

# **College of Human Ecology Graduate Student Research and Creative Inquiry Forum**

Monday, November 9, 2015

Hoffman Lounge

Justin Hall

Kansas State University

***Sponsored by:***

College of Human Ecology  
Dean's Office and College  
of Human Ecology Graduate  
Student Council

## **Table of Contents**

|   |              |
|---|--------------|
| <b>Poster Titles and Presenters</b> ..... | <b>1-3</b>   |
| <b>Poster Abstracts</b> .....             | <b>4-32</b>  |
| <b>Author Index</b> .....                 | <b>33-34</b> |

## Poster Titles and Presenters

- 1 **DYADIC LATENT GROWTH MODEL: INTERRACIAL COUPLES**  
*Zenova Williams; Jared Durtschi; Cameron Brown*
- 2 **A POPULATION-BASED STUDY OF COUPLING AND PHYSICAL ACTIVITY BY SEXUAL ORIENTATION FOR MEN.**  
*Joseph S. Lightner*
- 3 **DOES MODERATE INTENSITY EXERCISE IN THE POSTPRANDIAL PERIOD ATTENUATE THE INFLAMMATORY RESPONSE TO A HIGH-FAT MEAL?**  
*Colby Teeman; Stephanie Kurti; Brooke Cull; Sam Emerson; Mark Haub; Sara Rosenkranz*
- 4 **SOCIAL NETWORKING SITES VS PROFESSIONAL NETWORKING SITES AS PERCEIVED BY STUDENTS**  
*Woo-Hyuk Kim; Kristin Malek*
- 5 **A SENSORY COMPARISON OF PECAN CULTIVARS OF KANSAS IN RAW, ROASTED, AND CANDIED FORMS**  
*Brendan Kelly; Kadri Koppel; Edgar Chambers IV*
- 6 **ACCELERATED SHELF LIFE TESTING OF NOVEL SORGHUM-BASED FORTIFIED BLENDED FOODS**  
*Sirichat Chanadang; Edgar Chambers IV*
- 7 **MOTIVATIONS OF EVERYDAY FOOD CHOICES**  
*Xuan Uyen Phan Thuy; Edgar Chambers IV*
- 8 **FOOD TRACEABILITY IN SCHOOL FOODSERVICE OPERATION**  
*Basem Boutros; Kevin Roberts*
- 9 **CONSUMER ACCEPTANCE OF DRY DOG FOOD VISUAL CHARACTERISTICS IN THE U.S.**  
*David Gomez; Brizio Di Donfrancesco; Kadri Koppel; Delores Chambers; Edgar Chambers IV*
- 10 **EXPLORING DYNAMICS AND ATTACHMENT BEHAVIORS IN SINGLE AND DUAL-TRAUMA COUPLES**  
*Lauren Oseland; Kami Gallus*
- 11 **CROSSFIT AND HEART HEALTH: CROSSFIT PARTICIPATION IMPROVES RESTING SYSTOLIC BLOOD PRESSURE FOR KANSAS ADULTS**  
*Katelyn Gilmore; Taran Carlisle; Katie Heinrich*

- 12 THE SEATED INACTIVITY TRAIL (S.I.T.): HEALTH OUTCOMES ASSOCIATED WITH EIGHT WEEKS OF IMPOSED SEDENTARY BEHAVIOR**  
*Brooke Cull; Richard Rosenkranz; Mark Haub; Sara K. Rosenkranz*
- 13 A NEW PROFIT STREAM FOR GRAIN SORGHUM: SENSORY PROFILES AND CONSUMER ACCEPTANCE OF DRY DOG FOOD**  
*Brizio Di Donfrancesco; Kadri Koppel; Greg Aldrich*
- 14 KANSAS ADOLESCENT HEALTH NEEDS ASSESSMENT**  
*Bryant Miller; Elaine Johannes; Michelle Washburn-Busk*
- 15 CAREGIVER/PARENT UNDERSTANDING-THE-CHILD QUESTIONNAIRE: RELIABILITY MEASURES**  
*Jennifer Schmidt; Debra Burnett; Ann Smit*
- 16 FEMALE FIREFIGHTERS' PERCEPTIONS, ATTITUDES, AND EXPERIENCES WITH INJURY**  
*Brittany Hollerbach; Katie Heinrich; Sara Jahnke*
- 17 TAP TO TOGETHERNESS: COMMUNITY-BASED PARTICIPATORY RESEARCH USING KINESTHETIC LEARNING AMONG FAMILIES AND THEIR YOUNG CHILDREN**  
*Laura Schachtner; Samantha Khatri; Bradford Wiles; Julie Pentz*
- 18 REDUCED SEDENTARY TIME AND ASSOCIATED CHANGES IN DIETARY QUALITY AND CALORIC INTAKE**  
*Kelsey Casey; Sara Rosenkranz; Emily Mailey; Richard Rosenkranz*
- 19 IS THERE A LINK BETWEEN SUGAR-SWEETENED BEVERAGE CONSUMPTION AND POST-EXERCISE AIRWAY NARROWING ACROSS PUBERTY?**  
*Sam. R. Emerson; Sara K. Rosenkranz; Stephanie P. Kurti; Richard R. Rosenkranz; Craig A. Harms*
- 20 DEVELOPMENT OF A COFFEE LEXICON FOR RESEARCH**  
*Karolina Sanchez; Brizio Di Donfrancesco; Edgar Chambers IV*
- 21 UNDERSTANDING MUSEUM VISITORS' SATISFACTION AND REVISIT INTENTIONS THROUGH MOBILE APPS: AN EXTENDED TECHNOLOGY MODEL**  
*Juhyun Kang; Jichul Jang*

- 22 EMPLOYEES' PERFORMANCE OF FOOD SAFETY PRACTICES IN SCHOOL NUTRITION PROGRAMS: ATTITUDES, SUBJECTIVE NORMS , AND PRECEIVED BEHAVIORAL CONTROLS**  
*Michelle Alcorn; Kevin Roberts; Paola Paez; Kevin Sauer; Carol Shanklin*
- 23 DOES MODERATE INTENSITY EXERCISE ATTENUATE THE POST-PRANDIAL LIPEMIC AND AIRWAY INFLAMMATORY RESPONSE TO A HIGH-FAT MEAL?**  
*Stephanie P. Kurti; Sara Rosenkranz; Stephen K. Chapes; Morton Levitt; Brooke J. Cull; Colby S. Teeman; Sam R. Emerson; Craig A. Harms*
- 24 ASSESSING PHYSICAL ACTIVITY, FRUIT AND VEGETABLE INTAKE AND SUGAR-SWEETENED BEVERAGE CONSUMPTION PATTERNS OF COLLEGE STUDENTS**  
*Audrey Opoku-Acheampong; Tandalayo Kidd; Koushik Adhikari; Nancy Muturi*
- 25 ATTACHMENT TRAUMA: A PILOT STUDY MEASURING CHANGES IN NEURAL NETWORKS**  
*Chandra Lasley; Zenova Williams*
- 26 ANALYSES OF THE BUILT ENVIRONMENT AND PERCEPTIONS RELATED TO NUTRITIOUS FOODS FOR ADOLESCENTS IN RURAL LOW-INCOME ETHNIC COMMUNITIES IN KANSAS**  
*Yijing Li; Tandalayo Kidd; Erika Lindshield; Koushik Adhikari; Nancy Muturi; Kendra Kattelman; Susan Zies*
- 27 CHRONIC HEART FAILURE AND NITRATE SUPPLEMENTATION: IMPACT ON SKELETAL MUSCLE VASCULAR CONTROL IN EXERCISING RATS**  
*Trenton D. Colburn; Scott K. Ferguson; Clark T. Holdsworth; Jennifer L. Wright; Karen S. Hageman; Timothy L. Musch; David C. Poole*
- 28 DOES YOUTH SPORT CONTRIBUTE TO MEETING PUBLIC HEALTH PHYSICAL ACTIVITY GUIDELINES?**  
*Chelsey R. Schlechter; Richard R. Rosenkranz; David A. Dzewaltowski*
- 29 IMPACT OF VARYING PHYSICAL ACTIVITY LEVELS ON AIRWAY SENSITIVITY AND BRONCHODILATION IN HEALTHY HUMANS**  
*Joshua Smith; Stephanie Kurti; Ariel Johnson; Sarah Kolmer; Craig Harms*
- 30 APPLYING THE CHECK ALL THAT APPLY METHOD (CATA) WITH U.S. CHILDREN – THE TOOL VERSUS THE TOPIC**  
*Katherine Gallo; Marianne Swaney-Stueve*

## Poster Abstracts

1

### **DYADIC LATENT GROWTH MODEL: INTERRACIAL COUPLES**

**Zenova Williams**, M.S., LMFT; Jared Durtschi, Ph.D, LMFT; Cameron Brown, M.S., LMFT

**ABSTRACT:** Previous research suggests that interracial couples are more likely to separate or divorce than same-race couples (Bischoff, 2005). However, there is little research examining relationship quality across time for interracial couples. Using logistic regression, we found that interracial couples are more likely to end their relationship than same-race couples. Results from our dyadic latent growth curve model showed that overall women's relationship quality trajectories declined over the 8 year period, women in interracial relationships had a significantly lower initial starting point than women in same-race relationships, and these numbers remained lower throughout each time point. Overall, men in both groups had similar initial levels of relationship quality; however, men in interracial relationships had a significantly steeper rate of decline in relationship quality trajectories than men in same-race relationships. Interracial relationships seem to be at a greater risk for relationship dissolution and lower relationship quality.

# A POPULATION-BASED STUDY OF COUPLING AND PHYSICAL ACTIVITY BY SEXUAL ORIENTATION FOR MEN

**Joseph S. Lightner, MPH**

*Department of Kinesiology, College of Human Ecology, Kansas State University*

**INTRODUCTION:** Physical activity guidelines recommend minimum (active) and health-enhancing (highly-active) levels of aerobic and muscle-strengthening activities for health benefits. Research suggests that coupled men engage in more physical activity than single men. However, no population-based studies have been conducted on the relationship between coupling status and physical activity for gay men. This study provides a nationally representative analysis of physical activity and coupling status by sexual orientation. **METHOD:** Logistic regression was conducted using aggregated data from the 2013-2014 National Health Interview Survey. Dependent variables were dichotomous for meeting guidelines or not meeting guidelines. **RESULTS:** Coupled gay men are more likely to meet physical activity recommendations than coupled straight men. Unadjusted odds ratios suggest that coupled gay men are 1.62 (95% CI: 1.05-2.50) times more likely to be active, 1.67 (95% CI: 1.10-2.51) times more likely to be highly-active, 1.89 (95% CI: 1.24-2.89) times more likely to engage in muscle-strengthening activities, and 2.00 (95% CI: 1.28-3.11) times more likely to meet physical activity recommendations than coupled straight men. After accounting for age, race, education, and income, coupled gay men are 1.57 (95% CI: 1.00-2.46) times more likely to engage in muscle-strengthening activities and 1.61 (95% CI: 1.01-2.56) times more likely to meet physical activity recommendations than coupled straight men. There were no statistical differences for single gay and single straight men. **CONCLUSIONS:** More research is need to help understand the underlying mechanisms to explain why coupled gay men engage in more physical activity than their straight counterparts.

## DOES MODERATE INTENSITY EXERCISE IN THE POSTPRANDIAL PERIOD ATTENUATE THE INFLAMMATORY RESPONSE TO A HIGH-FAT MEAL?

Colby S. Teeman<sup>1</sup>; Stephanie P. Kurti<sup>2</sup>; Brooke J. Cull<sup>1</sup>; Sam R. Emerson<sup>1</sup>; Mark Haub<sup>1</sup>; Sara K. Rosenkranz<sup>1</sup>

*Department of Human Nutrition, College of Human Ecology, Kansas State University; <sup>2</sup>Department of Kinesiology, College of Human Ecology, Kansas State University*

**BACKGROUND:** Consuming a high-fat meal (HFM) may lead to postprandial lipemia (PPL) and inflammation. Postprandial exercise has been shown to effectively attenuate PPL. However, little is known about the impact of postprandial exercise on systemic inflammation and whether PPL and inflammation are associated. The purpose of this study was to determine whether moderate intensity exercise performed 60 minutes following a true-to-life HFM would attenuate PPL and inflammation. **METHODS:** Thirty-nine young adults (18-40yrs) with no known metabolic disease were randomized to either a control group (CON) who remained sedentary during the postprandial period or an exercise (EX) group who walked at 60% VO<sub>2</sub>peak. Participants consumed a HFM of 10 kcal/kgbw and blood draws were performed immediately before, 2hrs and 4hrs post-HFM. **RESULTS:** Postprandial TRG increased from baseline to 4hr in the EX and CON groups (69.1 ±48.5 and 82.9±72.9 mg/dL respectively; p<0.001), with no differences between groups (p=0.871). In the EX group, IL-6 changed as a quadratic function (baseline=0.76±0.51pg/ml, 2hrs=0.52±0.37, 4hr=1.0±0.71, p=0.005), but did not change in the CON group. IL-6 was not different from baseline to 4hr between groups. Changes in TRG were associated with changes in IL-10 from 0-2hrs (p=0.007), but were not associated with changes in any other inflammatory marker in the postprandial period (p>0.05). **CONCLUSIONS:** Despite significant increases in PPL, postprandial exercise did not mitigate PPL nor inflammation following a HFM. These results indicate that in populations with low metabolic risk, PPL and inflammation following a HFM may not be directly related.

## **SOCIAL NETWORKING SITES VS PROFESSIONAL NETWORKING SITES AS PERCEIVED BY STUDENTS**

**Woo-Hyuk Kim**; Kristin Malek

*Department of Hospitality Management, College of Human Ecology, Kansas State University*

**ABSTRACT:** If Facebook was a country, it would be the third largest country in the world only behind China and India. The prominence of internet social media cannot be ignored. However, are all social media platforms perceived equally? The purpose of this study is to explore the relationships between perceived benefits and detriments of social media sites versus professional networking sites such as Facebook and LinkedIn respectively. Up to this point, there has been no existing research that has examined these items with both types of platforms in a single study. This research utilized exploratory factor analysis to identify dimensionality of perceived benefits and detriments between social networking sites (Facebook) and professional networking sites (LinkedIn). Then descriptive statistics and MANCOVA methods were utilized. Interestingly, this study found that college students see no perceived benefits in using Facebook, but perceive several detriments. In terms of LinkedIn, the result is the exact opposite. Students see several perceived benefits to using LinkedIn, but no perceived detriments. Moreover, this study also examines how perceived benefits and detriments can affect a users' satisfaction. It was found that a significant relationship exists between perceived benefits of LinkedIn and satisfaction. This research has important implications for improving the quality of users' experiences while achieving an organization's set objective. This research has implications for other industries such as business, human resources, marketing, and education.

## A SENSORY COMPARISON OF PECAN CULTIVARS OF KANSAS IN RAW, ROASTED, AND CANDIED FORMS

Brendan Kelly; Kadri Koppel; Edgar Chambers IV

*Sensory Analysis Center;*

*Department of Human Nutrition, College of Human Ecology, Kansas State University*

**BACKGROUND:** With the large variety of cultivars grown at Kansas State University's pecan research fields, understanding their sensory attributes in terms of food application is of particular interest. This objective of this research was to explore sensory differences among eight different pecan cultivars ('Pawnee', 'Witte', 'Kanza', 'Major', 'Lakota', 'Giles', 'Maramec', 'Chetopa') in raw, roasted, and candied forms. **METHOD:** A descriptive panel of six highly trained panelists evaluated each of the cultivars in raw, roasted, and candied forms in replicate to determine if any significant sensory differences existed between the cultivars. During two days of orientation, panelists familiarized themselves with the products and references. Panelists were given eight samples per session, completing two replicates of each sample in each form after six sessions. **RESULTS/FINDINGS:** Descriptive analysis showed several significant differences between the cultivars. The roasted pecans generally showed higher intensities of 'pecan ID' and 'overall nutty', while the candied pecans showed generally higher intensities of 'nutty-buttery,' 'caramelized,' 'overall sweet,' and 'salt' and lower intensities for 'nutty-woody,' 'brown,' 'musty/earthy,' and 'bitter' attributes when compared to other preparation methods. Chetopa, Giles, and Lakota cultivars had notable outlying attribute intensities. **CONCLUSION:** This data has shed light on attribute intensity differences, identifying each of the cultivars with a unique flavor profile. From this data, pecan growers can avoid cultivating pecans with higher intensities of undesirable attributes, namely bitterness and astringency of Lakota pecans and mustiness/earthiness of Chetopa. This study also shows how candying pecans can mask certain attributes ('pecan ID,' 'nutty-woody,' 'brown,' 'musty/earthy,' and 'bitter').

## **ACCELERATED SHELF LIFE TESTING OF NOVEL SORGHUM-BASED FORTIFIED BLENDED FOODS**

**Sirichat Chanadang**; Edgar Chambers IV

*Department of Human Nutrition, College of Human Ecology, Kansas State University*

**BACKGROUND AND PURPOSE:** Fortified blended foods (FBFs) have been used for more than four decades as food supplements in developing countries. Novel sorghum-based fortified blended foods have been developed for nutritional aid programs. These blends require lower energy to prepare into porridge and provide higher levels of nutrition compared to FBFs currently used in feeding programs. These type of products must maintain their desired characteristics for long period of storage due to uncertainties of shipping, distribution and consumption. This study aimed to estimate the shelf life of 14 novel blends. **METHOD:** Fourteen possible FBFs that varied in processing method and ingredients were stored under accelerated environmental conditions higher than those found in some tropical countries such as Tanzania that provided the equivalent of 24 months of standard tropical temperature and humidity storage. The blends were made into porridge and evaluated by a highly trained descriptive panel for seven time points. Rancid/painty odor and flavor attributes were the key determinants of the shelf life of the products. **RESULTS AND CONCLUSION:** Ten out of fourteen products could have shelf life longer than 24 months with no detection of rancid and painty attributes. Product with antioxidant added before extrusion had the shortest shelf life with less than 15 months. Product contained full fat soy was estimated to have shelf life less than 18 months and products contained sorghum variety 3 were estimated to have shelf life less than 24 months. Processing method and ingredients must be taken into account when developing products that expected to have long shelf life.

## **MOTIVATIONS OF EVERYDAY FOOD CHOICES**

**Xuan Uyen Phan Thuy**; Edgar Chambers IV

*Sensory Analysis Center; Department of Human Nutrition, College of Human Ecology, Kansas State University*

This study aimed to explore and validate the motivations underlying food choice using the Food Choice Map technique. The study included one hundred one-on-one interviews, in which the respondents were asked to build a map of all the foods and beverages they typically eat in a usual week for morning, midday, snack, and evening meals. The respondents also provided the reasons and the eating context for each of the choice on their map. The individual food and beverage items were then categorized into the corresponding food groups. The reasons were classified into fifteen motivation constructs, i.e. liking, habits, need and hunger, convenience, health, pleasure, traditional eating, sociability, price, weight control, affect regulation, social norms, social image, choice limitation, and variety seeking. Correspondence Analysis was used to identify the motivational drivers of consumption for both eating occasions and food groups. Meal was found to be different from snack both in food motivations and food patterns. Pleasure was the driving factor for snack but not that important for meal. Different food groups were also chosen with different motivations. Grain, pasta and meats were linked to convenience, variety seeking, traditional eating, and price while nuts, seeds and legumes were associated with need and hunger, health, and weight control. The findings of the study could be used as inputs when dietary changes are desired, whether those changes are related to new or revised products being promoted by industry or are dietary changes that result from government or social policy issues.

# FOOD TRACEABILITY IN SCHOOL FOOD SERVICE OPERATIONS

**Basem Boutros;** Kevin Roberts

*Department of Hospitality Management, College of Human Ecology, Kansas State University*

**Introduction** Food traceability is new in the foodservice context, yet its application is promising in terms of promoting food safety, quality, and recall.

There is a paucity of research related to food traceability systems and their potential applications in the foodservice context. Therefore, the purpose of this study is to explore food traceability systems in the school foodservice setting. Specific objectives are to:

1. Identify the status of food traceability systems in schools.
2. Identify the perceived benefits of implementing a traceability system in a school foodservice operation.
3. Determine challenges to implementing a traceability system in a school foodservice operation.

**Methods** The data will be collected using a self-administered questionnaire that was adopted and developed from previous studies (Mai, Bogason, Arason, Árnason, & Matthíasson, 2010; Miao, 2010; Zhang et al., 2010). The final version of the questionnaire will be used to collect data using Qualtrics®, an online survey platform of a random sample of 2,000 school foodservice directors in the United States to produce quantitative data for analysis. The data collected will be analyzed using the procedures of the Statistical Package for the Social Sciences (SPSS®), version 22. Descriptive statistics (mean & standard deviation), T-test, and frequencies will be computed.

**Results/Discussion/Implication** Results will have a practical implication for foodservice directors in schools as well as decision makers. Previous studies indicated that the interest in traceability emerged as a result of recent food safety incidents including bioterrorism. Therefore, it is important to explore the completeness of traceability systems in schools and the benefits of and challenges to their application.

## CONSUMER ACCEPTANCE OF DRY DOG FOOD VISUAL CHARACTERISTICS IN THE U.S.

David Gomez; Brizio Di Donfrancesco; Kadri Koppel; Delores Chambers; Edgar Chambers IV  
*Department of Human Nutrition, College of Human Ecology, Kansas State University*

**BACKGROUND AND PURPOSE:** In the pet food industry, the pet owner's product perception is of great importance, as the owner purchases and offers the product to their pet(s). The interaction that pet owners have with pet food is usually through the senses of olfaction and vision. Previous research has shown that the appearance is more important than the aroma in driving the consumers' liking of dry dog food products. Further study is needed to understand what kind of visual characteristics are liked most by consumers. The objective of this study was to determine differences in consumers' acceptance of the appearance of dry dog food products and understand which visual characteristics were most liked. **MATERIALS AND METHODS:** One hundred and twenty-two dog owners evaluated the appearance of thirty samples of kibbles from commercially available dry dog foods with varying visual characteristics, including color, size, shape and variety of kibbles. Consumers rated the overall liking, size liking, shape liking and color liking of the samples using a 9-point hedonic scale of liking. Analysis of Variance (ANOVA) was used to determine any significant differences among the liking of the samples. **RESULTS AND CONCLUSIONS:** Significant differences were found between the thirty samples in overall liking, size liking, shape liking and color liking by the consumers. Dog owners showed the highest liking for single-kibble products, medium sizes, symmetrical shapes, and medium-brown colors. In contrast, consumers showed a low degree of liking for large and small sizes, flat and elongated shapes, and green and red colors.

## **EXPLORING DYNAMICS AND ATTACHMENT BEHAVIORS IN SINGLE AND DUAL-TRAUMA COUPLES**

**Lauren M. Oseland<sup>1</sup>; Kami I. Gallus<sup>2</sup>**

*<sup>1</sup>Department of Family Studies & Human Services, College of Human Ecology, Kansas State University;<sup>2</sup>Department of Human Development and Family Studies, Oklahoma State University*

The recent expansion of research in traumatic stress and associated intra- and interpersonal effects has led to an evolution in the conceptualization and treatment of trauma. While much has been done to explore relational dynamics in couples where one partner is the identified trauma survivor (STC), there are few empirical evaluations of dyads where both partners have experienced traumatic events (DTC). Using a sample of 35 couples, this study examined how relational dynamics are affected by trauma when one versus both partners are survivors. Four actor-partner interdependence models were developed. Results revealed that the more severe the husband's PTSD symptoms in DTC, the lower relationship satisfaction and fewer secure attachment bonds he reported. Further, the more traumas experienced by wives, the lower husbands' relationship satisfaction in STC. Within DTCs, wives' number of traumas related to more attachment in males. Finally, greater PTSD symptoms in DTC males related to more relational distress in females. There may be unique, gender-specific variables that influence trauma's impact on couple dyads and attachment. Findings from the present study invite a more dynamic conceptualization of the recursive relationship between trauma, interpersonal relationships, and broader contextual factors that mediate the expression and duration of traumatic stress

## **CROSSFIT AND HEART HEALTH: CROSSFIT PARTICIPATION IMPROVES RESTING SYSTOLIC BLOOD PRESSURE FOR KANSAS ADULTS**

**Katelyn Gilmore**, B.S.; Taran B. Carlisle, B.S.; Katie M. Heinrich, Ph.D  
*Department of Kinesiology, College of Human Ecology, Kansas State University*

**INTRODUCTION:** Regular physical activity is recommended for overall cardiovascular health. To decrease blood pressure (BP), 40 minutes of moderate-to-vigorous activity for 3-4 days per week is recommended; which can be facilitated by participation in CrossFit. CrossFit is a form of high intensity functional training that can be adapted to each individual according to age and ability level, and has rapidly increased to >50 Kansas affiliates since 2005. The purpose of this study was to see if regular CrossFit participation would improve heart health. **METHOD:** Participants included 20 individuals (50% male, ages 18-66) who participated in a 12-month program evaluation study through K-State CrossFit. Health assessments were conducted at baseline, 2-, 6-, and 12-months and included measurements of resting blood pressure and resting heart rate after 5-minutes of rest. SPSS 20 was used to analyze changes in resting heart rate and BP over time with repeated measures ANOVA. **RESULTS:** Mean values for systolic BP decreased from 123.8±14.6 at baseline, to 119.4±15.5-16.2 at 2- and 6-months, to 115.9±17.4 at 12 months. These differences were statistically significant,  $f(3,1)=4.585$ ,  $p=.006$ . Differences in diastolic BP were not significant. Mean values for resting heart rate showed change between 2 months (61.7±8.2) and 12 months (65.8±9.3), although this was not significant ( $p=.13$ ). **CONCLUSION:** Results indicate that regular CrossFit participation can significantly decrease resting systolic blood pressure. CrossFit participation may benefit heart health for Kansas adults up to age 66. Future studies should examine effects of CrossFit participation on additional indicators of heart health such as blood cholesterol.

## **THE SEATED INACTIVITY TRIAL (S.I.T): HEALTH OUTCOMES ASSOCIATED WITH EIGHT WEEKS OF IMPOSED SEDENTARY BEHAVIOR**

**Brooke Cull**; Richard Rosenkranz; Mark Haub; Sara Rosenkranz  
*Department of Human Nutrition, College of Human Ecology, Kansas State University*

Sedentary time is an independent risk factor for chronic disease and all-cause mortality. The negative effects of extreme sedentary behavior have been examined (e.g. bed rest); however, more true-to-life trials are necessary. **PURPOSE:** The objective of this study was to determine whether imposing sedentary time would alter cardiometabolic risk in physically active adults. **METHODS:** Sixteen healthy adults ( $21.6 \pm 1.4$  years, 10 males) who met physical activity guidelines (>150 minutes moderate-to-vigorous physical activity/week) were randomized into the sitting (SIT) group or no-intervention control (CON) group. SIT participants attended monitored sedentary sessions for eight weeks (10hrs/week). Laboratory assessments, including blood pressure, body composition scan, and fasting blood samples occurred at baseline, week four, and week eight. **RESULTS:** SIT and CON were not different at baseline for cardiometabolic risk factors ( $p > 0.05$ ). Systolic blood pressure increased in SIT, but not CON, from baseline to week four (SIT:  $+10.1 \pm 7.2$  mmHg; CON:  $-7.3 \pm 9.6$  mmHg;  $p = 0.001$ ), and remained significantly elevated at week eight. At week eight, there was a significant increase in total cholesterol for SIT ( $+11.1 \pm 12.5$  mg/dL), but not CON ( $+1.1 \pm 22.2$  mg/dL), with no between-group differences. There were no changes in fasting glucose or body composition. Physical activity did not change, but SIT participants decreased caloric intake from baseline to week eight ( $p < 0.05$ ). **CONCLUSION:** Following eight weeks of imposed sedentary time, physically active adults increased systolic blood pressure and total cholesterol. Despite group decreases in caloric intake over the eight-week study, potentially negative cardiometabolic changes were observed.

## A NEW PROFIT STREAM FOR GRAIN SORGHUM: SENSORY PROFILES AND CONSUMER ACCEPTANCE OF DRY DOG FOOD

Brizio Di Donfrancesco<sup>1</sup>; Kadri Koppel<sup>1</sup>, Greg Aldrich<sup>2</sup>

<sup>1</sup>*The Sensory Analysis Center, Department of Human Nutrition, College of Human Ecology, Kansas State University*

<sup>2</sup>*Grain Science and Industry Department, Kansas State University*

Sedentary time is an independent risk factor for chronic disease and all-cause mortality. The negative effects of extreme sedentary behavior have been examined (e.g. bed rest); however, more true-to-life trials are necessary. **PURPOSE:** The objective of this study was to determine whether imposing sedentary time would alter cardiometabolic risk in physically active adults. **METHODS:** Sixteen healthy adults ( $21.6 \pm 1.4$  years, 10 males) who met physical activity guidelines ( $>150$  minutes moderate-to-vigorous physical activity/week) were randomized into the sitting (SIT) group or no-intervention control (CON) group. SIT participants attended monitored sedentary sessions for eight weeks (10hrs/week). Laboratory assessments, including blood pressure, body composition scan, and fasting blood samples occurred at baseline, week four, and week eight. **RESULTS:** SIT and CON were not different at baseline for cardiometabolic risk factors ( $p>0.05$ ). Systolic blood pressure increased in SIT, but not CON, from baseline to week four (SIT:  $+10.1 \pm 7.2$  mmHg; CON:  $-7.3 \pm 9.6$  mmHg;  $p=0.001$ ), and remained significantly elevated at week eight. At week eight, there was a significant increase in total cholesterol for SIT ( $+11.1 \pm 12.5$  mg/dL), but not CON ( $+1.1 \pm 22.2$  mg/dL), with no between-group differences. There were no changes in fasting glucose or body composition. Physical activity did not change, but SIT participants decreased caloric intake from baseline to week eight ( $p<0.05$ ). **CONCLUSION:** Following eight weeks of imposed sedentary time, physically active adults increased systolic blood pressure and total cholesterol. Despite group decreases in caloric intake over the eight-week study, potentially negative cardiometabolic changes were observed.

## KANSAS ADOLESCENT HEALTH NEEDS ASSESSMENT

**Bryant Miller;** Elaine Johannes; Michelle Washburn-Busk

*School of Family Studies and Human Services, College of Human Ecology, Kansas State University*

**BACKGROUND AND PURPOSE:** The inclusion of adolescent health objectives in the national Healthy People 2020 plan is an acknowledgement that health issues impacting teens are unique from those affecting children or adults. Consequently, a three-pronged assessment process was initiated to identify key health issues among Kansas adolescents. Information obtained in the assessment informed the development of Kansas Department of Health and Environment's federal Title V funding application and recommendations for a Kansas adolescent health plan.

**METHOD:** The assessment process consisted of: a) review of existing population health data, b) online community input survey (854 responses), c) community focus groups (324 youth of 401 participants), and d) interviews with Kansas health leaders.

**RESULTS AND FINDINGS:** The top health issues affecting adolescents identified after triangulation of data were mental health (including depression and self-injury), substance abuse, sexuality and reproductive health, nutrition and physical activity, and injury prevention. Top health-related barriers and challenges adolescents confront include lack of information and access to services, cost, lack of parental support/skills and awareness, embarrassment/shame, and lack of trusted adult mentors for youth to confide in.

**CONCLUSION:** The results of the Kansas adolescent health assessment show that issues facing adolescents are unique and require systemic approaches that include prevention, early intervention, and treatment strategies delivered at community, school and family levels. Future research into the health experiences and health literacy of adolescents will strengthen adolescents' "voice" to inform health interventions, health delivery and health promotion to improve the health of all adolescents in Kansas.

## **THE CAREGIVER/PARENT UNDERSTANDING-THE-CHILD QUESTIONNAIRE: RELIABILITY MEASURES**

**Jennifer Schmidt, B.S.;** Debra Burnett, Ph.D.; Ann Smit, Ph.D.

*Communication Sciences and Disorders Department, College of Human Ecology, Kansas State University*

The Caregiver/Parent Understanding-the-Child Questionnaire (CPUCQ) shows promise as a comprehensibility measure. In this questionnaire the adult indicates mode of communication the child uses (e.g., gesture plus speech) and speech understandability in 31 communicative situations. Psychometric properties were measured for reliability of the tool and results will be discussed.

## FEMALE FIREFIGHTERS' PERCEPTIONS, ATTITUDES, AND EXPERIENCES WITH INJURY

Brittany Hollerbach<sup>1</sup>, B.S.; Katie Heinrich<sup>1</sup>, Ph.D.; Sara Jahnke<sup>2</sup>, Ph.D.

<sup>1</sup>*Department of Kinesiology, College of Human Ecology, Kansas State University*

<sup>2</sup>*Center for Fire, Rescue & EMS Research, National Development and Research Institutes*

Sedentary time is an independent risk factor for chronic disease and all-cause mortality. The negative effects of extreme sedentary behavior have been examined (e.g. bed rest); however, more true-to-life trials are necessary. **PURPOSE:** The objective of this study was to determine whether imposing sedentary time would alter cardiometabolic risk in physically active adults. **METHODS:** Sixteen healthy adults ( $21.6 \pm 1.4$  years, 10 males) who met physical activity guidelines ( $>150$  minutes moderate-to-vigorous physical activity/week) were randomized into the sitting (SIT) group or no-intervention control (CON) group. SIT participants attended monitored sedentary sessions for eight weeks (10hrs/week). Laboratory assessments, including blood pressure, body composition scan, and fasting blood samples occurred at baseline, week four, and week eight. **RESULTS:** SIT and CON were not different at baseline for cardiometabolic risk factors ( $p>0.05$ ). Systolic blood pressure increased in SIT, but not CON, from baseline to week four (SIT:  $+10.1 \pm 7.2$  mmHg; CON:  $-7.3 \pm 9.6$  mmHg;  $p=0.001$ ), and remained significantly elevated at week eight. At week eight, there was a significant increase in total cholesterol for SIT ( $+11.1 \pm 12.5$  mg/dL), but not CON ( $+1.1 \pm 22.2$  mg/dL), with no between-group differences. There were no changes in fasting glucose or body composition. Physical activity did not change, but SIT participants decreased caloric intake from baseline to week eight ( $p<0.05$ ). **CONCLUSION:** Following eight weeks of imposed sedentary time, physically active adults increased systolic blood pressure and total cholesterol. Despite group decreases in caloric intake over the eight-week study, potentially negative cardiometabolic changes were observed.

# **TAP TO TOGETHERNESS: COMMUNITY-BASED PARTICIPATORY RESEARCH USING KINESTHETIC LEARNING AMONG FAMILIES AND THEIR YOUNG CHILDREN**

**Laura Schachtner<sup>1</sup>**; Samantha Khatri<sup>2</sup>; Bradford B. Wiles<sup>1</sup>; Julie Pentz<sup>3</sup>

<sup>1</sup>*Department of Family Studies & Human Services, College of Human Ecology, Kansas State University;*

<sup>2</sup>*Graduate School of Dietetics, College of Human Ecology, Kansas State University*

<sup>3</sup>*School of Music, Theatre, and Dance, College of Arts and Sciences, Kansas State University*

Tap To Togetherness, or T<sup>3</sup>, is a multidisciplinary, engaged, community-based participatory research project aimed at building resilience in vulnerable families through a theoretical and research-based approach to positive family development with tap dance instruction as the vector for family engagement. These sessions encourage family interaction; challenge body movement coordination; facilitate adult and child listening skills, positive parenting techniques, and social-emotional development; and encourage healthy family relationships. Qualitative analyses of the video recordings of the sessions were conducted.

## REDUCED SEDENTARY TIME AND ASSOCIATED CHANGES IN DIETARY QUALITY AND CALORIC INTAKE

Kelsey Casey<sup>1</sup>; Sara Rosenkranz<sup>1</sup>; Emily Mailey<sup>2</sup>; Richard Rosenkranz<sup>1</sup>

<sup>1</sup> *Department of Human Nutrition, College of Human Ecology, Kansas State University*

<sup>2</sup> *Department of Kinesiology, College of Human Ecology, Kansas State University*

Evidence from physical activity interventions suggests that women, in particular, may overcompensate for exercise energy expenditure with added caloric intake, reducing efficacy for weight loss. Sedentary behavior and poor diet quality are risk factors for cardiometabolic disease. It is unknown whether physically inactive women alter caloric intake or dietary quality when they reduce sedentary behavior. The aim of this study was to determine whether dietary patterns would change following an intervention intended to reduce sedentary behavior in inactive women. Inactive women working full-time sedentary jobs (n=29) were randomized into one of two 8-week interventions occurring during the work week [short breaks (1-2 min every half hour, n=12) or long breaks (15 min twice daily, n=17)]. Assessments occurred at baseline, and weeks 4 and 8. Dietary information was collected through 3-day food records. Dietary quality was assessed using the Alternative Healthy Eating Index (AHEI). Analyses of all participants revealed no change in AHEI scores over time (baseline: 54.0±15.1, week 4: 51.5±11.3, week 8: 47.3±12.2, p>0.05). Caloric consumption was not significantly different at week 4 (p>0.05), but was decreased at week 8 (baseline: 1809.7±488.0, week 4: 1682.3±622.8, week 8: 1625.4±554.2 kcals/day, p=0.04). Following an 8-week sedentary intervention in the workplace, inactive women did not alter their dietary quality, but decreased caloric intake. Future research should explore sedentary interventions compared to physical activity interventions in women, as reductions in sedentary time (without caloric compensation or negative effects on dietary quality) may be effective for improving health outcomes.

# IS THERE A LINK BETWEEN SUGAR-SWEETENED BEVERAGE CONSUMPTION AND POST-EXERCISE AIRWAY NARROWING ACROSS PUBERTY?

Sam R. Emerson<sup>1</sup>; Sara K. Rosenkranz<sup>1</sup>; Stephanie P. Kurti<sup>2</sup>;  
Richard R. Rosenkranz<sup>1</sup>; Craig A. Harms<sup>2</sup>

<sup>1</sup>*Department of Human Nutrition, College of Human Ecology, Kansas State University*

<sup>2</sup>*Department of Kinesiology, College of Human Ecology, Kansas State University*

**BACKGROUND:** The prevalence of asthma is rising, presenting serious public health challenges. Recent data suggest that sugar-sweetened beverage (SSB) consumption plays a role in asthma etiology. The purpose of this study was to determine whether SSB consumption was linked to post-exercise airway narrowing (predictor of asthma development) across puberty. **METHODS:** We recruited 10 boys and 10 girls from an original cohort of 40 participants tested in our laboratory approximately five years prior. Participants were age  $9.7 \pm 0.9$  years at baseline and  $14.7 \pm 0.9$  years at follow-up. Participants completed pulmonary function tests, physical activity and dietary habit questionnaires, and an exercise test to exhaustion. **RESULTS:** Pre-puberty, boys consumed  $6.8 \pm 4.8$  servings/week [serv/wk] and girls consumed  $6.9 \pm 3.7$  serv/wk, while post-puberty boys consumed  $11.5 \pm 5.3$  serv/wk and girls consumed  $7.7 \pm 4.3$  serv/wk. Using Pearson correlation, SSB consumption was not significantly related to post-exercise airway narrowing at pre-puberty ( $r=-0.35$ ;  $p=0.130$ ). In linear regression analyses, SSB consumption was significantly related to post-exercise airway narrowing post-puberty before (Standardized  $\beta=-0.60$ ;  $p=0.005$ ) but not after (Standardized  $\beta=-0.33$ ;  $p=0.211$ ) adjustment for confounders. Change in SSB consumption from pre- to post-puberty was significantly associated with post-exercise airway narrowing post-puberty ( $r=-0.61$ ;  $p=0.010$ ) and change in post-exercise airway narrowing from pre- to post-puberty ( $r=-0.45$ ;  $p=0.048$ ) when assessed via Pearson correlations. **CONCLUSION:** These findings suggest a possible link between SSB consumption and asthma development during maturation. Reduced SSB intake may be a possible public health avenue for blunting rising asthma prevalence.

## DEVELOPMENT OF A COFFEE LEXICON FOR RESEARCH

**Karolina Sanchez<sup>1</sup>**; Brizio Di Donfrancesco<sup>1</sup>; Edgar Chambers IV<sup>1</sup>

<sup>1</sup>*Sensory Analysis Center, Department of Human Nutrition, College of Human Ecology, Kansas State University*

The objective of this study was to develop a sensory lexicon for coffee. A total of more than 100 different coffee samples from 14 countries around the world were used to create this lexicon. The first list of terms consisted of 74 attributes that were developed from the review of 13 samples from the region of Pitalito, Colombia. A second development incorporated an existing commercial lexicon and examined an additional 92 coffee samples from different parts of the world. Validation sessions were also performed with 20 coffee samples from the area of San Adolfo, Colombia. A highly trained panel from the Sensory Analysis Center (SAC) at Kansas State University (Manhattan, Kansas) assessed the coffee samples using descriptive analysis using a 15-point intensity scale. The sensory panel identified a total of 110 attributes and their references (83 for aroma, 69 for flavor, 5 for amplitude and 3 for texture). Principal Component Analysis (PCA) was used to map the scores obtained during the validation phase of the lexicon terminology, for this stage the coffee lexicon allowed the panelists to describe specific characteristics that were present in the coffee samples such as sweet, nutty and fruity notes, as well as the differentiation of notes such as burnt, smoky, astringent, acrid and bitter. The developed attributes and references were successfully used by the trained panel to describe a wide range of the coffee samples.

# **UNDERSTANDING MUSEUM VISITORS' SATISFACTION AND REVISIT INTENTIONS THROUGH MOBILE APPS: AN EXTENDED TECHNOLOGY MODEL**

**Juhyun Kang; Jichul Jang**

*Department of Hospitality Management, College of Human Ecology, Kansas State University*

Although museums have started introducing mobile apps to provide visitors with detailed imagery and text description of individual artworks, little is known about users' attitudes and perceptions toward using museums' mobile apps. Therefore, drawing from an extended technology acceptance model (TAM), a widely used theoretical model to explain users' behavioral intention to access a technology, we examine the relationship between antecedents (i.e., perceived easiness, perceived usefulness, and perceived enjoyment) and visitors' perceived value towards using museums' mobile apps. This may lead to overall satisfaction and revisit intention in the museum context. Using an intercept survey, the data in this study were drawn from questionnaires distributed to visitors at the National Korea Museum in South Korea. A total of 204 museum visitors were asked to fill out the questionnaire regarding perceived usefulness, easiness, enjoyment, and perceived value of the museum's mobile app, and their overall satisfaction and revisit intention. The results of this study show that two factors, namely perceived usefulness and perceived enjoyment of mobile apps, were positively related to perceived value, which can, in turn, lead to increased rates of visitor satisfaction and revisit intention. From a theoretical perspective, our study contributes to hospitality literature by exploring perceived enjoyment as an important additional factor for explaining the use of mobile apps in the museum context. From a practical perspective, this study provides practical information on developing and enhancing mobile apps in terms of museum management.

# EMPLOYEES' PERFORMANCE OF FOOD SAFETY PRACTICES IN SCHOOL NUTRITION PROGRAMS: ATTITUDES, SUBJECTIVE NORMS, AND PERCEIVED BEHAVIORAL CONTROLS

Michelle Alcorn<sup>1</sup>; Kevin Roberts<sup>1</sup>; Paola Paez<sup>2</sup>; Kevin Sauer<sup>3</sup>; Carol Shanklin<sup>4</sup>

<sup>1</sup>Department of Hospitality Management, College of Human Ecology, Kansas State University

<sup>2</sup>Center of Excellence for Food Safety Research in Child Nutrition Programs, Department of Human Nutrition, College of Human Ecology, Kansas State University

<sup>3</sup>Department of Human Nutrition, College of Human Ecology, Kansas State University

<sup>4</sup>Graduate School of Dietetics, College of Human Ecology, Kansas State University

**Purpose:** Determine employees' attitude, subjective norm, and perceived behavioral control related to handling of food and work surfaces, hand washing, and thermometer use.



norms, and controls that may be associated with behavior change related to following safe food practices in schools.

## DOES MODERATE INTENSITY EXERCISE ATTENUATE THE POST-PRANDIAL LIPEMIC AND AIRWAY INFLAMMATORY RESPONSE TO A HIGH-FAT MEAL?

Stephanie P. Kurti<sup>1</sup>; Sara K. Rosenkranz<sup>2</sup>; Stephen K. Chapes<sup>3</sup>; Morton Levitt<sup>4</sup>; Brooke J. Cull<sup>2</sup>; Colby S. Teeman<sup>2</sup>; Sam R. Emerson<sup>2</sup>; Craig A. Harms<sup>1</sup>

<sup>1</sup>*Department of Kinesiology, College of Human Ecology, Kansas State University*

<sup>2</sup>*Department of Human Nutrition, College of Human Ecology, Kansas State University*

<sup>3</sup>*Division of Biology, Kansas State University*

<sup>4</sup>*College of Medicine, Department of Biomedical Science, Florida Atlantic University*

**Introduction:** Recent reports suggest that a single high-fat meal (HFM) leads to increased airway and systemic inflammatory markers and triglycerides. However, an acute bout of exercise in the post-prandial period has anti-inflammatory and lipid lowering effects. The purpose of this research was to investigate whether an acute bout of moderate intensity exercise in the post-prandial period attenuates the triglyceride and airway inflammatory response to a high-fat meal (HFM) compared to remaining inactive post-HFM. **Methods:** Seventeen (11M/6F) physically active ( $\geq 150$  min/week of moderate-vigorous physical activity (MVPA)) college-aged subjects were randomly assigned to an exercise (EX; 60%  $VO_{2peak}$  45 minutes post-HFM) or sedentary (CON) condition after a HFM (10 kcal/kg, 63% fat). Blood analytes (lipids and glucose) and airway inflammation via exhaled nitric oxide (eNO), were measured at baseline, 2 and 4 hours post-HFM. Airway inflammation, via induced sputum and a differential cell count, was assessed at baseline and 4 hours post-HFM. **Results:** Triglycerides increased significantly in the CON 2 hr. (~54%,  $p=0.018$ ) and 4 hr. (~107%;  $p=0.018$ ) post-HFM and in the EX condition 2 hr. (~66%;  $p=0.003$ ) and 4 hr. (~119%;  $p=0.004$ ) post-HFM, but the increase did not differ between EX and CON. Percentage of neutrophils significantly increased 4 hours post-HFM (~17%), but the increase did not differ between EX and CON. Exhaled nitric oxide changed non-linearly from baseline to 2 and 4 hours post-HFM ( $p<0.05$ ,  $\eta^2=0.36$ ). **Conclusion:** Our findings suggest that in active individuals, an acute bout of moderate intensity exercise does not attenuate the triglyceride or airway inflammatory response to a high-fat meal.

## ASSESSING PHYSICAL ACTIVITY, FRUIT AND VEGETABLE INTAKE AND SUGAR-SWEETENED BEVERAGE CONSUMPTION PATTERNS OF COLLEGE STUDENTS

**Audrey Opoku-Acheampong<sup>1</sup>**; Tandalayo Kidd<sup>1</sup>; Koushik Adhikari<sup>3</sup>; Nancy Muturi<sup>2</sup>

<sup>1</sup>*Department of Human Nutrition, College of Human Ecology, Kansas State University*

<sup>2</sup>*AQ Miller School of Journalism and Mass Communication, Kansas State University*

<sup>3</sup>*Department of Food Science & Technology, University of Georgia*

The American Heart Association (AHA) has identified obesity as a primary risk factor for coronary heart disease (CHD). The factors identified as causes of current obesity trends are increased amount of fat and energy content of foods and decreased physical activity levels. The period between adolescence and adulthood is an important stage for health promotion because individuals at this stage are likely to gain weight, creating the need for more studies to identify behavioral patterns of college students to help promote long-term healthy lifestyles. The current study used the transtheoretical model to assess fruit and vegetable consumption and physical activity habits of college students and their relationship to sugar-sweetened beverage (SSB) consumption habits. A total of 156 college students from a Midwestern University were randomized to a control or intervention group. There was a significant association between self-reported fruit and vegetable (F/V) intake and SOC for F/V intake at months 3 and 15 (3 mo.:  $F(2,118) = 16.60, p < 0.0001$ ; 15 mo.:  $F(2,95) = 4.444, p = 0.014$ ). There was a significant association between self-reported physical activity (PA) scores and SOC for PA at months 0 and 15 (0 mo.:  $F(2,144) = 22.209, p < 0.0001$ ; 15 mo.:  $F(2,91) = 5.346, p = 0.006$ ). Study findings confirm that fruit and vegetable intake of college students is below public health recommendations even though they consume high amount of SSB. Health communication campaigns to boost students' self-efficacy for fruit and vegetable intake and physical activity habits will help promote these behaviors in this population.

## **ATTACHMENT TRAUMA: A PILOT STUDY MEASURING CHANGES IN NEURAL NETWORKS**

**Chandra Lasley<sup>1</sup>**; Zenova Williams<sup>1</sup>

<sup>1</sup>*Marriage and Family Therapy, Department of Family Studies and Human Services,  
College of Human Ecology, Kansas State University*

This study examined changes in quantitative electroencephalogram (QEEG) to determine effectiveness of treating depression stemming from attachment trauma using Eye Movement Desensitization and Reprocessing (EMDR) therapy (Shapiro, 1993). EMDR therapy treats attachment trauma through improving adaptive information processing, resource tapping, and desensitization by stimulating the memory networks to allow reprocessing to occur. Reduced QEEG cordance (Leuchter et al., 1994) indicates positive response to psychotropic treatment (e.g., Cook et al., 2005). Participants (P1: 19 year old woman and P2: 63 year old man) assessed positively for major depressive and generalized anxiety, and negatively for PTSD, mania, alcohol and drug abuse, panic attacks and psychosis. Therapy targeted current negative self-concepts (I am not capable/am irresponsible/am helpless/powerless) to which participants attributed their depression and subsequent interpersonal stresses. Therapy (10 sessions) followed a standard protocol that established resources (using imagery), desensitized negative self-concepts, and installed more adaptive self-concepts. Treatment response (EEG at Fp1, Fp2, Fz, F4, F8 and self-rated Personal Health Questionnaire (Spitzer et al., 1999)) were examined at pre-treatment(T1), post-treatment(T2) and one-month follow-up(T3). Changes in depression scores were clinically significant and reliable (Jacobson & Truax, 1991). P1 scores were 16(T1), 3(T2) and 2(T3) and P2 scores were 10(T1), 3(T2) and 3(T3). QEEG cordance reduced from T1 to T2 across all frequency bands (delta, theta, alpha, beta1 and beta2) at the F4 site, thus supporting previous studies (e.g. Cook, 2005). This study demonstrates the use of QEEG to measure treatment response. Examining changes in QEEG cordance may help validate therapy.

# ANALYSES OF THE BUILT ENVIRONMENT AND PERCEPTIONS RELATED TO NUTRITIOUS FOODS FOR ADOLESCENTS IN RURAL LOW-INCOME ETHNIC COMMUNITIES IN KANSAS

Yijing Li<sup>1</sup>; Tandalayo Kidd<sup>1</sup>; Erika Lindshield<sup>1</sup>; Koushik Adhikari<sup>1</sup>; Nancy Muturi<sup>2</sup>; Kendra Kattelmann<sup>3</sup>; Susan Zies<sup>4</sup>

<sup>1</sup>*Department of Human Nutrition, College of Human Ecology, Kansas State University*

<sup>2</sup>*Journalism and Mass Communication, Kansas State University*

<sup>3</sup>*South Dakota State University*

<sup>4</sup>*Ohio State University*

As part of a 5-year multi-state adolescent obesity prevention project, the resources and perceptions of nutritious foods among adolescents were assessed in rural low-income ethnic communities in Kansas. One control and one intervention communities were randomly selected prior to program development. Audits of restaurants ( $n_1 = 9$ ,  $n_2 = 3$ ; respectively for control and intervention communities) and stores ( $n_1 = 7$ ,  $n_2 = 2$ ) were conducted by trained observers using validated Nutrition Environment Measures Survey-Restaurant and -Store to document current neighborhood conditions for nutritious food promotion. Questionnaires regarding eating behaviors and perceptions of healthy eating were distributed to 6<sup>th</sup>-8<sup>th</sup> graders in both communities ( $n_1 = 115$ ,  $n_2 = 142$ ). Nutrition information and healthier options were provided at 11.1% and 33.3% of the restaurants. The availability of fruits and vegetables varied by store types and locations. Hispanics were identified as the major ethnic population in both communities ( $n_1 = 69.6\%$ ,  $n_2 = 60.9\%$ ). Besides fruit consumption, there were no significant between-group differences in vegetables, 100% juice and sugar-sweetened beverages consumption ( $p > .05$ ). 68.3% of the adolescents were fairly sure about eating healthy when hungry. The opportunities to consume nutritious foods in the communities were largely limited. Although fruits and vegetables were available in school and in adolescents' homes, adolescents failed to consume sufficient amounts of them on a daily basis. These findings suggest future interventions should not only engage youth in wellness program development, but also incorporate environmental changes that support healthier behaviors to ensure the effectiveness and sustainability of the program.

# CHRONIC HEART FAILURE AND NITRATE SUPPLEMENTATION: IMPACT ON SKELETAL MUSCLE VASCULAR CONTROL IN EXERCISING RATS

Trenton Colburn<sup>1</sup>; Scott Ferguson<sup>2</sup>; Clark Holdsworth<sup>2</sup>; Jennifer Wright<sup>2</sup>; Karen Hageman<sup>2</sup>;  
Timothy Musch<sup>1,2</sup>; David Poole<sup>1,2</sup>

<sup>1</sup>*Department of Kinesiology, College of Human Ecology, Kansas State University*

<sup>2</sup>*Department of Anatomy & Physiology, Kansas State University*

Chronic heart failure (CHF) results in central and peripheral derangements that ultimately reduce skeletal muscle O<sub>2</sub> delivery and impair exercise tolerance. Dietary nitrate (NO<sub>3</sub><sup>-</sup>) supplementation improves skeletal muscle vascular function and improves tolerance to exercise. We tested the hypothesis that NO<sub>3</sub><sup>-</sup> supplementation elevates exercising skeletal muscle blood flow (BF) and vascular conductance (VC) in CHF rats. Myocardial infarction (MI) were induced (coronary artery ligation) in young-adult male rats. After 21-days of recovery, rats randomly received NO<sub>3</sub><sup>-</sup> rich beetroot juice (CHF+BR, n=10) or a placebo (CHF, n=10). Mean arterial pressure (MAP, carotid artery catheter) and skeletal muscle BF (radiolabeled microspheres) were measured during treadmill exercise (20 m/min, 5% grade). CHF parameters (MI size, CHF: 29 ± 3, CHF+BR: 33 ± 4%, LVEDP, CHF: 18 ± 2, CHF+BR: 18 ± 2 mmHg) and exercising MAP (CHF: 131 ± 3, CHF +BR: 128 ± 4 mmHg) were not different (P<0.05) between groups. Total hindlimb skeletal muscle BF (CHF: 95 ± 5, CHF+BR: 116 ± 9 ml/min/100g) and VC (CHF: 0.75 ± 0.05, CHF+BR: 0.90 ± 0.05) were greater (P<0.05) in BR. Increases in BF and VC (P<0.05) were found preferentially in muscles and muscle parts containing ≥70% type IIB + d/x muscle fibers which increased total skeletal muscle BF ~22% and elevated in total VC 20% during exercise. These results provide strong evidence that dietary NO<sub>3</sub><sup>-</sup> supplementation improves skeletal muscle vascular function during exercise in rats with CHF and suggest that BR may provide a novel therapeutic modality for the treatment of CHF.

# DOES YOUTH SPORT CONTRIBUTE TO MEETING PUBLIC HEALTH PHYSICAL ACTIVITY GUIDELINES

Chelsey Schlechter<sup>1</sup>; Richard Rosenkranz<sup>2</sup>; David Dzewaltowski<sup>1</sup>

<sup>1</sup>*Department of Kinesiology, College of Human Ecology, Kansas State University*

<sup>2</sup>*Department of Human Nutrition, College of Human Ecology, Kansas State University*

**Introduction:** Participation in developmentally appropriate sports provides youth with an opportunity to increase daily moderate-to-vigorous physical activity (MVPA) to meet public health guidelines. A large proportion of youth sport time, however, is spent relatively inactive. Coaches have the potential to positively influence youth MVPA. The purpose of this study is two-fold: (1) examine youth MVPA levels during flag football practice (2) compare youth physical activity levels between trained and untrained coaches. **Methods:** Boys (n=111, 5-11 years old, mean 7.9±1.2 years) from 14 recreation flag football teams wore a GTM1 accelerometer for the duration of two practices. Each team's volunteer head coach reported training experience (e.g. coaching degree, workshops, certifications, city provided online National Youth Sport Coaching Association training). **Results:** Nested mixed models estimated team's practice time spent in sedentary (14%±.01), MPVA (34%±.02), and vigorous (11% ±.01) activity. Practice contributed 19.8 ± 1.25 minutes to daily MVPA. Teams with trained coaches (n=10) were not statistically different in activity levels compared to teams with untrained coaches (n=4). **Conclusion:** At least 30-minutes of the recommended guideline of 60-minutes of MVPA per day should be completed in out-of-school time. Although youth sport contributed (20 minutes), two-thirds of practice was spent in sedentary or light activity, leaving an opportunity for coaches to increase time spent in MVPA. Current coach training showed no difference for activity levels. Further research is needed to identify volunteer coach training programs that provide coaches with skills necessary to increase the percentage of time in MVPA at practice.

## IMPACT OF VARYING PHYSICAL ACTIVITY LEVELS ON AIRWAY SENSITIVITY AND BRONCHODILATION IN HEALTHY HUMANS

**Joshua Smith;** Stephanie Kurti; Ariel Johnson; Sarah Kolmer; Craig Harms  
*Department of Kinesiology, College of Human Ecology, Kansas State University*

**PURPOSE:** The purpose of this study was to determine if the amount of physical activity influences airway sensitivity and bronchodilation in healthy subjects across a range of physical activity levels. **METHODS:** 30 healthy subjects ( $21.9 \pm 2.6$  yrs; 13M/17W) with normal pulmonary function reported to the laboratory on two separate occasions where they were randomized to breathe either (1) hypertonic saline (HS) (nebulized hypertonic saline (25%) for 20 min), or (2) HS followed by 5 deep inspirations (DIs), which has been reported to bronchodilate the airways. Pulmonary function tests (PFTs) were performed prior to both conditions and following the HS breathing or 5 DIs. Moderate-to-vigorous physical activity (MVPA) level was measured via accelerometer worn for 7 days. **RESULTS:** Following the HS breathing, FEV1 and FVC significantly decreased from baseline  $-11.8 \pm 8.4\%$  and  $-9.3 \pm 6.7\%$ , respectively. A two-segment linear model determined significant relationships between MVPA and percent change in FEV1 ( $r=0.50$ ) and FVC ( $r=0.55$ ). MVPA above  $\sim 497$  and  $\sim 500$  min/week for FEV1 and FVC, respectively resulted in minor additional improvements ( $p > 0.05$ ) in PFTs following the HS breathing. Following the DIs, FEV1 and FVC decreased ( $p < 0.05$ )  $-7.3 \pm 8.6\%$  and  $-5.7 \pm 5.7\%$  from baseline, but were not related ( $p > 0.05$ ) to MVPA. **CONCLUSION:** These data demonstrate that higher MVPA levels attenuated airway sensitivity, but not bronchodilation in healthy subjects.

# IMPACT OF VARYING PHYSICAL ACTIVITY LEVELS ON AIRWAY SENSITIVITY AND BRONCHODILATION IN HEALTHY HUMANS

**Katherine Gallo; Marianne Swaney-Stueve**

*Department of Human Nutrition, College of Human Ecology, Kansas State University*

Check-all-that-apply questions (CATA) can be an efficient tool for eliciting consumer feedback on a variety of measures, from product characteristics to consumer emotions. This question format is particularly appealing for use with children, who may become easily fatigued with long questionnaires. However this type of question is rarely used in the U.S. school system as a means of testing knowledge. Instead, children are more familiar with the multiple choice “choose one” approach, which is used on all national standardized tests. Preliminary emotion research with children showed that the majority of children selected only one option for each CATA question, suggesting that American children may have some difficulty understanding this task. From this study, it is unclear if the children are unable to perform the task of checking multiple responses or if the subject matter (emotions) is too complex. This research will assess the performance of children in completing CATA questions with increasing levels of complexity, as compared to forced choice “yes/no” questions. Differences in CATA usage by age and gender will be explored. Results from this study will be used to determine the ability of children to use CATA questions and the effect of subject complexity for CATA questions when conducting future sensory research with children.

# Author Index

| NAME                       | DEPARTMENT                             | UNIVERSITY                    | POSTER #          |
|----------------------------|--|-------------------------------|-------------------|
| <i>ADHIKARI, Koushik</i>   | HN                                     | KSU                           | 24, 26            |
| ALCORN, Michelle           | HM                                     | KSU                           | <b>22</b>         |
| ALDRICH, Greg              | Grain Science & Industry Dept.         | KSU                           | 13                |
| BROWN, Cameron             | FSHS                                   | KSU                           | 1                 |
| BOUTROS, Basem             | HM                                     | KSU                           | <b>8</b>          |
| <i>BURNETT, Debra</i>      | CSD                                    | KSU                           | 15                |
| CARLISLE, Taran            | KINE                                   | KSU                           | 11                |
| CASEY, Kelsey              | HN                                     | KSU                           | <b>18</b>         |
| <i>CHAMBERS, Delores</i>   | HN                                     | KSU                           | 9                 |
| <i>CHAMBERS, Edgar</i>     | HN                                     | KSU                           | 5, 6, 7, 9, 20    |
| CHANADANG, Sirichat        | HN                                     | KSU                           | <b>6</b>          |
| CHAPES, Stephen K.         | Division of Biology                    | KSU                           | 23                |
| COLBURN, Trenton           | KINE                                   | KSU                           | <b>27</b>         |
| CULL, Brooke               | HN                                     | KSU                           | <b>12</b> , 3, 23 |
| DONFRANCESCO, Brizio Di    | HN                                     | KSU                           | <b>13</b> , 9, 20 |
| <i>DURTSCHI, Jared</i>     | FSHS                                   | KSU                           | 1                 |
| <i>DZEWALTOWSKI, David</i> | KINE                                   | KSU                           | 28                |
| EMERSON, Sam               | HN                                     | KSU                           | <b>19</b> , 3, 23 |
| FERGUSON, Scott K.         | Anatomy & Physiology                   | KSU                           | 27                |
| GALLO, Katherine           | HN                                     | KSU                           | <b>30</b>         |
| GALLUS, Kami               |  | Oklahoma State University     | 10                |
| GILMORE, Katelyn           | KINE                                   | KSU                           | <b>11</b>         |
| GOMEZ, David               | HN                                     | KSU                           | <b>9</b>          |
| <i>HAGEMAN, Karen</i>      | Anatomy & Physiology                   | KSU                           | 27                |
| HARMS, Craig               | KINE                                   | KSU                           | 19, 23, 29        |
| <i>HAUB, Mark</i>          | HN                                     | KSU                           | 3, 12             |
| <i>HEINRICH, Katie</i>     | KINE                                   | KSU                           | 11, 16            |
| HOLDSWORTH, Clark          | Anatomy & Physiology                   | KSU                           | 27                |
| HOLLERBACH, Brittany       | KINE                                   | KSU                           | <b>16</b>         |
| JAHNKE, Sara               | Center for Fire, Rescue & EMS Research | KSU                           | 16                |
| <i>JANG, Jichul</i>        | HM                                     | KSU                           | 21                |
| <i>JOHANNES, Elaine</i>    | FSHS                                   | KSU                           | 14                |
| JOHNSON, Ariel             | KINE                                   | KSU                           | 29                |
| KANG, Juhyun               | HM                                     | KSU                           | <b>21</b>         |
| KATTELMANN, Kendra         |  | South Dakota State University | 26                |
| KELLY, Brendan             | HN                                     | KSU                           | <b>5</b>          |
| KHATRI, Samantha           | DT                                     | KSU                           | 17                |

| NAME                           | DEPARTMENT  | UNIVERSITY                  | POSTER #              |
|--------------------------------|---|-----------------------------|-----------------------|
| <i>KIDD, Tandalayo</i>         | HN  | KSU                         | 24, 26                |
| KIM, Woo-Hyuk                  | HM  | KSU                         | <b>4</b>              |
| KOLMER, Sarah                  | KINE  | KSU                         | 29                    |
| <i>KOPPEL, Kadri</i>           | HN  | KSU                         | 5, 9, 13              |
| KURTI, Stephanie               | KINE  | KSU                         | <b>23</b> , 3, 19, 29 |
| LASLEY, Chandra                | FSHS  | KSU                         | <b>25</b>             |
| LEVITT, Morton                 | College of Medicine, Dept. BioMedical Science                             | Florida Atlantic University | 23                    |
| LI, Yijing                     | HN  | KSU                         | <b>26</b>             |
| LIGHTNER, Joseph               | KINE  | KSU                         | <b>2</b>              |
| <i>LINDSHIELD, Erika</i>       | HN  | KSU                         | 26                    |
| MAILEY, Emily                  | KINE  | KSU                         | 18                    |
| <i>MALEK, Kristin</i>          | HM  | KSU                         | 4                     |
| MILLER, Bryant                 | FSHS  | KSU                         | <b>14</b>             |
| <i>MUSCH, Timothy</i>          | KINE & Anatomy & Physiology   | KSU                         | 27                    |
| <i>MUTURI, Nancy</i>           | Journalism and Mass Communications  | KSU                         | 24, 26                |
| OPOKU-ACHEAMPONG, Audrey       | HN  | KSU                         | <b>24</b>             |
| OSELAND, Lauren                | FSHS  | KSU                         | <b>10</b>             |
| <i>PAEZ, Paola</i>             | Center of Excellence for Food Safety Research in Child Nutrition Programs | KSU                         | 22                    |
| <i>PENTZ, Julie</i>            | School of Music, Theatre & Dance  | KSU                         | 17                    |
| PHAN THUY, Xuan Uyen           | HN  | KSU                         | <b>7</b>              |
| <i>POOLE, David</i>            | KINE & Anatomy & Physiology   | KSU                         | 27                    |
| <i>ROBERTS, Kevin</i>          | HM  | KSU                         | 8, 22                 |
| <i>ROSENKRANZ, Richard</i>     | HN  | KSU                         | 12, 18, 19, 28        |
| <i>ROSENKRANZ, Sara</i>        | HN  | KSU                         | 3, 12, 18, 19, 23     |
| SANCHEZ-ALAN, Karolina         | HN  | KSU                         | <b>20</b>             |
| <i>SAUER, Kevin</i>            | HN  | KSU                         | 22                    |
| SCHACHTNER, Laura              | FSHS  | KSU                         | <b>17</b>             |
| SCHLECHTER, Chelsey            | KINE  | KSU                         | <b>28</b>             |
| SCHMIDT, Jennifer              | CSD   | KSU                         | <b>15</b>             |
| <i>SHANKLIN, Carol</i>         | HN & Graduate School  | KSU                         | 22                    |
| SMIT, Ann                      | CSD   | KSU                         | 15                    |
| SMITH, Joshua                  | KINE  | KSU                         | <b>29</b>             |
| <i>SWANEY-STUEVE, Marianne</i> | HN  | KSU                         | 30                    |
| TEEMAN, Colby                  | HN  | KSU                         | <b>3</b> , 23         |
| WASHBURN-BUSK, Michelle        | FSHS  | KSU                         | 14                    |
| <i>WILES, Bradford</i>         | FSHS  | KSU                         | 17                    |
| WILLIAMS, Zenova               | FSHS  | KSU                         | <b>1</b> , 25         |
| WRIGHT, Jennifer               | Anatomy & Physiology  | KSU                         | 27                    |
| ZIES, Susan                    |   | Ohio State University       | 26                    |

