College of Human Environmental Sciences – FY2009 Research Abstracts

Addressing Food and Nutritional Security in East Africa by Building a Consortium of African-United States Educators (CAUSE)
The objective is to create a long range strategic plan for the Consortium of African and United States Educators (CAUSE) resulting in a self-sustaining, long-term, regional partnership among three Ethiopian universities, two Kenyan universities, and OSU and Langston University. Our initial problem model focuses on Food and Nutritional Security but this focus also provides a means of goal setting, objective identification, mutual cooperation, funding mechanisms and specific outcomes that will strengthen the capacity of higher education while solving problems for historically underserved populations, including women, in East Africa.
Sponsor: Higher Education for Development, U.S. Agency for International Development
PI/PDs: Stephan Wilson
Department of Nutritional Sciences: Barbara Stoecker
Division of Agricultural Sciences and Natural Resources: Jeff Hattey
Langston University: Roger Merkel

Rise School
This preschool is named "Rise" and focuses on the needs of toddlers and preschoolers who have developmental disabilities. The Rise School implements an effective early childhood special education approach in classrooms which integrate children who have developmental disabilities with typically developing peers. OSU received funding from the State Department of Education for school operation costs as well as initiating a longitudinal research study to explore the physical, cognitive, and socio-emotional development of the children attending Rise.
Sponsor: Oklahoma State Department of Education
PI/PDs: Stephan Wilson, Rachel Stallings

DESIGN, HOUSING AND MERCHANDISING

Brand Identity in Rural Communities as a Source of Economic Development
Data from 836 residents in eight communities in two states were collected during the fall of 2008. The residents' responses reflected their feelings about their community in an effort to help strengthen the identity of the community and increase shopping activity in the downtown. Initial analysis has focused on the non-tourism based communities although tourism and non-tourism based communities will be compared. Results indicate that resident perception of downtown image as well as slogans and symbols are positively related to the downtown shopping intentions of the residents. The community's brand identity is important to increasing the downtown shopping traffic.
Sponsor: United States Department of Agriculture, Oklahoma Agriculture Experiment Station
PI/PD: Jane Swinney

Institute for Protective Apparel Research and Technology (IPART)
The Institute for Protective Apparel Research and Technology teams academic, industry, and government experts in applied research, design, and testing of the next generation of multifunctional materials and technologies needed for body armor and other systems to create more effective body armor and other protective systems to save lives of soldiers and civilian workers.
PI/PDs: Donna Branson, Semra Peksoz, Adrianna Petrova
College of Engineering, Architecture, and Technology: Hongbing Lu, Jan Hanan, James Smay

Personal Protective Technologies for Current and Emerging Hazards and Smart Clothing for Firefighter Protection
A proof of concept study to develop sensors to wirelessly detect and transmit physiological data to a centralized control location in order to monitor the health and safety of firefighters is continued. To assess the durability and reliability of wireless signals, the prototype sensors were embedded in firefighter coats and tested using a thermal manikin in hot and humid conditions. A series of testing is planned to determine the range of distance and time

frame in which the sensors are reliable.
Sponsors: United States Department of Agriculture, Oklahoma Agriculture Experiment Station and Oklahoma Center for the Advancement of Science and Technology
PI/PDs: Semra Peksoz, Donna Branson

Rynoskin™ Barrier Evaluation
Exposure to ticks and flies can threaten health through the transmission of disease and cause severe allergic reactions due to their saliva. Historically, preventing exposure has been the most effective method of limiting disease transmission. Chemical barriers can be effective, but involve chemicals that some people may not tolerate. Protective fabrics and clothing systems may be important in preventing exposure to ticks and biting flies (known as biting midges, sand fleas, or no-see-ums). The purpose is to evaluate the effectiveness of a textile and garment system (Rynoskin™) as protection against ticks (Amblyomma americanum) and biting flies (Ceratopogonidae: Culicoides sonorenisis).
Sponsor: Har-Son, Inc.,
PI/PDs: Cheryl Farr
Division of Agricultural Sciences and Natural Resources: Michael Reiskind

HUMAN DEVELOPMENT AND FAMILY SCIENCE

Analysis and Consultation Management for the Oklahoma Marriage Initiative
Oklahoma State University is engaged with the Oklahoma Marriage Initiative (OMI) to provide on-going statistical analysis of program data, consult on program evaluation design, data collection methods/tools, and provide leadership for the OMI's Research Advisory Group.
Sponsor: Oklahoma Department of Human Services
PI/PD: Christine Johnson

Child, Family, and School Influences on Developmental Outcomes of Young Children with and without Disabilities
The goal of this longitudinal study is to explore the physical, cognitive, and social-emotional development of children with and without disabilities who are attending the Rise School of Stillwater, as well examine the effects of Rise School attendance on family functioning. An additional objective is to examine the effects of Rise School classroom participation on the beliefs and practices of OSU Early Childhood Education teacher candidates (i.e., early childhood education majors). Research to date indicates that children attending the Rise School are showing gains in all areas of development.
Sponsor: Oklahoma State Department of Education
PI/PDs: Amy Halliburton, Hyunjin Kim

Development and Delivery of Five Training Sessions for Child Development
Dr. Barbara Sorrels, Early Childhood consultant, conducted 18 child development training sessions for all of Oklahoma Childcare Services licensing staff.
Sponsor: Oklahoma Department of Human Services
PI/PD: Linda Sheeran

Empowering Older Oklahomans and Rural Communities
The purpose of this project is to evaluate individual, family, and community barriers to positive nutrition and health among rural older Oklahomans. The findings from this study are being used to develop an Oklahoma Cooperative Extension Service curriculum called "Empowering Older Adults with Assistive Technology to Shop, Cook, and Eat" which is being disseminated statewide in October, 2009.
Sponsor: United States Department of Agriculture
PI/PDs: Whitney Brosi, Jan Johnston, Janice Hermann
Seretean Wellness Center: Linda Jaco

Evaluation of Adoptive Couples Marriage Enrichment Retreats
The purpose of the project is to assess short-term and long-term benefits of marriage enrichment retreats sponsored annually by Oklahoma Department of Human Services and delivered to Oklahoma couples who have adopted a child. Findings from the study are being utilized by family support agencies to increase family stability and child well-being.
Sponsor: Oklahoma Department of Human Services
PI/PD: Christine Johnson

Evaluation of Special Caregivers Retreats
The objectives of this project are to evaluate program outcomes/impacts and produce research briefs in relation to marriage education retreats that are sponsored annually by Oklahoma Department of Human Services. The retreats target married couples who are caregivers to special needs children, including parents of children with autism, grandparents raising grandchildren, foster parents, and children with developmental disabilities. Findings will be used to impact family policy and inform family service providers of the unique challenges faced by these couples.
Sponsor: Oklahoma Department of Human Services
PI/PD: Christine Johnson

Early Settlement North - Conflict Settlement
The Early Settlement North (ESN) Conflict Resolution Program is part of a statewide mediation network guided by state legislation and funded by the Alternative Dispute Resolution System of the Oklahoma Supreme Court. ESN is committed to consistently providing high quality, effective, inexpensive, and expeditious conflict resolution. Each year ESN mediates approximately 350 cases involving disputes over money, property, consumer dissatisfaction and/or relationships.
Sponsor: The Supreme Court of Oklahoma
PI/PD: Sue Williams

Families and Schools for Health: One Year Follow Up
The long-term project objective is to develop effective interventions for overweight children. Over 1000 children have been followed since first grade to understand the causes/prevention of child obesity. In FY09, > 5,000 hours were spent collecting weight and psycho-social interview data from almost 700 third and fourth graders in 34 rural schools. Over 150 teachers completed 691 questionnaires. Physical fitness was assessed among a subsample of children. Analysis of intervention data suggests the first grade interventions impacted parenting behavior and children's thinking about weight-related issues.
Sponsor: Oklahoma Center for the Advancement of Science and Technology
PI/PDs: Amanda Harrist, Glade Topham, Laura Hubbs-Tait
Department of Nutritional Sciences: Lenka Shriver
College of Arts and Sciences: Melanie Page

Father's Count Study
Fathers Count! is a three-state study of how African American and Latino adolescent males and their fathers or father figures perceptions of contextual factors (neighborhoods, schools, and parents) are associated with delinquent behavior, depression, and educational success. The first wave of data collection began in the 2008-2009 academic year and involved self-report surveys completed by adolescents and father figures and census data about neighborhoods. Wave two of data collection with adolescents is on-going. Results will be used by professionals who seek to prevent delinquency and depression, while promoting educational success in Latino and African American male adolescents.
Sponsor: North Carolina State University, U.S. Department of Justice
PI/PD: Carolyn Henry

Fostering Aspirations and Success through Educational Resources
This project explores adolescent identity and goal development among recently-homeless families in transitional housing to tailor a weekly intervention program (Tiger's Action Plan, Tiger Woods Foundation) to this unique

population. Pre/post questionnaires, interviews, and interaction tasks provide baseline data about these families as well as indicators of program efficacy. Early findings suggest participants hold ambitious goals with low expectations of achievement. Post-intervention youth report showed more confidence and optimism about themselves, their goals, and their futures; know their community better; have improved parent-child relationships; feel life has changed for the better, and wish the program were permanent. Family recruitment is ongoing.
Sponsor: United States Department of Agriculture, Oklahoma Agriculture Experimentation Station
PI/PD: Mike Merten

Geriatric Education Center
The Oklahoma Geriatrics Education Center (OKGEC) is a component of the Reynolds Department of Geriatric Medicine at the University of Oklahoma Health Sciences Center, and is in partnership with OSU, the University of Central Oklahoma, Langston University, East Central University, and the Oklahoma Area Health Education Center. The OKGEC helps to distribute resource and educational materials focused on aging concerns using Grand Rounds, Tidbits, conferences, electronic resources, and other forms of webinars. In April and with OKGEC support, OSU and University of Central Oklahoma collaborated to bring a Regents Professor from University of North Texas, Dr. Bert Hayslip, to speak on Grandparent Caregivers.
Sponsor: University of Oklahoma Health Sciences Center, Health Resources and Services Administration
PI/PD: Tammy Henderson

HES 4000 Honors Seminar: Less is More: Developing a Local and Global Community-Based Service Program
Undergraduate honors students from Nutritional Science, Human Development and Family Science, Hotel and Restaurant Administration, Business, Theater, Speech Pathology, and Communication worked in service-learning teams to gain in-depth understanding of obesity and malnutrition—two important global societal issues. Students developed a project wherein local restaurants serve half-portions and donate profit to a food program in Kenya. Students developed communication materials (e.g., webpage, PowerPoint presentations, fliers, brochures) to educate the community about the program. They refined their ideas by meeting with students at a campus event and conducting a focus group with restaurant owners. The program is ready for implementation.
Sponsor: Oklahoma State Regents for Higher Education, Oklahoma Campus Compact
PI/PD: Amanda Harrist

Increasing Efficiency and Well-Being in Family Care Systems by Improving Communication and Decision Making Between Caregivers and Elderly Recipients of Care
This project evaluated decision making and communication processes between the care of elderly recipients of and their caregivers in order to address stress, resultant quality of life, and inefficient care arrangements.
Sponsor: United States Department of Agriculture, Oklahoma Agriculture Experiment Station
PI/PD: Whitney Brosi

National Endowment for Financial Education High School Financial Planning Program
The High School Financial Planning Program is a financial literacy curriculum. Materials are available to high school students and teachers free of charge. The program assists educators with travel and materials as they assist teachers with program delivery or train other educators to provide the program.
Sponsor: National Endowment for Financial Education
PI/PD: Sissy Osteen

National Healthy Marriage Resource Center Library Development Project
The National Healthy Marriage Resource Center (NHMRC) Library Development Project was created in order to take advantage of a large set of resources provided by the Special Assistant to the U.S. Secretary for Health and Human Services (HHS) for Marriage Education. These materials were a rich collection of white papers, journal articles, books, meeting proceedings, government documents, congressional testimony, etc. over topics related to the development and ongoing programmatic growth of the HHS National Healthy Marriage Initiative (NHMI). A

team worked for six months to review, sort, catalog, and manage these materials so that the Library component of the NHMRC was expanded in an intentional, well planned way.
Sponsor: Public Strategies, Inc.
PI/PD: Kelly Roberts

Pa<ee Pakoo<oo Early Learning Center
From January to June, children's performance improved significantly in the areas of verbal memory for words and sentences, verbal memory for short story, opposite analogies (verbal reasoning), and conceptual grouping (perceptual reasoning). In addition more than 45% of children attained national norms or the mean of the standardization sample on verbal reasoning, pictorial memory, and perceptual reasoning.
Sponsor: Pawnee Nation of Oklahoma, United States Department of Education Office of Indian Education.
PI/PD: Laura Hubbs-Tait

Parent and Child Connection
This program provides in-home and group education and support for expectant families or those who have a baby. The program continues until the child is six years old. Using evidence-based curricula and program practices, goals are to assess family's strengths and needs, enhance family functioning, and promote positive parent-child interaction and healthy childhood growth and development. Through four program sites serving seven counties in FY 2009, 211 families were provided 2,952 home visits, 566 child development screenings, in addition to 78 parent education, support group, and family activity sessions.
Sponsor: Oklahoma State Department of Health
PI/PD: Debbie Richardson

Positive Parenting
Because of the importance of effective parent-adolescent relations and family communication skills in promoting adjustment (e.g., parent mental health, adolescent reduced problem behavior, and risk taking), educational programs hold outstanding potential to promote resilience. Thus, our project utilized Shure and Israeloff's (2000) I Can Problem Solve (ICPS) program, which focuses on children's problem-solving and conflict resolution skills. In a sample of sixty children (ages 8-12) and their parents, we are: 1) evaluating relations between parenting, family conflict, and mental health before and after the conflict resolution intervention, 2) evaluating the efficacy of the intervention as indicated by positive changes in problem-solving skills and overall mental health, and 3) examining family and emotional factors that promote adjustment and communication in an observational study. We are in the process of analyzing and coding collected data. Initial results indicate improved conflict resolution skills following the program.
Sponsor: United States Department of Agriculture, Oklahoma Agriculture Experiment Station
PI/PD: Amanda Morris

Researching Recruitment Challenges in Low Income Marriage Education Programs
This project uses a three-pronged approach to study recruitment challenges experienced by marriage education programs across the nation. Data collected from a national survey will be verified by observing couple interactions in a lab setting. Marriage education program providers will also be asked to describe lessons learned.
Sponsor: U.S. Department of Health and Human Services
PI/PDs: Brandt Gardner, Kelly Roberts

SCHOOL OF HOTEL AND RESTAURANT ADMINISTRATION

Crisis Management
This study examined the foodservice managers' perceived level of importance and performance relative to preparedness, implementation, response, recovery, organizational effectiveness, and organizational development related to resolving a food safety, food borne illness, or food biosecurity crisis. Factor analysis identified three underlying dimensions: (1) sanitation regulations and protocol, (2) foodservice production and sanitary practices, and (3) knowledge of food pathogens. The importance-performance analysis revealed that conformance to sanitary standards was needed to maintain the best practices to guard against food borne illness and food security

criticalities. Factor analysis for leadership revealed six underlying dimensions of crisis management individuals: sincere, creative, respectability, proficient, mature, and self-sustaining in order to be effective facilitators of a crisis management preparedness plan. The results emphasized the importance of designing a workable preparedness sanitation management plan that would uphold high operational standards, facilitate in preserving the quality of food, and to protect the consumer from experiencing a food borne illness criticality. The multiple regression results indicated that in sanitation management factors had a positive effect on organizational development and organizational efficiency in facilitating a crisis management plan.
Sponsor: United States Department of Agriculture, Oklahoma Agriculture Experiment Station
PI/PD: Jerrold Leong

Off-Campus Ph.D. Program for University of Technology, Jamaica
There is a need for advanced academic degree preparation in the area of higher education for Hospitality and Tourism Management in Jamaica. Jamaica lacks advanced educational degrees available for teaching and research in hospitality and tourism management in higher education. The Oklahoma State University (OSU) Ph.D. degree in Human Environmental Sciences (HES) with an Option in Hospitality Administration offers the possibility for such education and advanced preparation in hospitality and tourism management.
Sponsor: University of Technology, Jamaica
PI/PD: Hailin Qu

The H.O.T.E.L Atlantis Program-Higher Opportunities for Training, Education, and Language
The objective of the program is to strengthen the quality of entry-level managers available to the transatlantic lodging industry by developing a specialized flexible pathway dual-degree undergraduate program that creatively incorporates the best resources available at three reputed universities on both sides of the Atlantic.
Sponsor: United States Department of Education
PI/PD: Radesh Palakurthi

NUTRITIONAL SCIENCES

Anti-Inflammatory Properties of Compounds in Dried Plums
Chronic inflammation is a major contributing factor in the simultaneous development of osteoporosis and atherosclerosis associated with aging. This project focused on the ability of polyphenolic compounds in dried plums to prevent these conditions. Results of this research revealed that dried plum's polyphenols reduce bone resorption and stimulate bone formation, and that these effects are mediated by key cellular regulators. In terms of the cardiovascular system, supplementation with dried plum polyphenols prevented early events associated with the development of atherosclerosis, and prevented vascular pathology. The overall response to the polyphenols was more pronounced in the cardiovascular than the skeletal system.
Sponsor: Oklahoma Center for the Advancement of Science and Technology
PI/PDs: Brenda Smith, Edralin Lucas

Beneficial Effects of Dried Plum and Age-Related Osteoporosis
Previous studies have demonstrated that dietary supplementation with dried plums reverse bone loss associated with estrogen deficiency, but no information is available with regard to age-related bone loss. This project is designed to determine whether consumption of dried plums can prevent age-related bone loss and restore bone lost to aging in an animal model. Preliminary results suggest that supplementing the diet of aged animals with dried plum can reverse bone loss due to aging over time. If these initial findings hold true through the study duration, it is likely that clinical studies to test the efficacy in humans will follow.
Sponsor: Northern California Institute for Research and Education, Inc.
PI/PDs: Brenda Smith
University of California and Veterans Affairs Medical Center: Bernard Halloran

Bone Physiology and Mechanics in Osteomyoplasty Amputation Rehabilitation
Patients who undergo lower limb amputation due to trauma or dysvascular disease are at great risk, long-term, for osteoporotic fracture. This research is focused on the evaluation of the short- and longer-term effects of two

different surgical amputation techniques on bone integrity and rehabilitation capacity. Participants are randomly assigned to one of two surgical procedures and then undergo a comprehensive rehabilitation program which includes a six-month exercise program, nutritional assessment and follow-up analyses of bone density, bone micro-structure, functional capacity and indicators of the immune response.
Sponsor: Veterans Affairs Medical Center
PI/PD: Brenda Smith

Chickasaw Nation Social Marketing
Social marketing is an effective strategy to address culturally specific behavior change among diverse audiences. This research is a multi-year project which addresses the nutrition and health concerns of Native American families who receive either commodity or supplemental nutrition assistance program benefits. Social marketing messages are being developed based on emic views of product, promotion, price, and place. The research is iterative in that messages are developed, evaluated, and reformulated with indigenous input. The long-term goal is to positively influence the state of obesity among Native Americans living in Chickasaw Nation boundaries by attending to cultural and economic realities.
Sponsor: Chickasaw Nation
PI/PD: Stephany Parker

Chronic Effects of Freeze-Dried Whole Blueberry Drink Consumption on Biomarkers of Lipid Peroxidation and Inflammation in Subjects with Metabolic Syndrome
This research study will analyze the chronic effects of freeze-dried whole blueberry drink consumption on clinical features of Metabolic Syndrome (MeS) and biomarkers of oxidative stress and inflammation in subjects with MeS. Twenty-five subjects with MeS will be recruited following an initial screening by telephone questionnaire. Blood draws and anthropometric measurements will take place at initial screening, four, and eight weeks of the study. We will also assess the effects of blueberry flavonoids on insulin resistance. Ongoing data analyses have shown blueberry consumption to decrease systolic blood pressure in these subjects with metabolic syndrome and a decreasing trend in oxidized lipids
Sponsor: United States Highbush Blueberry Council
PI/PD: Arpita Basu

Common Mechanisms Controlling the Response to Iron and Oxygen Availability
The long term goal of this proposal is to advance understanding of how iron metabolism is coordinated, and how alterations in iron sensing can lead to the development of disease. Our primary objectives are to determine the extent to which iron status affects the coordination of oxygen signaling by modulating the expression of hypoxia factor 2-alpha (HIF2a) and to characterize the HIF2a transcriptional network that is sensitive to iron regulation. Importantly, we will also critically examine the role of iron regulatory proteins (IRP) in modulating HIF2a protein translation and compare this regulation to established targets of IRPs.
Sponsor: United States Department of Agriculture
PI/PD: Stephen Clarke

Cranberry Flavonoid Consumption and Biomarkers of Lipid Peroxidation and Inflammation in Subjects with Metabolic Syndrome
Metabolic syndrome (MeS), a constellation of several risk factors including dyslipidemia, hypertension, central adiposity, and impaired fasting glucose, is also a condition associated with increased aging, inflammation, and oxidative stress. Cranberry flavonoids are potent antioxidants and also anti-inflammatory agents. The main objective of this randomized controlled trial is to analyze any difference in glycated hemoglobin (HbAlc), glucose and lipid levels, and biomarkers of oxidative stress and inflammation in subjects following a four-week intervention of cranberry flavonoids in comparison to placebo. Repeated measures ANOVA will be performed to detect differences between groups at different time points. Ongoing study analyses show a decreasing trend in systolic blood pressure following cranberry juice consumption.
Sponsor: Cranberry Institute
PI/PD: Arpita Basu

Does Selenium Affect Inflammation and Bone Quality
This research will evaluate potential synergistic effects of selenium deficiency and inflammation on bone loss as well as potential beneficial effects of selenium supplementation. The model also provides a basis for future investigation of nutrient, phytochemical, and drug effects on bone loss due to chronic inflammation.
Sponsor: Oklahoma Center for the Advancement of Science and Technology
PI/PDs: Barbara Stoecker, Brenda Smith

Effects of Mango on Bone Parameters in High Fat Diet-Induced Obesity
Osteoporosis is a major public health threat and some dietary practices such as low calcium intake and high fat diet contribute to the development of this condition. This study investigated the effect of freeze dried mango on bone parameters in mice which were fed a high fat diet. Our hypothesis is that compounds in mango can counter the negative effects on bone due to high fat diet. Mangoes contain high amounts of vitamin C, carotene, and phenolic compounds that may have a role in maintaining skeletal health. Our findings indicate that mango improved bone parameters and reduced body fat due to a high-fat diet. Human studies are warranted to confirm our findings.
Sponsor: National Mango Board
PIs/PDs: Edralin Lucas, Brenda Smith, Stephen Clarke, Solo Kubividila

Evaluation of the Anti-inflammatory Properties of Juice from Grape Varieties Grown in Oklahoma
Chronic inflammation is implicated in the development of many chronic conditions such as cardiovascular disease, obesity, and diabetes. Grapes are a rich source of polyphenolic compounds with potent antioxidant and anti-inflammatory properties. However, studies have shown that phenolic content can be influenced by environmental factors, maturity, and the variety of grapes. This study examined the anti-inflammatory properties of juice from grape varieties grown in Oklahoma. Increased knowledge of the health benefits of locally grown grapes may increase their consumption which will help Oklahoma's viticulture and agritourism industry.
Sponsor: United States Department of Agriculture, Oklahoma Agriculture Experiment Station
PI/PD: Edralin Lucas

Evaluation of the Coordinated School Health Program
An evaluation of Coordinated School Health (CSH) Programs in Oklahoma was conducted during the 2008 school year. A case-control model was utilized with four control and four intervention elementary school sites. The aim of the study was to evaluate the effectiveness of CSH for the purpose of communicating research based evidence to state decision-makers regarding the efficacy of such initiatives for improving the health status and academic achievement of students. Methodology included administration of the School Health Index and a process evaluation consisting of personal interviews with school stakeholders at each site. The project is a cooperative effort of Oklahoma State Department of Health (OSDH), Schools for Healthy Lifestyles/University of Oklahoma Health Sciences Center (SHL/OUHSC), Tulsa City-County Health Department It's All About Kids (TCCHD IAAK) and the Oklahoma State University.
Sponsor: Oklahoma State Department of Health
PI/PDs: Deana Hildebrand, Nancy Betts

Fubar Performance Recovery Drink
This study evaluated the effectiveness of an energy beverage on hydration and exercise performance. Eleven ROTC men participated in an acute phase and chronic treatment phase in a placebo controlled crossover design. Total time to exhaustion increased and maximum aerobic capacity improved significantly with the energy beverage in both the acute and chronic phases. Hydration was slightly, but not significantly, higher with the energy beverage in both phases. There were no changes in lipid profile. Urinary caffeine was well below the maximum limit allowed for sports competitions. The energy beverage is useful for improving performance during endurance exercise without providing excessive caffeine.
Sponsor: Natural Styles, Inc.
PI/PDs: Nancy Betts
College of Education: Doug Smith

Growing Strong Bodies and Minds: A Literacy/Nutrition Education Program
The aim of the project is to utilize children's literature to promote the development of healthful food preferences, physically active lifestyles, and literacy skills in young children. It supports the addition of whole grains, fruits and vegetables, and low-fat dairy to United States Department of Agriculture WIC and National School Lunch programs, and is designed to build pre-reading and reading skills in young children. The curriculum will be distributed statewide to 145 Oklahoma Cooperative Extension, Oklahoma State Department of Health and Indian Tribal Nation nutrition and health educators during the fall of 2009.
Sponsor: Oklahoma State Department of Health
PI/PD: Deana Hildebrand

How Does Dried Plum Reverse Bone Loss
Osteoporosis is a debilitating problem for postmenopausal women and one strategy for improving skeletal health is to utilize foods rich in bioactive compounds (e.g. dried plums) that can prevent and reverse bone loss. Previously we have shown that dried plum has potent effects on bone, however, our understanding as to how these effects are mediated has been limited. Results from these studies are providing evidence that supplementation with dried plums suppresses bone metabolism following menopause. Current studies will provide insight into the compounds in dried plums that are responsible for these bone-protective effects.
Sponsor: United States Department of Agriculture
PI/PDs: Brenda Smith, Edralin Lucas

Mango Modulates Glucose and Lipid Parameters in High Fat Diet-Induced Obesity
The objective of this project is to investigate the effect of freeze dried mango on glucose and lipid parameters in an animal model of high fat diet-induced obesity. Mangos contain high amounts of beta carotene, vitamin C, fiber, and phenolic compounds that may contribute to its health benefits. Our findings thus far demonstrated that a diet containing mango, improved blood glucose to a similar degree as the glucose lowering drug, rosiglitazone, in an animal model of diet-induced obesity.
Sponsor: National Mango Board
PI/PD: Edralin Lucas

Maternal Dietary Nutrients and Neurotoxins in Infant Cognitive Development
Nutritional research into infant cognitive development has focused on single nutrients and examined individual components of cognition, such as memory. In this project, we take the approach of examining multiple cognitive processes and nutrition factors when infants are three, six, and nine months old to develop a model of the effects of nutrition on infant development. We will test the hypothesis that significant variation in infant cognitive development assessed at these three ages will be accounted for by variation in the zinc, iron, lead and cadmium content of maternal milk and blood sampled from mothers of breastfed infants when they are three months old.
Sponsor: United States Department of Agriculture
PI/PDs: Tay Kennedy, Barbara, Stoecker
Department of Human Development and Family Science: Laura Hubbs-Tait
College of Arts and Sciences: David Thomas

Momordica Charantia Modulates Glucose and Lipid Parameters in High Fat Diet-Induced Obesity
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Sponsor: United States Department of Agriculture
PI/PDs: Edralin Lucas, Brenda Smith

Oklahoma Nutrition Program—Food Stamp Nutrition Education Program
The purpose of this program is to empower families with the knowledge and skills needed to make healthy lifestyle choices by providing nutrition education, to promote appropriate nutrition education messages, and to refer families to agency nutrition programs. Pre/post evaluation records indicate 95% of the families/households graduating from the program exhibit a positive change in their diet at the time of exit from the program.
Sponsor: Oklahoma Department of Human Services, Food Stamp Program, U.S. Department of Agriculture
PI/PDs: Debra Greene-Garrard, Janice Hermann

Osteoporosis Risk in Oklahoma Native American Women: The Role of Inflammation and Diabetes
Current estimates related to the prevalence of osteoporosis are based primarily on Caucasian populations. Native American women may be considered a high risk for osteoporosis due to lifestyle factors such as physical activity, calcium and vitamin D intake, as well as the incidence of Type II diabetes. This study is designed to assess osteoporosis risk in Oklahoma Native American women and the role of Type II diabetes and inflammation. To date we have enrolled 300 Native American women (>50 years of age). Follow-up analysis will provide insight into this ethnic group's risk for osteoporosis and the contributing factors.
Sponsor: United States Department of Agriculture, Oklahoma Agriculture Experiment Station
PI/PD: Brenda Smith

Utilizing an Ecological Perspective as a Framework for Understanding Native American Elder's Views of Diabetes for the Development of an Indigenous Action Plan
Formative research indicates that elders are important family change agents when it comes to diet-related health behaviors. Our research utilizes an ecological perspective to identify personal, interpersonal, and environmental factors which impact intergenerational health decisions. Participatory methods are being used to identify how elders can influence change at multiple levels. Research results are expected to inform the development of diabetes prevention programs among Native American families. The long term goal of this research is to decrease the incidence of chronic diseases such as diabetes and obesity by attending to culture preferences when designing successful educational programs for Native American families.
Sponsor: Chickasaw Nation Health System
PI/PDs: Stephany Parker, Janice Hermann

Zinc and Maternal-Infant Brain Function in Southern Ethiopia: Randomized Controlled Trials
Zinc status of many children in Southern Ethiopia is low, and low zinc status has been associated with less focused attention and decreased motor function in children. We are measuring growth and testing cognition of infants and young children, as well as assessing dietary zinc intakes and nutritional status of their mothers. Total zinc absorption by women in late pregnancy is ~ 50% of the estimated physiologic requirement. Results from these trials in a zinc deficient population will provide guidance for establishing dietary recommendations for infants and for pregnancy in the United States.
Sponsor: University of Colorado Health Sciences Center, National Institutes of Health
PI/PDs: Barbara Stoecker, Tay Kennedy
Department of Human Development and Family Science: Laura Hubbs-Tait
College of Arts and Sciences: David Thomas