

# 17<sup>th</sup> Annual

# Presenters and Poster Titles



## Emporia State University

<b>Linzi Garcia</b>	BUILDING A HOUSE OF JOY: THE CRAFT OF CROSS-GENRE POETRY AND THE RWDN KU GT QNGT "EQP VGO RQTCT[ " KANSAS
<b>Ashley Haas</b>	SILICONE-BASED, COST EFFECTIVE, ALTERNATIVES TO TRADITIONAL CASTING MATERIAL FOR LARGE-SCALE IMPRESSIONS
<b>Beth Hendrickson</b>	PERIODIZATION OF THE NORTHEAST KANSAS LIBRARY SYSTEM (NEKLS)
<b>Bethany Robertson</b>	EFFECTS OF SEASONAL BURN TREATMENTS ON NATIVE PERENNIAL PLANTS AND POLLINATOR RECRUITMENT: IMPLICATIONS FOR PRAIRIE CONSERVATION
<b>Shelby Young</b>	TESTING THE ABILITY OF ATTENUATED TOTAL REFLECTANCE FOURIER TRANSFORM INFRARED SPECTROSCOPY TO DIFFERENTIATE FORENSIC SOIL SAMPLES

# Fort Hays State University

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**Amilee Turner**

DEVELOPING SUSTAINABLE CITIES IN  
KANSAS: A FRAMEWORK AND  
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AN ELECTRICAL POWER ANALYSIS  
APPROACH**



**BUILDING A HOUSE OF JOY: THE CRAFT OF CROSS-GENRE POETRY AND THE PUBLISHER’S ROLE IN CONTEMPORARY KANSAS**

*Linzi Garcia and Kevin Rabas*

*Department of English, Modern Languages and Journalism, Emporia State University*

Comparing and contrasting my poetry collection, *House of Joy*, to other current works published such as *Museum Made of Breath*, *Milk and Honey*, shows the way in which finding the extraordinary in the ordinary is a trend in contemporary Kansas poetry. I also utilize these books and others like them to analyze how place and characters are crafted. The critical portion of this project explores what the voices of Kansas are; the responsibility of the author as narrator in cross-genre poetry; the relationship between the author, the poetry, the presses, and the readers; and how my research and poetry adds to the discourse concerning cross-genre poetry and the future of Kansas publishing.

**SILICONE-BASED, COST EFFECTIVE, ALTERNATIVES TO TRADITIONAL CASTING MATERIAL FOR LARGE-SCALE IMPRESSIONS**

*Ashley Haas<sup>1</sup>, Mousa Al-Zubi<sup>1</sup>, Ryan Rezzelle<sup>2</sup>, and Melissa M. Bailey<sup>1</sup>*

*<sup>1</sup>Department of Biological Sciences, Emporia State University*

*<sup>2</sup>Public Safety Group, Leica Geosystems*

Traditional casting materials such as AccuTRANSIL and MicrosilIL have been used for decades.







**RNA INTERFERENCE OF GENES WITHIN THE UNFOLDED PROTEIN RESPONSE OF THE PEA APHID (*ACYRTHOSIPHON PISUM*)**

**Paul Hess and Spencer McCue**

*Department of Biology Sciences, Fort Hays State University; Department of Chemistry, Fort Hays State University*

Pea aphids (*Acyrtosiphon pisum*) cause significant damage to pea crops each year. Control of these pests using RNA interference (RNAi) methods would be an incredible step forward in increasing the yield and financial gain from crop harvesting. RNAi allows us to target specific genes in a wide range of organisms. The Unfolded Protein Response (UPR) is ubiquitous in all living organisms. The UPR is an adaptive and interconnected set of signaling pathways within all cells that activates in response to physiological changes caused by misfolding or aggregation of proteins. Upon activation, the UPR pathways use complementary mechanisms to propel the cell towards either survival or death, also known as cellular apoptosis. We will be examining the results of using RNAi on six genes (PDIA6, VCP, DNAJC3, PFD2, TRAF2, and ATF-6) associated with the UPR. We hypothesize that we will see a decrease in pea aphid survivability and fecundity upon knockdown of these genes.

**WRONGFUL CONVICTIONS STEMMING FROM FALSE CONFESSIONS**

care clinic in Western Kansas. Over three months using a sample of preliminary data, results



**EFFECTS OF PROSTATE CANCER AND EXERCISE TRAINING ON LEFT VENTRICULAR FUNCTION AND CARDIAC AND SKELETAL MUSCLE MASS**

**Dryden R. Baumfalk<sup>1</sup>**, Alexander B. Opoku-Acheampong<sup>1</sup>, Jacob T. Caldwell<sup>1</sup>, Carl J. Ade<sup>1,2</sup>, Steven W. Copp<sup>1</sup>, Timothy I. Musch<sup>1,3</sup>, and Bradley J. Behnke<sup>1,2</sup>

<sup>1</sup>*Department of Kinesiology, Kansas State University;* <sup>2</sup>*Johnson Cancer Research Center;* <sup>3</sup>*Department of Anatomy and Physiology, Kansas State University*

Prostate cancer is the most common type of non-skin cancer found in men with above average incidence in Kansas. Recent evidence suggests prostate cancer independent of treatment has atrophic effects on whole heart and left ventricular (LV) mass associated with a reduced endurance exercise capacity. We tested the hypothesis that exercise training will mitigate prostate cancer-induced cardiac and skeletal muscle atrophy and improve LV function versus sedentary tumor-bearing counterparts. Copenhagen rats (n=39; ~5 mo. old) were randomized into four groups; exercise-trained tumor-bearing (EXTB) or control (EXCON) and sedentary tumor-bearing ( ) or







**FUNCTIONAL STARCH PROPERTIES OF EXTRUSION PRE-COOKED CHICKPEA FLOURS**

**Randall Martin**, Mehreen Iftikhar, Yong Chen Shi, Hulya Dogan, and Sajid Alavi  
*Department of Grain Science, Kansas State University*

Chickpeas and pulses are rapidly becoming a rqr wct" kpi tgf kpv" kp" vqf c{a" hqqf " industry. Chickpeas provide many benefits including being nutritious and sustainable. Some drawbacks to chickpeas include a poor functionality in baked products. Extrusion processing was proposed to pre-cook the starch and remove volatile and anti-nutritional compounds. Different varieties processing conditions were tested to create



**EFFICACY OF NOVEL, REDUCED-RISK INSECTICIDES AS AN ALTERNATIVE MANAGEMENT TACTIC FOR POST-HARVEST INSECTS IN FOOD FACILITIES**

**Hannah Quellhorst<sup>1</sup>, Frank H. Arthur, and W.R. Morrison III<sup>2</sup>**

<sup>1</sup>*Department of Entomology, Kansas State University;* <sup>2</sup>*USDA-ARS, Stored Product Insect and Engineering Unit, Manhattan, KS*

One fifth of all wheat grown in the United States is grown in Kansas. Kansas stores more wheat in the country for corn acreage planted. However, every year, 10-30% of cereal crops such as corn and wheat, are lost to insects after harvest. The most important stored products insect pests of corn and wheat are the maize weevil (*Sitophilus zeamais*) and the invasive larger grain borer (*Prostephanus truncatus*). Weight loss in corn grains due to these insects is about 10-20% and 34-40%, respectively. Given the importance of these global staple crops, and their particular relevance to protect these commodities from post-harvest insect pests. In this study, we investigated the efficacy of a new insecticide, the insect growth regulator combined with the pyrethroid deltamethrin and the synergist piperonyl butoxide (Central Life Science), at inducing mortality and causing sublethal changes in movement for adult *P. truncatus* and *S. zeamais* exposed on a treated concrete surface for varying periods. We were able to induce significant mortality and reduced movement for







**DOXORUBICIN-BASED PRODRUG AND ACTIVATABLE MR NANOPROBE  
FOR THE IMAGING AND TREATMENT OF CANCER**

**Raghunath Narayanam**, Bayan Ahmad S Dous, Tuhina Banerjee and Santimukul  
Santra

*Department of Chemistry, Pittsburg State University*

Magnetic Resonance Imaging (MRI) is increasingly being used as a diagnostic tool for cancer. We report the synthesis and characterization of a gadolinium (Gd)-DTPA disulfide-bonded Doxorubicin (Gd-DTPA-SS-F) encapsulated in poly(lactide-co-glycolide) (PLGA) nanoparticles. The PLGA-Gd-DTPA-SS-F-Doxorubicin nanoparticles were characterized by size exclusion chromatography (SEC), dynamic light scattering (DLS), and transmission electron microscopy (TEM). The nanoparticles showed a narrow size distribution and high stability in physiological media. The in vitro release studies showed that the nanoparticles could significantly reduce the initial burst release of Doxorubicin and prolong the release for up to 12 weeks. The in vivo studies showed that the nanoparticles could significantly reduce the tumor volume and prolong the survival of the mice. The results suggest that the PLGA-Gd-DTPA-SS-F-Doxorubicin nanoparticles are a promising candidate for the diagnosis and treatment of cancer.



**EXPANDABLE GRAPHITE AS AN EFFECTIVE FLAME-RETARDANT IN  
BIO-BASED RIGID POLYURETHANE FOAMS**



**DEVELOPING SUSTAINABLE CITIES IN KANSAS: A FRAMEWORK AND  
METHODOLOGY FOR THE SUCCESSFUL REDUCTION OF GREENHOUSE  
GAS EMISSIONS**

**Amilee Turner**

*Department of Political Science, University of Kansas*

The development of sustainable communities is beneficial to future of not just countries, but to states. With the negative effects stemming from globalization, including resource scarcity,



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**TEACHING AMIDST TRAUMA: IDENTIFYING THE IMPACT THAT  
TRAUMATIZED STUDENTS HAVE ON K-12 TEACHERS**

**Beth Rankin**

*Department of Curriculum and Instruction, University of Kansas*











## **TARGETING BLADDER CANCER WITH CINNAMALDEHYDE AND TRANS-CINNAMIC ACID**

**Connor Chestnut**, Dharmalingam Subramaniam, and Shrikant Anant  
*School of Medicine, University of Kansas Medical Center*

Bladder cancer is the fourth most common cancer in Kansas men and among the top ten most common in Kansas women, yet treatment options remain limited. Cinnamaldehyde is a naturally occurring compound found in cinnamon and cranberry that has shown in-vitro and in-vivo inhibition of multiple different cancers. Cinnamaldehyde is predominately excreted in the urine as cinnamic acid, which has also shown promising anticancer properties. The ability of Cinnamaldehyde and Cinnamic Acid to target bladder cancer cell growth in-vitro is the subject of this investigation. Bladder cancer cell lines 253JBV, T24, UMUC3, and normal uroepithelial were selected. Hexosaminidase assay was used to assess proliferation. 500 viable cells were seeded and incubated for 10 days evaluated for colony formation. Cell cycle analysis was performed with FACS Calibur flow cytometry. Cells were cultured and assessed for spheroid formation at 5 days. Spheroids were trypsinized and analyzed after 5 days incubation for secondary spheroid formation.



**INTERFERON INDUCED TRANSMEMBRANE PROTEIN-1 PLAYS A VITAL  
ROLE IN TRIPLE-NEGATIVE BREAST CANCER AND CAN BE TARGETED  
BY THE NATURALLY DERIVED COMPOUND PARTHENOLIDE**

**Olivia Provance<sup>1</sup>, Eric Geanes<sup>1</sup>, Asona Lui<sup>1</sup>, Anuradha Roy<sup>2,3</sup>, Scott Weir<sup>1,3</sup>, and Joan  
Lewis-Wambi<sup>1,3</sup>**

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**RELATIONSHIP BETWEEN PSYCHOSOCIAL HEALTH AND SELF-REPORTED ORAL HEALTH AMONG SENIOR CENTER PARTICIPANTS IN WICHITA, KANSAS**

**Ashwini Kanade<sup>1</sup>, Douglas Parham<sup>1</sup>, and Amy Chesser<sup>2</sup>**

*<sup>1</sup>Department of Communication Sciences and Disorders, Wichita State University;*

*<sup>2</sup>Department of Public Health Sciences, Wichita State University*

Poor mental health days are f g h p g f "cu."ōo gcp'pwo dgt"qihf c{ u'lp"vj g'r cuv'52"f c{ u'cf wnu'tgr qt vgf" their mental health was not good. Ceeqtf lpi "q"Co gtlecau'O gpvcn'J gcmj "Tcplpi u."the poor mental health days for women above 65+ years old in Kansas is greater (4.3) when compared to men (3.0). Oral health impacts mental health and thus, affects the health of Kansas residents. The definition of health has moved past free of disease and healthy mouth is an essential component of whole-person approach to health care. The relations between oral health and overall health of an individual are explicit and crucial. Poor oral health impacts nutrition, self-image, social interactions, mental and physical health, and health-related quality of life. The purpose of this study was to assess gender differences in psycho-social consequences of oral health at senior centers in Wichita, KS. The GOHAI (Geriatric Oral Health Assessment Index) survey was conducted and socio-demographic information was collected. Results of this survey showed higher impact of oral health on women as compared to men. Psychosocial well-being is an important component of mental health and this study assists to signify the mental health problems due to oral health. According to the Kansas Department for Aging and Disability Services (KDADS) report (2019), the behavioral health system is in crisis and the behavioral health problems include psychological distress. By improving oral health related quality of life, the psychological well-being and mental health among older adults can be enhanced.

**URINARY FOLLICLE STIMULATING GLYCOFORM ANALYSIS BY AUTOMATED WESTERN BLOT**

**Sahithi Katta and George R. Bousfield**

*Department of Biological Sciences, Wichita State University*

Follicle-stimulating hormone (FSH) is a critical hormone for fertility itical.5(s)-10v6o 612 re5eIeytpAn





**INTERNET OF THINGS BASED CYBER-PHYSICAL SYSTEM  
FRAMEWORK FOR REAL-TIME OPERATIONS**

**Vatsal Maru, Krishna Krishnan, and Saideep Nannapaneni**

*Department of Industrial, Systems, and Manufacturing Engineering, Wichita State  
University*

Automation on the production floor can improve production efficiency and human safety when performing hazardous tasks, particularly in Kansas where aircraft manufacturing requires handling large aerospace structures. To increase the edge in our aircraft manufacturing sector, incorporating intelligence into the robotic systems can improve their effectiveness on the production floor. Therefore, the objective of this research is to create an intelligent control system that performs operations based on object d



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**INTRUSION DETECTION FOR 3D-PRINTERS: AN ELECTRICAL POWER  
ANALYSIS APPROACH**

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