

College of Human Environmental Sciences – FY 2004 Research Abstracts

DEPARTMENT OF DESIGN, HOUSING, AND MERCHANDISING

Design Solutions for the Marland Mansion

Interior Design students developed designs for a Visitors Center for the Marland Mansion that include a reception area, theater, museum shop, catering kitchen, offices and restrooms. Students also created design solutions for the reuse of the Artist Studio as a restaurant and a catering kitchen for the Marland Grand Avenue House.

Sponsor: Marland Estate Foundation

PIs: Carol Bormann, Theodore Drab

Designs and Functions of Small Business Web Sites: A Preliminary Study

The purpose of the study is to expand understanding of what constitutes an effective web design for small business. Four websites of Oklahoma craft-related small businesses were evaluated using a questionnaire. The results will be used to help small business owners better develop effective marketing tools and disseminate to other professionals and academics in this area.

Sponsor: Donna Cadwalader Oklahoma Association of Family and Community Education Research and Development Program

PIs: Hong Yu, Glenn Muske

Enhancing Health and Safety through Personal Protective Equipment

Oklahoma provided thermal and evaporative resistance data on selected NC-170 test materials for use in objective 1 of the project, i.e., the development of a statistical model to be used for selection of protective clothing materials. A fit analysis of two prototype garments was undertaken in collaboration with Cornell University using a 3-D body scanner.

Sponsor: Oklahoma Agricultural Experiment Station

PI: Donna Branson

Learning Anytime Anywhere Partnerships: A National Model for Inter-institutional, Post Baccalaureate Distance Education Programs

The Great Plains Interactive Distance Education Alliance (GP-IDEA) has collaborated to support online, inter-institutional graduate distance education programming.

Representatives from 10 institutions have collaborated to overhaul the policy and practice environment, simplify inter-institutional partnership arrangements, and provide for academic and fiscal accountability.

Sponsors: Kansas State University, United States Department of Education

PIs: Lona Robertson, Shiretta Ownbey

Protective Clothing for First Responders to Terrorism Incidents

Year two tasks were completed culminating in the successful thermal manikin testing of two prototype personal cooling garments and a prototype cooling unit. The goal of year three is the development and testing of the next generation of a prototype cooling system to include a cooling garment interfaced with a portable cooling unit. This work includes

focus group interviews with first responders, a physiological study of subjects wearing prototypes, development of a sizing system for the prototypes, and various other tasks in an effort to improve the prototype garments and cooling unit.

Sponsor: Memorial Institute for the Prevention of Terrorism

PIs: Donna H. Branson, Cheryl A. Farr, Huantian Cao

Clemson University: Christine Jarvis

Sciperio, Inc.: Kenneth Church, Robert Taylor

MesoSystems Technology, Inc.: Chuck Call

NanoPore, Inc.: Douglas Smith

The Impact of the Near Environment on People's Psychological and Physical Well Being

Following the research and development of the project program, the multi-disciplinary team is combining expertise in Interior Design, Landscape Architecture, and Construction Management to design a group home to serve as a prototype for residential care of dually diagnosed (mentally ill/developmentally disabled) adolescents in Oklahoma.

Sponsor: Oklahoma Developmental Disabilities Council

PIs: Theodore Drab, Carol Bormann, Lisa Vogel, Bill Beitz

College of Engineering, Architecture and Technology: Mark Pruitt

The *Virtual Exchange* as a Critical Thinking and Experiential Learning Tool

Following successful classroom testing of the educational program, project procedures and results were presented at the Ed-Media World Conference on Multimedia, Hypermedia and Telecommunications in Honolulu, and were published in volume six of *Internet and Higher Education*. Options for commercial distribution of the computer program are being explored.

Sponsor: United States Department of Agriculture, Higher Education Program

PIs: Lynne Richards, Donna Branson

Department of Human Development and Family Science: Stacy Thompson

Tourism Shopping: Do Retailing Strategies Fit Consumers' Expectations?

The purposes of the study are to expand understanding of retailing strategies employed by the tourism industry in Oklahoma and consumer expectations for travel and shopping in Oklahoma and to make recommendations to the Oklahoma souvenir and service industries to better approach their target markets. The project includes both qualitative and quantitative studies.

Sponsor: Oklahoma Agricultural Experiment Station

PI: Hong Yu

DEPARTMENT OF HUMAN DEVELOPMENT AND FAMILY SCIENCE

1970 Ralph Nader Study Group on Nursing Homes

The research project is about a small task force of young ladies from Miss Porter's prestigious school in Farmington, CT, commissioned in 1970 by Ralph Nader to explore nursing home conditions in America. This newest study explores how task force members' lives were affected, personally and professionally, by this experience.

Sponsor: Bartlett Endowment Fund
PIs: Lance Robertson, Cindy Brown

2002 Oklahoma Social Indicator Survey

Funding from four state agencies was obtained to conduct the 2002 Oklahoma Social Indicator Survey (OSIS 2002), a random household survey of adults who reside in Oklahoma. OSIS is an annual "omnibus" survey, where individual organizations define and pay for those questions that are of special interest to them. Data from the study provided useful and technically sound information for researchers and public policy decision-makers about characteristics, attitudes, and behaviors of Oklahoma residents. The participating agencies have used the information for market analysis, needs assessment, project evaluation, and organizational planning.

Sponsors: Oklahoma Department of Rehabilitation Services, Oklahoma Department of Human Services - Division of Child Care, Oklahoma Department of Wildlife Conservation, Oklahoma Department of Health - Office of Child Abuse Prevention and Women Infants and Children Program

PI: Christine Johnson

2003 Oklahoma Child Care Market Rate Survey

The focus of this study was to determine the average cost of child care (i.e., market rate) in the state of Oklahoma. Findings from the study will help establish ODHS reimbursement rates for child care subsidies to low income families.

Sponsor: Oklahoma Department of Human Services, Division of Child Care

PIs: Christine Johnson

College of Business: Mark Snead

2003 Oklahoma Social Indicator Survey

Funding from four state agencies and one private company was obtained to conduct the 2003 Oklahoma Social Indicator Survey (OSIS 2003), a random household survey of adults who reside in Oklahoma. OSIS is an annual "omnibus" survey, where individual organizations define and pay for those questions that are of special interest to them. Data from the study provided useful and technically sound information for researchers and public policy decision-makers about characteristics, attitudes, and behaviors of Oklahoma residents. The participating agencies have used the information for market analysis, needs assessment, project evaluation, and organizational planning.

Sponsors: Oklahoma Department of Rehabilitation Services, Oklahoma Department of Health – Women, Infants, and Children, Oklahoma Department of Mental Health and Substance Abuse Services, Oklahoma State Regents for Higher Education, Red Corn Native Foods, Inc.

PI: Christine Johnson

Assessment of the Oklahoma SoonerStart Early Intervention Program: The Family's Perspective (2004)

SoonerStart provides early intervention services to young children (ages birth to three years) with developmental disabilities and their families. Specifically, the program provides assistance to families by helping them develop skills needed to deal effectively with their

children's disabilities and skills to promote better family functioning. Over 300 current and former SoonerStart family members were interviewed to assess overall satisfaction with the program and to evaluate the services received. Findings from the study revealed very high levels of satisfaction with the program (95% reporting satisfaction). In addition, 90% of family members reported an increased ability to interact effectively with their child.

Sponsor: Oklahoma Commission on Children and Youth

PI: Christine Johnson

Bartlett Independent Living Center: An Applied Day Treatment, Education, and Research

The partnership with Stillwater Medical Center has created an adult day treatment program known as Senior Perspectives. The program is for senior adults with physical and mental disabilities. The Bartlett Independent Living Center has historically been used as a model demonstration home, showcasing more than 100 structural features aimed at helping older adults live independently. Student assistantships and internships are provided.

Sponsor: Stillwater Medical Center

PIs: Esther Winterfeldt, Lance Robertson

Board on Human Sciences FY04 Funded Project Inventory (2004)

The aim of this project is to develop an inventory of current extramural funding in the Human Sciences that will serve as benchmarking information for units in the collegiate human sciences community. Once completed, this study will document the amount and source of funding that supports research, teaching, and extension responsibilities of human science faculty members across the U.S., and the inventory will document funding by institution as well as issue area.

Sponsor: United States Department of Agriculture

PI: Christine Johnson

Children's Cognitive Performance and Socio-Emotional Competence in Head Start Children

The correlation between 2002-2003 teacher ratings of children's language and OSU-administered PPVT-III tests was .38, demonstrating excellent validity. The increase in children's PPVT-III mental age in months from fall to spring was significantly greater than the increase in chronological age – a difference of approximately two months. Thus, Head Start is accelerating vocabulary acquisition by two months.

Sponsor: United CAP Head Start

PI: Laura Hubbs-Tait

Critical Support: Helping Relatives who are Caring for Kin in Foster Care

This program, funded through Generations United, establishes a local support group aimed at helping improve the relationship between a child and his or her foster care provider. In Oklahoma, that is typically a grandparent raising a grandchild. The program has set curriculum and child care is provided during the monthly support group meetings.

Sponsor: Generations United

PIs: Marca Davis, Lance Robertson

Early Childhood Education Masters Program for DHS

The College of Human Environmental Sciences and the Oklahoma Department of Human Services (DHS) Division of Child Care are working together to assure that the state's child care licensing professionals practice what they preach by furthering their education. DHS is giving support for child care providers who are earning a master's degree in early childhood education from OSU. The students in the program are DHS employees who work for the Division of Child Care's licensing program that monitors the state's childcare programs for compliance with minimum requirements. OSU offers different classes throughout the year and uses a variety of teaching methods such as web-based courses, compressed video, and traditional classrooms in order to accommodate the schedules of the working students.

Sponsor: Oklahoma Department of Human Services

PIs: Mona Lane, Deborah Norris, Kathleen Briggs

Enhancing Access to Reproductive Healthcare by Hard-To-Reach Youth: Project Evaluation

The aim of the federally-funded "Community Linkages Project" was to provide access to reproductive health care services for at-risk youth. Tulsa, Oklahoma was selected as a study site for this four-year community development project, and Youth Services of Tulsa served as the coordinating agency. Runaway and homeless youth were the focus of the study. Youth received education pertaining to reproductive healthcare, and participating agencies provided special access to healthcare services for the youth. Evaluation of the project was conducted, and findings indicated that the majority of these at-risk youth do not receive routine health care and are unaware of where to receive services. However, after one-on-one counseling and education, the majority indicated a high level of intent to seek services.

Sponsor: Youth Services of Tulsa

PI: Christine Johnson

Evaluation of the Oklahoma State Park System

As part of a larger assessment of the Oklahoma State Park system, interviews were conducted with 2,000 adult members of randomly selected Oklahoma households. The study found that 58% of Oklahomans have visited a state park within the past two years and most visitors engage in hiking on nature trails and group activities, such as picnicking or playing sports/games. A large majority of Oklahomans believe the state park system is severely (17%) or somewhat (56%) under-funded. Most persons (54%) believe the highest funding priority for the state park system should be to rectify existing problems, such as maintenance. When asked to give an overall letter rating of the state park system, 8% gave an "A" rating, while 52% gave a "B," and 35% gave a "C" rating.

Sponsor: Oklahoma Department of Tourism and Recreation

PIs: Christine Johnson,

College of Education: Lowell Caneday, Deb Jordan

Fire Safety Messages for Young Children 3 to 4 Years Old

Fire safety programs need to be based on developmentally-appropriate practice (DAP), but typically are not. Existing research/curricula were critically evaluated and a checklist and

guidelines were developed summarizing how knowledge of motor, cognitive, and socio-emotional milestones and DAP can be used to adapt eight fire safety messages for children.

Sponsor: FEMA

PI: Amanda Harrist, Kathleen Briggs

Help Seeking Scale: Marital Education Form

This project will specifically measure constraints keeping Oklahomans from seeking marital education workshops designed to strengthen marriages and marital attitudes in the Oklahoma culture.

Sponsor: Oklahoma Department of Human Services, Family Support Services

PI: David Fournier, Kathleen Briggs

Public Strategies, Inc.: Kelly Roberts

Marriage and Divorce in Utah: 2003 Statewide Baseline Survey

This research project was conducted as part of the Utah Marriage Movement and the Utah Governor's Commission on Marriage. The focus of this study was to gather baseline data on the "culture of marriage" and "culture of divorce" in Utah. A statewide baseline telephone survey of citizens was conducted to assess the culture of support for marriage in Utah, including attitudinal and opinion data on marriage, divorce, and cohabitation. A second objective was to gather demographic data on patterns of cohabitation, intent to marry, marriage, divorce, and remarriage among Utahans. Faculty members from Utah State University will be publishing a report based on the findings from the study. The study is expected to guide state services for marriage preparation and marital enrichment programs.

Sponsor: Utah State University

PI: Christine Johnson

Oklahoma City Motorsports Facility Market Study

The Oklahoma City Parks and Recreation Department is conducting a market feasibility study for a new motor sports facility in Oklahoma City. Telephone interviews were conducted with 650 residents in Oklahoma (as well as eight counties in southern Kansas and seventeen counties in northern Texas). The purpose of this study was to assess the recreation habits and interests in auto racing. The results of the study will be used to help gauge the market for a new auto racing facility in Oklahoma City. The study found that 24% of households have someone who attends auto racing events or frequently watches auto racing on TV. Among auto racing enthusiasts, 57% of households had watched a NASCAR race and 52% had watched a stock car race in person during the past year. These respondents also indicated they would most prefer (73%) an asphalt oval track if an auto racing facility were built in Southeast Oklahoma City near Lake Stanley Draper.

Sponsor: Leland Consulting Group, Inc.

PI: Christine Johnson

Oklahoma Family Health Patterns Volunteer Canvassing Study

The OSU Bureau for Social Research (BSR) was contracted to assist with subject recruitment and data collection for a larger study being conducted by the University of Oklahoma's Health Sciences Center. The study concerned health and lifestyle patterns

across generations in Oklahoma families, particularly alcohol use patterns. The BSR's role was to recruit (using random household telephone interviewing) 18-30 year olds in the Oklahoma City Metropolitan area with low to moderate alcohol use patterns.

Sponsor: University of Oklahoma Health Sciences Center

PI: Christine Johnson

Oklahoma Marriage Initiative - Analysis, Consultation, and Management Services

Data analysis was conducted for the Oklahoma Department of Human Services and the Oklahoma Marriage Initiative on an on-going basis using various data sources. In addition, consultation services regarding study design, sampling, data collection, and statistical analysis were provided for various research and process evaluation projects implemented by the initiative. Research briefs on topical marriage issues were written and coordinated.

Sponsor: Oklahoma Department of Human Services, Family Support Services

PI: Christine Johnson

Osage County Sales Tax Redistribution Study

The Osage County Commissioners, working in conjunction with the Osage County Cooperative Extension Service, were interested in knowing voters' opinions on what should be done with the excess sales tax funds. The purpose of this study was to conduct telephone interviews with a random sample of county residents to determine what percentage of voters support the redirection of the excess sales tax funds, and then determine the amount of support for redirecting the funds to six specific county programs. Results of the study found 81% supported a redirection of excess funds; among the supporters, the programs receiving the most backing of funding were: county roads and bridges (93%), county-wide emergency-911 service (86%) and the county health department (82%).

Sponsor: Oklahoma Cooperative Extension Service – Osage County Cooperative Extension Service, Osage County Commission

PI: Christine Johnson

PartnerShips for Aging

Since merging with the Mid-America Congress on Aging, Southwest Society on Aging is now called PartnerShips for Aging, covering seventeen states, and making it the largest regional gerontological association in America. The organization provides training and information to individuals working with older adults. OSU provides administrative and conference planning services to the organization via contract.

Sponsor: PartnerShips for Aging

PI: Lance Robertson

Replenishing the Caregiver

The "Replenishing the Caregiver" program is designed to provide new refreshing services and information to family caregivers to help prevent caregiver burnout. The program covers fifteen counties and provides trainings, support groups, and information services to caregivers through the selected area.

Sponsors: COEDD Area Agency on Aging, OEDA Area Agency on Aging, United States Department of Health and Human Services

PI: Lance Robertson

Sigma Phi Omega Newsletter

Sigma Phi Omega (SPO) is the national gerontology honor society and OSU has an active chapter. For the last several years OSU has had the contract with the national office to design, produce and mail the quarterly newsletter. The newsletter is distributed to approximately 2500 individual members and institutions.

Sponsor: Sigma Phi Omega

PI: Lance Robertson

Stillwater Medical Center 2004 Consumer Opinion Assessment

To assess opinions and perceptions of area hospitals and medical centers, 400 residents of randomly selected households will be surveyed by telephone. Persons will rate the quality of care provided by various area hospitals/medical centers, indicate which hospitals/medical centers they have used within the past year, and specify what additional medical services are needed in their communities. A report will be compiled for the administration and board members for use in their planning and marketing efforts.

Sponsor: Stillwater Medical Center

PI: Christine Johnson

Survey of Adult Oklahomans on Barriers to Relationship Help-Seeking: An Examination of Why Couples Choose to Attend or Not Attend Marriage Education or Couple Services

The survey found that couples who have difficulty identifying and solving problems are much less likely to agree to seek therapy or preventative education. The researchers' efforts focused on reducing the stigma associated with relationship difficulties. The outcome provided outlined recommendations that OMI administrators will use to help couples overcome participation constraints.

Sponsor: Oklahoma Department of Human Services with Oklahoma Marriage Initiative (OMI)

PIs: David Fournier

Public Strategies, Inc.: Kelly Roberts

SCHOOL OF HOTEL AND RESTAURANT ADMINISTRATION

Cooperative Branding Strategy of Rural Oklahoma Tourism Communities

This study is to examine travelers' perceived image of communities in Green country and determine the viability of cooperatively branding these communities as a travel destination. Specifically, the goals of this research is to examine the image components projected through regional cooperative branding efforts, assess travelers' perceived images of the communities and the state of Oklahoma as travel destinations, and compare the differences between the image perceived by the travelers with the induced images promoted by the community marketing agencies.

Sponsor: Donna Cadwalader Oklahoma Association of Family and Community Education Research and Development Program

PIs: Bo Hu

Design, Housing and Merchandising Department: Sissy Osteen, Hong Yu

Eureka Springs Visitors Survey

The purpose of the project was to analyze visitors' traveling characteristics, demographic profile, and expenditures in different hospitality and tourism sectors of Eureka Springs and to solicit the

visitors' opinions on the image of Eureka Springs as a travel destination. It includes the assessment of visitors' attitudes/perceptions toward the Eureka Springs, the measurement of public awareness of the brand, and visitors' expectations and satisfactions toward the service and products provided.

Sponsor: Greater Eureka Springs Chamber of Commerce

PI: Hailin Qu

Feasibility Study for Okemah Economic Development and Authority

This feasibility study was to prepare an economic feasibility report for a possible lodging establishment in the township of Okemah, Oklahoma. This project will provide students with practical learning experience. In order to accurately and effectively complete the feasibility study, the market demand and supply for this project will be identified. Upon the determination of the demand, other major factors will be considered. Some factors to be considered include the costs for the entire project, what size facility will Okemah be able to accommodate, the location of the facility, and what type of amenities will be offered through the new facility. The main question that will be answered is if the hotel will be feasible economically to potential hotel investors.

Sponsor: Okemah Economic Development Authority

PI: Woo Kim

Off-campus International Hospitality Management Master's Program in Thailand

There appears to be an increasing need for advanced professional preparation in the area of higher education for Hospitality and Tourism Management in Thailand. There are several Master's programs in Thailand. However, with the growth in tourism and its concomitant need for hotels and other tourism venues, there is a lack of education with advanced degrees available for teaching and research in hospitality and tourism management in higher education. The Oklahoma State University Ph.D. Degree in College of Human Environmental Sciences (CHES) majoring in Hospitality and Tourism Administration offers the possibility for such education and advanced preparation in Thailand.

Sponsor: Prince of Songkha University, Phuket Campus

PI: Hailin Qu, Patrick Moreo

DEPARTMENT OF NUTRITIONAL SCIENCES

Bone Histology and Imaging System to Assess Nutrient and Phytochemical Effects on Skeletal Health

This project allowed purchase of a system for bone histological and histomorphometric assessments. The instruments will allow us to make dynamic estimates of bone formation and resorption to evaluate effects of nutrients and phytochemicals in the diet on bone histology and skeletal health.

Sponsor: United States Department of Agriculture, National Research Initiative

PI: Barbara Stoecker

Bone Loss Reversal with Prune in Rat Osteoporosis Model

The purpose of this study is to determine if dried plum can reverse bone loss due to skeletal unloading and if so, to identify the bioactive component responsible for such alterations. To date, we have found that dried plum improves bone recovery comparable to that of parathyroid hormone (PTH), the only FDA approved anabolic agent for established osteoporosis.

Sponsor: Oklahoma Center for the Advancement of Science and Technology

PI: Brenda Smith

Calcium-Fortified Dried Plum Supplemented Peanut Muffins for Long-Duration Space Missions

This project focuses on the development of acceptable nutrient-dense, calcium-fortified dried plum supplemented peanut muffins to address bone-loss and other health challenges astronauts experience during space missions, and which are also common to the elderly. To date, the muffins that have been developed would provide 20% daily value of calcium per serving.

Sponsor: Iowa State University, NASA Food Technology Commercial Space Center

PI: Margaret Hinds

Can a Dried Plum Prevent Bone Loss in a Male Model of Osteoporosis?

Dried plum protects against bone loss in females, but little is known about its effectiveness in males. We have found that in males, dried plum prevents bone loss of the femur and vertebra, and enhances bone strength. Future studies will investigate the bone-sparing mechanisms of dried plum and its bioactive components.

Sponsor: United States Department of Agriculture, National Research Initiative

PI: Brenda Smith

Combating Micronutrients Malnutrition: Assessment Constraints to Including Animal Source Foods in Children's Diets in Rural Ethiopia

This project assessed constraints to including animal source foods (ASF) in children's diets with an interdisciplinary team from OSU, Langston University, UCLA, University of Nairobi, Kenya, and Debub University, Ethiopia. A proposal identifying potential sustainable solutions and emphasizing the importance of ASF for children's growth and cognition was developed and submitted to the funding entity.

Sponsor: Global Livestock CRSP, University of California, Davis, USAID

PI: Barbara Stoecker

Does Flaxseed Reduce the Risk of Cardiovascular Disease in Native American Women?

Approximately 60% of Native American women have one or more risk factors for heart disease, such as high cholesterol, hypertension, diabetes, and obesity. This study is investigating whether daily consumption of flaxseed will reduce heart disease risk factors such as high blood cholesterol and glucose in Native American postmenopausal women.

Sponsor: Oklahoma Center for the Advancement of Science and Technology

PI: Edralin Lucas

Effect of Multiple Ingredients on Bone Metabolism in the Ovariectomized Rat

The purpose of this study is to examine the bone-protective effects of various foods rich in estrogen-like compounds when given individually or in combination using a rat model of osteoporosis.

Sponsor: Abbott Laboratories, Ross Product Division

PI: Bahram Arjmandi

Effect of Prune on Indices of Bone Status in Postmenopausal Women

This project has investigated the role of dried plum (prune) on indices of bone health in postmenopausal women. Our findings suggest that dried plum is very efficacious in improving bone status in this population at high risk for osteoporosis.

Sponsor: California Prune Board

PI: Bahram Arjmandi

Effects of Daidzein-rich Isoflavones on the Prevention of Bone Loss in Ovarian Hormone Deficiency

In view of the large and growing number of postmenopausal women now afflicted with osteoporosis, a search for potential bone forming agents to combat osteoporosis is of importance.

This study is investigating whether daidzein-rich isoflavones is effective in preventing bone loss due to ovarian hormone deficiency.

Sponsor: Cargill Health & Food Technologies, Cargill, Inc.

PI: Bahram Arjmandi

Effects of Metabolic Stress and Trace Mineral Interactions

Methods of inducing oxidative stress by trace mineral depletion are being evaluated.

Restriction of dietary minerals during pregnancy was used as a technique for producing young rats with low stores of targeted trace elements. In one experiment, dams were randomly assigned to a 2 x 2 factorial design with selenium and iodine as factors. Young male and female pups were randomly selected from each dam and continued on the same experimental diet fed to the dam. Male pups were consistently more selenium depleted than females. In males, selenium depletion significantly reduced growth rate, bone mineral content, and density of tibia and vertebra. Selenium depletion also significantly reduced bone volume/total volume (BV/TV), trabecular number, and increased trabecular space in vertebra.

Sponsor: Oklahoma Agricultural Experiment Station

PI: Barbara J. Stoecker

Enhancing Learning in Nutrition Using Multi Media Modules

Additional multimedia tutorials were developed focusing on enhancing learning in nutrition. These include digestion, absorption, and minerals. The mineral modules include an introduction to minerals, bone minerals, electrolytes, trace elements, and water. Modules were enhanced with downloadable puzzles for increased vocabulary building of key terms and concepts.

Web address: <http://www.okstate.edu/hes/nsci/nutrition/NSCI2114>.

Sponsor: Howard Hughes Medical Institute

PI: Andrea Arquitt

Higher Education Program

Ten Native American students were recruited to Dietetics or Human Nutrition/Pre-Med majors, and subsequently as dietetic interns/graduate students in Nutritional Sciences. Research indicates that people relate better to someone of their own ethnic background, and an increased number of minorities trained in nutrition and dietetics are essential if minority health care is to improve.

Sponsor: United States Department of Agriculture, Higher Education Multicultural Scholars Program

PI: Lea Ebro

Hypocholesterolemic Mode of Action of Whole Flaxseed

Our earlier studies showed that flaxseed positively affects cholesterol levels in both postmenopausal women and animal models. Our goal is to examine the main pathways by which flaxseed regulates cholesterol levels using female hamsters, a suitable animal model for studying changes in cholesterol that occur in postmenopausal women.

Sponsor: United States Department of Agriculture, National Research Initiative

PI: Edralin Lucas

Impacts of Food Choices and Nutritional Status of Americans

The goal of this project is to better understand factors influencing food choices and nutritional status. The project conducted a study with young women to determine if nutrition education and/or cereal intake will increase folate intake and biomarkers of folate status.

Sponsor: Oklahoma Agricultural Experiment Station

PI: Gail Gates

Interactions between Micronutrients and Their Influence on Immune Function

Both zinc and vitamin E are important for optimal immunity. This project will determine if supplemental zinc and vitamin E act together to affect macrophage function. Results thus far suggest that zinc and vitamin E do interact to affect the growth of the cells and tumor necrosis factor-alpha production in response to stimulation with E. coli endotoxin. Interleukin-10, PGE2, and zinc and vitamin E concentrations of the macrophages are also being assessed. This project will help better define the role of zinc and vitamin E in macrophage function during an infection.

Sponsor: Oklahoma Agricultural Experiment Station

PI: Elizabeth Droke

Meat Analogs Made From Texturized Vegetable Materials

The aim of this project is the development of meat analogs that may reduce the risk of cardiovascular disease. Physical tests (including texture profile) and chemical analyses (fat and flavor profiles using GC-MS) have been carried out on texturized peanut prepared by extrusion processing of partially-defatted peanut meal. The texturized peanut has meat-like properties, but lacks compounds that may impart off flavors. Potential commercial

applications for it are being investigated.

Sponsor: Oklahoma Agricultural Experiment Station

PI: Margaret J. Hinds

Mineral Interactions in Optimal Health

Previously collected and cleaned fifth lumbar vertebrae from rats randomized to treatment [young mature (YM), ovariectomized (OVX), or sham-operated (SHAM)] and diet (6, 12, 35 or 150 ppm Fe) were scanned for micro-architecture (Micro-CT 40, SCANCO MEDICAL AG, Zurich, Switzerland) and strength analyses were performed. YM rats fed 6 ppm Fe for 15 weeks had significantly lower bone volume/total volume (BV/TV) and trabecular number (Tb_No) than YM rats fed either 35 or 150 ppm Fe. The measure of rod- or plate-like trabecular structure (SMI) and trabecular space (Tb.Sp) was significantly greater in the YM 6 ppm group than in either the 35 or 150 ppm groups. In the sham-operated and ovariectomized animals fed for 27 weeks, effects of diet were found for force, stiffness, and Von. Mises stresses. Effects of ovariectomy were also found for stiffness. In architectural characteristics ovariectomy also affected SMI and connectivity density.

Sponsor: Oklahoma Agriculture Experiment Station

PI: Andrea Arquitt

Navigating the New Medicare Forums

These are informational forums that educate the professionals, seniors, and caregivers on the changes with Medicare. Specifically, the panel of experts from OKDHS-Aging Service, AARP, Pfizer Pharmaceutical, and Oklahoma Foundation for Medical Quality, Inc. speak on the prescription drug card that becomes effective June 2004 until December 2005.

Sponsors: AARP, Eli Lilly and individuals

PI: Marca Davis

Oklahoma Dietetic Service Agreement

This project promotes optimal nutrition and well being for all people by advocating for its members. ODA develops members of the food and nutrition profession through continuing education, scholarships, and involvement in nutrition issues which benefit the profession and the public.

Sponsor: Oklahoma Dietetic Association

PI: Carol Beier

Oklahoma Nutrition Education Program Evaluation Using the Core Food Security Module

Little research has been conducted to determine if nutrition education programs targeting food assistance program participants changes food security status. The objectives of this study are to determine the reliability and validity of the USDA Core Food Security Module (CFSM) in an Oklahoma population of food assistance program participants and to determine food security status before and after ONE program participation as a measure of program effectiveness.

Sponsor: United States Department of Agriculture, Food and Nutrition Service

PIs: Kathy Keim, Debra Greene-Garrard

Soy Isoflavones Dose-Dependently Attenuate the Acute-Phase Response in LPS-

Challenged Mice

This study will determine if soy isoflavones affect inflammation in mice and the potential mechanisms for these effects. The results will be important for the use of isoflavone-containing foods or supplements in conditions with inflammation.

Sponsor: United States Department of Agriculture, National Research Initiative

PI: Elizabeth Droke

Survey and Education of Detection and Health Hazards of Unapproved Antibiotic Residues in Imported Seafoods

It is important to monitor for unapproved antibiotics in imported food products to ensure the safety of food supplies for U.S. consumers due to the heightened threat of bioterrorism.

The purpose of this study is to identify safety methods, survey imported sea foods for unapproved antibiotic residues; train seafood importers and processors in rapid assay methods; and educate food science and pharmaceutical science students, seafood industry personnel, and the general public about these health hazards and the importance of securing the safety of our food supplies.

Sponsor: University of Southern California/United States Department of Agriculture

PI: Cheng-I Wei

Use of Chemoprotection in Product Development to Improve Safety and Production of Peanut Products in Ghana, West Africa

The study centers on aflatoxin, a toxin whose growth on peanuts, corn, maize, sorghum, and other crops is caused by an overabundance of the naturally occurring mold *Aspergillus flavus*. Ingestion of aflatoxin at a high level or frequency can cause aflatoxicosis, a cluster of diseases marked by symptoms such as suppression of the immune system. This project collaborating with scientists in Ghana will aid in reducing the risk of aflatoxicosis from consumption of moldy peanuts.

Sponsor: University of Georgia/United States Agency on International Development

PIs: Margaret Hinds

Kwame Nkrumah University of Science and Technology: William O. Ellis

Vitamin E Dose-Dependently Reverses Bone Loss

While osteoporosis has been extensively studied in women, there is a paucity of such studies in men. The purpose of this study is to examine the dose-dependent effects of vitamin E on reversing bone loss in an osteoporotic male rat model of fracture.

Sponsor: Oklahoma Center for the Advancement of Science and Technology

PI: Cheng-i Wei, Bahram Arjmandi

Zinc Nutrition and Brain Development in Southern Ethiopia

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.

Sponsor: University of Colorado Health Sciences Center/National Institutes of Health

PI: Barbara Stoecker, Tay Kennedy

Human Development and Family Science Department: Laura Hubbs-Tait