2001 (911) and an evolution of international hacker activity into political hactivism, the potential of a government and/or terrorist-backed attack against U.S. cyber-infrastructure exists. In *HACKING EXPOSED, 2ND EDITION*, Scambray et. al. describe a composite pattern of how skilled hackers attack computer systems. This predatory attack scheme used by hackers was followed to a great extent by the 911 hijackers--not on computer systems, but on the U.S. air transportation system. By implication, this attack scheme of malicious profiling, penetration and destruction could be used in a cyber war scenario against the United States. It is in the shadow of this predatory mentality that the Federal Aviation Administration (FAA) manages critical air traffic control systems. The FAA's own websites, the General Accounting Office and other sources show that the FAA's computer security posture, which includes critical air traffic control systems, is not keeping pace with current cyber-threats such as viruses, intrusions, and protection of the identities of FAA technology team members. How would FAA air traffic control systems stand up under a focused cyber attack? This paper accomplishes a first pass at a search for entry points and vulnerabilities of U.S. air traffic control as shown on FAA, FAA contractors', and GAO websites and consolidates the information necessary to exploit those vulnerabilities in the context of a cyber war scenario. All information is gathered off of published websites and materials.

Statistical Significance Tests and Effect Magnitude Measures Within Quantitative Research Manuscripts Published in the Journal of Agricultural Education During 1996-2000

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Manuscripts published in the Journal of Agricultural Education are expected to comply with criterion established for mathematical and statistical copy set forth by the American Psychological Association (1994) and the editorial policies of the Journal of Agricultural Education. This paper described the reporting practices of 141 quantitative research manuscripts published in the Journal of Agricultural Education during the five year period, 1996-2000, concerning statistical significance tests and effect magnitude measures. Findings indicated quantitative research designs permeated most manuscripts. Findings also indicated statistical significance tests were utilized in almost half of the manuscripts to determine differences among variables where as, over half of these manuscripts failed to report any effect magnitude measures. Further findings indicated the proportion of effect magnitude measures were reported by less than one-third of all the manuscripts. The proportion of manuscripts utilizing statistical significance tests and reporting any effect magnitude measure were reported by less than one-fourth of all the manuscripts. It was recommended that researchers utilizing statistical significance tests include effect magnitude measures, power analysis, confidence intervals, and the adoption and enforcement of more strict editorial policies regarding statistical significance testing and effect magnitude measures. It was further recommended that Agricultural Education researchers review the debate between hypothesis testing versus effect size and to review these two statistical methods.

Improved Mucosal DNA Vaccine for Equine Influenza

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Equine influenza is a disease of economic importance. Outbreaks of this disease occur periodically despite vaccinations. This is probably due to the fact that current available vaccines do not elicit adequate immunity, and mucosal immunity is not stimulated. DNA vaccination involves administration of plasmid DNA encoding an immunogenic protein. The encoded protein is transcribed and translated in the host cells to elicit an immune response.

It has been shown that intranasal immunization of an antigen elicits a mucosal immunity. To study whether intranasal administration of a DNA vaccine will elicit a mucosal immune response, the hemagglutinin gene of an equine influenza virus A/equine/Kentucky/98 was inserted into an eukaryotic expression vector, pTOPO-3.1 (Invitrogen). The plasmid DNA was introduced into MDBK cells by liposomes or by electroporation. Presence of the plasmid in the cytosol and nuclear fractions was confirmed by PCR and gel electrophoresis. Synthesis of the protein is detected by a fluorescent antibody technique or Western blot hybridization using a conjugated, specific antiserum.

To test the efficacy of this DNA vaccine, groups of Balb/c mice were inoculated intranasally with this DNA vaccine. Specific mucosal immunity is assayed by serum IgA titers and by a challenge experiment. Preliminary experiments indicate that intranasal immunization requires a much less quantity of DNA than using a gene-gun or by intramuscular administration. This DNA vaccine for equine influenza can be a practical alternative to the conventional inactivated vaccines.

Development of a Robust Precision Fertilizer System Utilizing Real-time, Ground-based Sensors and Fluid Application Control

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Rising fertilizer costs and increased environmental restrictions being placed upon the application of fertilizers and herbicides have resulted in more selective methods of application to be developed. Past studies at Oklahoma State University (OSU) have shown that a plant's vigor in the early stages of growth closely correlates with the amount of fertilizer the plant will need throughout the growing season. A machine that can accurately assess and apply a plant's fertilizer requirements would increase the efficiency of nitrogen use in crops. OSU has developed a field scale machine that senses wheat canopy vigor, estimates plant nitrogen requirements and applies top dress fertilizer.

The fertilizer application system design being reported is adaptable to common spray applicators. Active sensors detect light reflectance from a plant canopy to determine a vegetative index, which is then used to calculate the desired application rate. Desired application rate is achieved by modulation of binary valves and pressure control. The machine also utilizes boom height and valve attitude control to accurately apply fertilizer.

A commercially viable fertilizer application system entails robust components, accurate application, compatibility with environmental changes, and economic or environmental benefits. With the cooperation of NTech Industries, Inc. (a newly formed Oklahoma based precision agriculture company), OSU has equipped a commercially available machine with the necessary software, electronics, and mechanical components to meet the indicated objectives. Return to producers using the proposed system is estimated conservatively at \$10 per acre in wheat and machine costs can be paid back in approximately two years for typical systems.

Differential Gene Expression During Trophoblastic Elongation of Porcine Conceptuses (Whiteman Award Competition)

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Developing porcine conceptuses undergo a morphological transformation as the trophoblast rapidly expands between 11 and 12 days of gestation. Conceptuses elongate from a spherical shape to filamentous form that is greater than 150 mm within 2-3 hours. The period between elongation and uterine placentation is usually characterized by high embryonic mortality indicating that elongation of the trophoblast is a critical stage of development in the pig. Little is known concerning genes involved with triggering this unique transition in development. Therefore, the objective of the present study was to evaluate genes differentially expressed during conceptus transformation from spherical (8-10mm) to tubular (15-40mm) to filamentous (>150mm) morphology during elongation. Conceptuses were collected at each of the morphological stages, pooled and RNA was extracted. To identify differentially expressed genes we performed subtractive hybridization with the PCR-Select cDNA Subtraction Kit from Clontech. Forward and reverse subtractions were performed to compare spherical to tubular morphology and tubular to filamentous morphology. Ninety-six genes from both the forward and reverse subtraction for each comparison were randomly selected, cloned and differentially screened to ensure unique expression at each stage. Of the selected clones, 42, 18, 43, and 69 genes for each group were confirmed to be differentially expressed and sequenced at the OSU Recombinant

DNA/Protein Resource Facility. Genes sequenced of specific interest were interleukin-1b and heat shock protein 8 found to be up regulated as the conceptus reaches the filamentous form. Interleukin-1b has previously been shown to be expressed by peri-implantation conceptuses in swine at 11-12 days of gestation. Down regulation of myloid cell leukemia-1 was also recognized as the conceptuses progress from tubular to filamentous morphology. Utilization of the subtractive hybridization technique will allow us to continue to detect genes which may regulate conceptus development and survival.

The West as America: History, Museums, and Controversy

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My paper is about The West As America exhibit put on by the national Museum of American art in 1991. The curators used New West theory to reinterpret nineteenth and early twentieth century western art. The public, media, and conservative politicians were not prepared for the new interpretation of classic western images. The real importance of the exhibit was that it showed the gap between academic historians and the public, as well as, the struggle for political control of History. It also taught museum professionals important lesson on how to exhibit controversial subjects in the future.

Bison Group Behavior on Oklahoma Tallgrass Prairie: An Ordination Approach

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Sexual segregation commonly occurs in ungulates with males and females living separately outside of rut. Bison (*Bos bison*) divide into bull and cow-calf groups throughout most of the year, and mixed groups are found primarily during late spring and summer. My objective was to investigate variation in bison group behavior as related to group type and season. I tested for behavioral variability among grazing, moving, standing, lying, wallowing, and rubbing in multivariate ordination using partial redundancy analysis (pRDA) with Monte Carlo permutation tests. Two results lend support to the sexual dimorphism; body size hypothesis of sexual segregation: cow-calf groups were positively correlated with grazing while bull groups were more closely related to ruminating activities. For all groups, posture while ruminating differed by season - standing occurred more often in summer permitting heat dissipation and lying down in winter for heat conservation. Most movement took place during summer by cow-calf groups. Ordination techniques were helpful in explaining variation in several behaviors as related to ecology of bison in tallgrass prairie.

Parametric Versus Non-Parametric Bond Pricing and Hedging Models

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Interest rates are one of the primary indicators of the health of an economy. The values of assets of financial institutions are quite sensitive to fluctuations in interest rates. Many of the major financial institutions are involved in the trading of interest rate derivatives and market making. This highlights the importance of the ability of a financial institution to manage its exposure to fluctuating interest rates. The ability of a term structure model to price zero coupon bonds and hedge a portfolio of zero coupon bonds would strongly indicate what type of a model can be used by a financial institution to hedge its exposure to fluctuating interest rates. A model that accurately prices zero coupon bonds and hedges interest rate exposure for a portfolio of zero coupon bonds can be used to manage interest rate risk for a subset of financial institutions' activities. The study addresses this issue by comparing the parametric pricing approach to the modeling of the term structure of interest rates, with the non-parametric approach using artificial neural networks. The parametric pricing models considered are the Cox Ingersoll and Ross (1985a,b) model, Longstaff and Schwartz (1992) model, and restricted Heath Jarrow and Morton (1992) models (Ritchken and Sankarasubramanian (1995)). The network models include the multi layer perceptron and the radial basis function networks. The study compares the different models on two grounds, first in terms of their ability to price zero coupon bonds and second in terms of their ability to hedge the underlying risk factors. The multi layer perceptron (MLP) network and the HJM-RS models are found to have significantly lesser pricing errors than the other models considered. The MLP and HJM-RS models capture different facets of the term structure such as steepness and curvature better than the principal components analysis model and the traditional duration measures. The principal components analysis models are found to be more sensitive to shocks in the yield curve than the other models considered in the study. One such instance of a shock analyzed in the study is the Russian debt crisis in August 1998. After the shock the hedging errors of the model based on principal components analysis are significantly higher than the hedging errors of all the other models.

Fiber Tapers for Coupling: Method of Fabrication and Understanding the Coupling to the Whispering Gallery Modes of a Microsphere

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The disadvantage of the usual biconical taper, starting from the original fiber of diameter 125 μm , is that mode interaction leads to a strong wavelength dependence of the transmission. To improve the appearance of the coupled whispering gallery mode (WGM) spectra it is important that the tapered fibers that are used for coupling are as wavelength independent of spectral effects as possible.

Unlike the untapered fiber, in which the core-cladding index of refraction contrast provides the guiding of only the fundamental mode (HE_{11}), waveguiding in the taper's waist is determined by the index contrast between the fused silica and the surrounding air. This determines the multimode transmissions in the tapered region. The fundamental mode, guided in the fiber, transfers energy to the higher order modes (predominantly HE_{12}) in the transition region of the taper. Because the interaction depends on the phase mismatch the net taper transmission will be wavelength dependent. However it is possible to reduce the interaction by making the transition adiabatic. Combining the theoretical and experimental results discussed in the literature with our traditional way of making the tapered fibers, we developed a new method of

fabricating the tapered fibers. This method results in a taper shape for which the interaction among the modes is minimized. Compare the spectra of transmission for tapered fibers produced by traditional way of heating - stretching - and etching the fiber (Fig. 1) and the new way of initially etching - heating -stretching - and etching the fiber (Fig. 2).

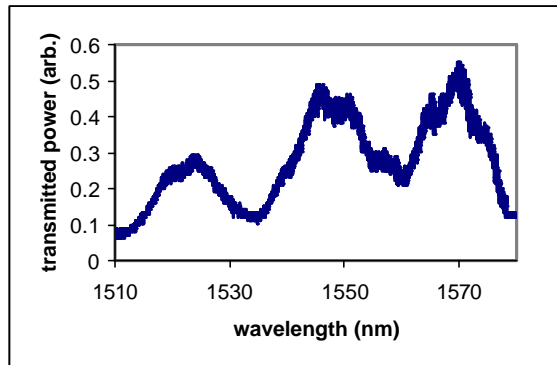


Fig.1 Variations in transmitted power through a tapered fiber. Taper was made by heating and stretching. Taper length 7mm.

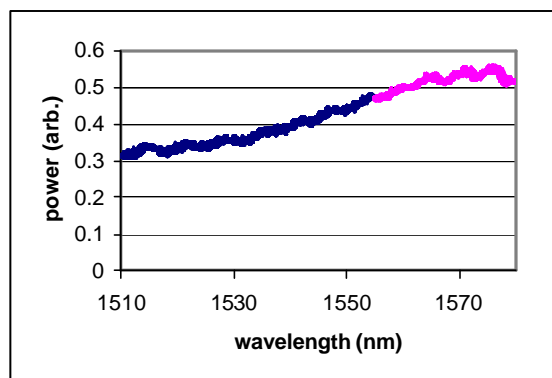


Fig.2 Normalized power variations for a 10 mm long taper made by the new method.

Also discussed in this presentation will be a model elucidating the WGM spectrum of a microsphere coupled by a biconical taper. We have observed that with the translation of the coupling region on the taper, dips in the spectrum are changing to peaks and vice versa. The WGM coupling will be different for different modes propagating in the taper's waist. The model considers two waist modes. If the higher order one couples more strongly to the WGM more of the light will be lost; light coupled back out goes into both modes and so a resonance peak will be seen rather than a dip. Other unexpected observations also can be explained in the model.

Battle of the Philippine Sea: Spruance's Order to Hold the Fleet at Saipan

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The Battle of the Philippine Sea took place on 19 June 1944. It was a major United States naval victory but caused controversy, many believed that the Japanese fleet could have been destroyed. Just before the Battle, Admiral Spruance, and Admiral Mitscher argued over strategy. They did not agree on how to meet Japanese fleet. Admiral Spruance thought the American navy should stay near Saipan, to cover the landing, while Mitscher pushed for a more aggressive strategy. He wanted to move west and hunt for the Japanese. Admiral Spruance was in overall command and decided to keep the fleet near the islands to protect the invasion. This decision caused much controversy between old-line battleship commanders, who agreed with Spruance, and carrier officers who sided with Mitscher. I argue that with the information available to Spruance, he made the correct decision. My paper focuses on the period just before the battle, when Spruance made his controversial decision. The paper also looks at how the controversy over the battle almost caused a naval disaster at the Battle of Leyte Gulf.

The Anti-Lynching Movement in the United States, 1890-1940: The Activities of the National Association of Colored Women, the National Association for the Advancement of Colored People, and the Executive Branch of the Government

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The roles of Negro women's clubs during the Anti-lynching Movement ranged across many areas. Negro women fought for many causes that concerned the American Negro. In doing so, they formed clubs that addresses issues crucial to the progress of the race. These issues included lynching, the convict lease system, and education. This paper investigates the anti-lynching role and methods of the National Association of Colored Women, the Southeastern Federation of Negro Women's Clubs, and the International Council of Women of the Darker Races.

Semi-Supervised Image Segmentation using Wavelet-Domain Hidden Markov Model and Joint Multicontext and Multiscale Approach

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Image segmentation is usually an important pre-processing step in many image-processing applications, and it can facilitate feature detection, extraction and classification in an image. In practice, there are two basic frameworks in terms of the implementation of image segmentation, i.e., supervised and unsupervised. In the case of supervised segmentation, all texture features are given, and an image is required to be segmented in sample regions of homogeneous behaviors. On the contrary, unsupervised segmentation has no prior knowledge regarding texture features that has to be obtained by the on-line training during the segmentation. Actually, in many applications, part of texture features, e.g., that of region of interest (ROI), may be known a priori that can improve the classification accuracy. In such case, a semi-supervised segmentation is needed. In this paper, a new semi-supervised image segmentation algorithm is developed where a part of texture features is given for a certain class. The proposed algorithm can reformulate the problem of semi-supervised segmentation as the one of supervised segmentation by training unknown texture features online in the segmentation process. Particularly, we adopt the wavelet domain hidden Markov tree (HMT) model to obtain the statistical characterization of texture features. We also apply the joint multicontext and multiscale (JMCMS) approach to Bayesian image segmentation by efficiently integrating prior contextual properties with texture features. There are three steps involved as follows: firstly, we identify the regions of unknown textures based on the given prior; secondly, we use an efficient unsupervised clustering algorithm to obtain the training samples for all unknown textures individually, and all texture features can be obtained by using wavelet-domain HMT; finally, the segmentation can be accomplished by using the supervised JMCMS approach where all texture features are available in the Bayesian inference. The simulation results show that the proposed algorithm can achieve a high classification accuracy that is close to the state-of-art supervised segmentation algorithms. The proposed method can be applied to a variety of applications, such as user-defined ROI image coding or automatic feature detection and extraction in biomedical images or Radar images.

Women in the French Resistance, 1941-1945

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The Resistance started as different and separate movements throughout all of France; it was not united. Individuals or small groups, including men, women, and children, did anything that might stop the Germans. For example, some cut phone lines, bicycled in front of German cars, or gave them wrong directions. The Nazis and the Milice, the French Vichy police, captured many and killed some; they were always aware of the underground Resistance movement. Although all French men and women who contributed to the Resistance played important roles, the movement owed its survival throughout the war to the women, mainly single women and teenage girls.

Not necessarily a feminist movement, most women participated in the involvement in order to free their beloved country. Although, during the 1930s society considered women to be successful only in the role as a wife and mother, women such as Claire Chevrillon, Elizabeth Sevier, Edwige de Saint-Wexel, and Mademoiselle Dubocq entered the Resistance with no regrets and no thoughts as to what society thought. These are just a few, out of many women who found strength and courage to defy and frustrate the Germans. They gave up contact with families and friends, left their homes, and learned to trust people with code names because they hated the Germans. The small and menial tasks they accepted and ultimately completed allowed the men who led this underground movement the ability to concentrate on greater assignments and responsibilities. For the first time, women felt a sense of belonging -- that they mattered and that their skills were vital for the liberation of France. The stories of these four women, each different and unique, defined the existence of the French Resistance movement, and until the liberation of France by the Allies, these women fought to save France, despite imprisonment, beatings, and betrayal. Whatever the task, to nurse, to deliver packages, or to code messages, these women succeeded -- they never broke and never gave up. With the courage of these women during the war such as Chevrillon, Sevier, Saint-Wexel, and Dubocq, the Resistance survived and in turn united and liberated a torn country.

Developing a Cultural Definition of Health and Diabetes in Native American Women

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Native Americans are at a disproportionately high risk for type 2 diabetes mellitus. If a large percentage of Native Americans could avoid the onset of diabetes the improvement in quality of life and savings in health care costs would be considerable. Therefore, in-home qualitative interviews were conducted with 96 Native American women from three tribal clinics in Oklahoma to identify a cultural definition of health and diabetes. Health was defined in terms of physical functionality and the absence of disease, often related to obesity. Family members and friends often serve as promoters of treatment; conversely, health is considered a personal problem and illness should be addressed individually without the burdening of others. Women participating in this study presented a fatalistic view of diabetes. Being of Native American decent, diabetes was considered an inevitable event that destroys life and health, ultimately leading to death. Diet was considered to play a key role in health maintenance but secondary factors influence the ability to consume a well-balanced diet. Concern also emerged regarding the shift from a less "traditional" diet compared to that of Western society. Overshadowing these perceptions reside tainted views of the health care system. Concerns in the continuity and quality of care and the desire for more holistic medicine further separate a

population in need from adequate health care. Further understanding perceptions of health in the at-risk population will aid in community education program development. This project has received support from the Oklahoma Center for the Advancement of Science and Technology.

Performance Anxiety: The Physiological and Psychological Effects

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Performance anxiety is the fear of performing in front of a large crowd. This fear produces changes in the body such as temperature and a dramatic rise in heart rates. In this research, the physical and psychological changes in the body are explored during this intense time of performance. Michael Jackson and Barbara Streisand are famous performers who had to deal with performance anxiety. This anxiety is not just limited to famous actors and singers, but everyday people come in contact with this fear sometime in their life. The use of beta-blockers, which are drugs used to ease the physical changes in the body, are explored in this research. There are other alternatives without the use of drugs. There is biofeedback therapy, oral therapy and other techniques such as meditation and relaxation that is also used to overcome performance anxiety. The most important way to overcome performance anxiety is to be prepared and to keep positive thoughts about yourself and the performance.

The Native American Graves Protection and Repatriation Act: A Case Study of the Caddo Nation of Oklahoma, 1990-2001

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This paper, written for History Graduate Seminar 5220, examines the benefits of the Native American Graves Protection And Repatriation Act of 1990, also known as "nagpra." The evidence is based upon oral interviews with Caddo nation tribal officials collected in the Fall of 2001 by the author.

Nutrition-Related Advice Given to Low-income Pregnant Women By Healthcare Providers in Kampala, Uganda

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Objective: To determine differences between doctors (MDs) and nurses (RNs) in prenatal nutrition-related advice and health concerns of low-income pregnant women in Kampala.

Design: MDs and RNs completed a self-administered survey.

Subjects/Setting: MDs (N=21) and RNs (N=32) working with pregnant women in a government hospital in Kampala.

Statistical Analyses Performed: Data were analyzed using T-tests and Chi-square

Results: RNs gave nutrition-related advice (35.1 ± 3.8) significantly more often than MDs (27.6 ± 6.1). RNs' nutrition-related advice was given significantly more often than MDs' advice on suitable foods for pregnancy, alcohol use, fetal and maternal alcohol effects, and fetal and maternal clay effects. MDs' advice was given significantly more often for clay use during pregnancy. The number of perceived pregnancy concerns was significantly associated with type of healthcare provider; RNs indicated significantly more concerns (6.2 ± 1.0) than MDs (3.3 ± 1.9). RNs were significantly more likely than MDs to indicate concerns about poor pregnancy nutrition, herbal and clay use; and ignorance about the fetal alcohol effects, low maternal weight gain, and infant LBW.

Conclusion: RNs indicated a greater concern regarding pregnant women's health-related issues and were more likely to give advice than MDs.

Implications: Study findings provide evidence for the need for consistency in prenatal nutrition message delivery by MDs and RNs.

The Role of the Family in Muscogee Creek Grieving Practices and Bereavement Rituals

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Mainstream society in the United States is rich with individuals from diverse cultural backgrounds. These cultural backgrounds shape how individuals cope with changes, such as loss of a family member. In Oklahoma, much of the cultural influence is from Native American tribes, such as the Muscogee Creek. Customs unique to the Muscogee Creek may require variation from mainstream rituals. For instance, extended family members may need a longer absence from work than merely for funeral attendance. This study seeks to explore the role of the Muscogee Creek family in dealing with the issues of grief and loss of a family member. The objective is to provide important insight concerning the grieving processes and bereavement rituals of the Muscogee Creek Nation and to increase awareness among other cultural groups of the possible variation of these processes. The study involves interviews with 26 members of the Muscogee Creek Tribe regarding current and traditional roles within the family during loss, expression of grief, and rituals. Qualitative data analysis is employed through maximum variation sampling using a case study research design

Development of Indicators for Determination of Bacterial Spore Contamination

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The spectrophotometric characteristics of porphyrins allow for their application in a wide variety of situations as colorimetric indicators. Porphyrins can be immobilized to a variety of surfaces including cellulose, polystyrene, glass, and quartz and immobilized porphyrins have been shown to detect the presence

of several analytes including naphthalene, ethanol, acetone, and formaldehyde. The spore coat of *Bacillus anthracis*, the bacterium responsible for anthrax, contains specific chemical markers that can be used as indicators of contamination. Methods for detection of bacterial spore constituents based on porphyrin systems were investigated for the development of a rapid, reagent-less indicator of *Bacillus* spore presence.

Transactional Patterns and Illness Uncertainty in Juvenile Rheumatic Disease

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Juvenile rheumatic diseases (JRD) are a heterogeneous group of autoinflammatory diseases characterized by an unpredictable disease course and physical disability including joint inflammation, pain, and functional impairment (Cassidy & Petty, 1995). The most common JRD's are juvenile rheumatoid arthritis (JRA), systemic lupus erythematosus (SLE), juvenile spondyloarthropathies, and juvenile dermatomyositis (JDMA). Research has indicated that children diagnosed with JRD are at increased risk for depression (David, 1994); however, disease variables alone do not account for all of the observed variance in psychological adjustment (Bennett, 1994). Further, although research demonstrates the transactional nature of parent-child distress relationships in pediatric chronic illness (Chaney et al., 1997), the precise mechanisms by which parent distress influences child distress have yet to be described.

One promising avenue of research is the examination of potential child cognitive appraisal mechanisms that may enhance the likelihood that parent distress will impact child adjustment. Given the highly variable and unpredictable nature of JRD, the degree to which children view their illness as ambiguous or uncontrollable could be such a variable. The present study attempted to examine parental influences on child distress and the potential moderating role of children's perceived illness uncertainty on parent-child distress relationships in a sample of children with JRD.

Method: Participants were 40 children between the ages of nine and 21 ($M = 14.4$; $SD = 2.92$), diagnosed with JRA ($N = 24$), SLE ($N = 9$), JDMA ($N = 4$), or juvenile spondyloarthropathies ($N = 3$) and their parents. Participants were recruited through a pediatric rheumatology clinic.

The physician completed a Provider Questionnaire to obtain patient information regarding diagnosis and current disease activity. Parents completed the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983) and children completed a background information questionnaire, the Children's Depression Inventory (CDI; Kovacs, 1983; 1992), and the Mishel Uncertainty in Illness Scale-Child form (MUIS-C; adapted from Mishel et al., 1988).

Results: Results revealed that, although BSI parent distress had a significant main effect on CDI child depression ($t = 3.21$, $p < .01$), this was qualified by a significant MUIS-C x BSI interaction. Stated differently, the effect of parental distress on child depression was enhanced under conditions of increased child-perceived illness uncertainty (F change = 7.12, $p < .05$). The interaction contributed 9% of the variance in child depression, beyond the influences of both the disease and demographic variables and the main effects.

Discussion: Results of the present study showed that although parental distress exerted a main effect on child adjustment, this effect was more pronounced when children perceived greater uncertainty about their illness. These findings emphasize the potential influence of the highly variable and unpredictable nature of JRD on child adjustment and point to the important interplay between parents' distress and children's cognitive appraisals in determining child adjustment in JRD. Results suggest that clinical interventions

should focus on providing the family with sufficient information about the disease course, which may result in more realistic disease expectations and decreased child depression.

Displacement Activities as a Function of Pre-Flight Anxiety

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This study will further the understanding and knowledge base of displacement activities (anxiety related behaviors, e.g. finger tapping) stemming from anxiety in humans. The objectives are to determine if subjects in conflict situations (airports) exhibit differing levels of displacement activities as a function of a number of independent variables. The study will examine the rate of displacement activities exhibited by subjects. The study will determine if there are differences in displacement activities as a function of gender, status (flyer/non-flyer), length of flight, weather, time, and support level (accompanied, not accompanied). In the airport, researchers will pose as normal travelers. When in the mall, researchers we pose as typical consumers. Researchers will choose adult subjects randomly, and data will be collected in real time on each subject for a 5-minute period. The results will be applicable to the ergonomic design of new commercial facilities designed to accommodate large numbers of people.

Chlorothalonil Concentration in Putting Green Soil and its *in vitro* Effect on *Arthrobotrys oligospora*

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Plant parasitic nematodes are common and damaging pests in golf course putting greens. The nematophagous fungus, *Arthrobotrys oligospora* is a potential management tool for nematodes in putting greens. However, fungicides are extensively used for the management of plant pathogenic fungi in putting greens and might have an adverse affect on the use of nematophagous fungi to manage nematodes. Four applications of chlorothalonil were made at 14 d intervals to field plots. Soil samples were collected 10 and 40 d after the first application. Chlorothalonil was quantified from soil using a gas chromatograph equipped with a mass spectrometer detector. Soil concentrations of chlorothalonil did not exceed 1.0 ppb. The tolerance of *A. oligospora* to the fungicide chlorothalonil was evaluated *in vitro*. Growth of *A. oligospora* was inhibited at chlorothalonil concentrations above 10 ppm. Results indicate that the use of chlorothalonil to manage fungal diseases may not interfere with the use of *A. oligospora* to manage nematodes in golf course putting greens.

Leisure Behavior: Casino Gambling Observation

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Gambling means different things for different people. Some consider gambling as a positive activity that brings fun, and some perceive it as a negative behavior that needs to be avoided. People's attitude toward gambling varies. Some are very serious about winning and losing but some are not. Because of the different perceptions and attitude, gambling has been an issue that is hotly debated.

To examine people's motivation for, perceptions of and feelings for gambling in the casino, a semi-structured questionnaire was administered to 12 participants, 6 males and 6 females, ranging from age of 22 to 55 at Seminole and Kicapoo casinos in Oklahoma. The researcher used face-to-face interview, which lasted about 10 to 15 minutes. Framework for analysis of interview data included frequency of engagement, self-control, motivation, perceptions, social needs, feedings, and perceived benefits and problems.

The results of the study demonstrated that the biggest force that drove the participants to engage in the activity in the casino was winning money, relaxing and making friends. The majority of participants, 10 of the 12, regardless of gender, class and occupation, believed that they had an equal chance to win. They wanted to "get fast money," "try to win," and "to see if they're lucky". However, some, particularly women, see going to the casino as a way to "escape the family problems," and "let out of the routine." While many gamblers acknowledged that there were many benefits that gambling could bring to them, they also pointed out that some problems were also associated with gambling, including addiction and lost of control.

Findings were discussed and interpreted using psychological benefits of leisure, attribution theory and self-efficacy. The study concluded that human beings needed to create a variety of forms to enjoy their lives and to socialize in order to make connections with others. Gambling in the casino is one of the ways to fulfill the psychological well-being. Firmly held beliefs, such as "equal chance to win" and perceived benefits and problems of gambling contributed to the behaviors observed in the casino predicted future actions of many of the gamblers. Setting limits on money or time has been used as strategies and sources to increase perceptions of in self-efficacy. Despite the fact that many participants associated benefits with the activity in the casino, many indicated that that they would not encourage their relatives or friends to engage in gambling.

"Luck," a driving force for many gamblers, has challenged the assumption that leisure activity is conscious act of self-determination and self-control. Research has to be done to further investigate factors that are at play. Studies need to be conducted to explain the dichotomous view held by many participants: self versus others. Why is it the case that participants perceive themselves as self-efficient beings who have the capacity to control their own behaviors in the casino. In contrast, others have been viewed as "self-destructive," who are very likely to be addicted to gambling and/or to lose control in the casino.

The Effect of Feedback on Automation Reliance

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To extend Pomranky et al.'s (2001) study, which examined appropriate automation use, 15 Cameron University students were provided with a superior automated aid to help them determine whether or not a soldier was present in each of the 300 slides. A 2 (provision of rational why aid might err) X 2 (aid's decision) analysis of variance was performed with the transformed p(error) separately for the trials in which

the targets was present and for those in which the target was absent. A three-way interaction indicated that when the target was present, providing either form of information helped performance relative to providing neither or both forms, $F(1, 10) = 3.99, p < .08$. Future researchers should increase the sample size of the study.

Genotypic Typing of *Serratia marcescens* Strains Associated With Cucurbit Yellow Vine Disease

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Yellow vine bacterium (YVB), the causal agent of cucurbit yellow vine disease (CYVD), has been placed in species *Serratia marcescens* based on 16S rDNA and GroE sequence analysis. However, the phenotypic typing of YVB using other methods, such as Biolog, Vitek and API-20, showed apparent disparity and uncertainty. In this study we compared the whole genomes of *S. marcescens* strains from different niches, including YVB, through DNA-DNA hybridization. It was found that all the YVB strains showed a similarity higher than 95% with YVB strain C01, which was randomly chosen as a probe for hybridization. In addition, the more than 75% of similarity between C01 and *S. marcescens* type strain confirmed the placement of YVB in species *Serratia marcescens*. This result was further supported by our Rep-PCR experiment, in which a much more complete *S. marcescens* samples were tested. The homogeneous Rep-PCR pattern of YVB isolates from different hosts and environments suggested that this pathogen might have had a common ancestor and underwent extremely limited genome variation during evolution. However, since Rep-PCR patterns of other *S. marcescens* strains differ substantially from those of YVB isolates, it is still unclear to us which of these the YVB originated from.

Immunohistochemical Study on NF- κ B Activation in Acute Inflammation

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Nuclear factor kappa B (NF- κ B) is a transcription factor whose role is crucial in the expression of many inducible and constitutively active genes of biological importance. Due to its function in the regulation of the expression of a remarkable number of genes, NF- κ B is involved in many important activities at the cellular level. For example, NF- κ B plays a critical role in the induction of apoptosis. Due to NF- κ B's many involvements in critical biological processes of the cell, its activation pathway is an important factor in understanding many cellular activities.

Although many steps of the activation pathway are still under investigation, a major part of this pathway has been identified. It has been discovered that the binding of stimuli by the cell receptors triggers a kinase cascade, leading to the phosphorylation and activation of an IkappaB kinase complex (IKK). The IKK complex phosphorylates the NF- κ B inhibitory protein, IkappaB (I κ B), which then is ubiquitinated and destroyed. NF- κ B, free of I κ B, translocates into the nucleus to start the transcription process.

Previously, NF- κ B nuclear translocation and activation has been demonstrated using electrophoretic mobility shift assay (EMSA) or gel-shift assay. The goal of this project is to confirm and visualize a major

part of this activation pathway specifically using immunohistochemical techniques. Immuno-stainings for NF- κ B p65 subunit, NF- κ B p50 subunit, I κ B α , phosphorylated I κ B α (p-I κ B α), and IKK α were performed on rat liver tissues. The tissue samples were obtained one hour after LPS administration to rats. Using NF- κ B p65 antibody, we found staining of the nuclei in the tissue from LPS-treated rats, indicating that NF- κ B was activated and translocated into the nuclei. This result verified previous observations obtained in our laboratory by using immunohistochemical techniques.

Tissues obtained from control and LPS-treated animals were immuno-stained with I κ B α and IKK α antibodies showed signals in the cytosol of parenchyma cells, which indicated the presence of I κ B α and IKK α in the cytosol of the both samples. Both tissues showed weak staining of the nucleus, suggesting that I κ B α and IKK are absent in the nucleus. It was expected that the tissues tested for p-I κ B α would reveal staining in the cytosol in the control and LPS sample. However, nuclei staining were found in the tissues tested for p-I κ B α , which signified that p-I κ B α existed in the nuclei. To verify the result of the p-I κ B α immuno-staining, western blots for p-I κ B α will be performed using nuclear extract.

Marketing Ballet Companies Online: An International Approach to Website Design and Function

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Marketing the performing arts online poses challenges that are not confronted by organizations marketing traditional tangible consumer products. Key terms associated with online marketing are defined and a brief history of the rush to "go online" is presented. The study critiques the approaches to online marketing taken by Tulsa Ballet with specific attention on the process of website construction. In addition, the "universal" guidelines of website construction are examined along with a review of current strategies presented by authors and professionals in the field. These "universal" guidelines are compared with studies of international online marketing practices and three international dance company's websites are critiqued in comparison to the Tulsa Ballet site.

A New Randomized Response Model Rectifying the Privacy Problem of a Moor's Model

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A new randomized response model is presented. It consists of Warner's model and Simmons' model. The proposed model is a variation of Lanke's idea. Mangat, N.S., Singh, R., and Singh, S. found a privacy problem and presented several strategies as an alternative one for the Moors' model, but their models may lose large portion of data information and require a high cost to obtain the confidentiality of respondents. Our proposed model has the advantage of simplicity over the previous models while keeping the confidentiality of interviewee. Furthermore, we will extend our mixed model to stratification model.

Cache or Carry: Will Napster Doom Video on Demand?

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This paper considers the legality of individual consumers creating new digital products, such as portable movie players. Cable TV companies are beginning to offer video-on-demand, which is the next evolutionary step after pay-per-view. Supporters compare VOD to video movie renting without going to the video store, since new cable and Internet technology makes it possible to download movies, then watch them using VCR-like controls such as fast forward, rewind, and pause. However, a consumer cannot watch a VOD movie on any machine other than the one used to download it. This paper looks at the Digital Millennium Copyright Act to see if it would be legal to develop equipment that could offer the same portability for VOD movies that is already enjoyed with analog movies. Until the DMCA was enacted in 1998, copyright law attempted to balance the need to offer incentives to content creators so they will continue producing new material, while protecting the right of society to use these new creations for general benefit. However, many legal experts indicate the DMCA has tipped the scale significantly in favor of rights holders. Recent court decisions have upheld the DMCA, although the U.S. Supreme Court has not ruled on it. Analysis suggests it would be a violation of law to create a product that transfers digitized copyrighted material to another medium without the owner's permission, because the only way to do so is to break the encryption code, and that is a criminal violation of the DMCA.