PRAIRIE VIEW A&M UNIVERSITY

13th Annual Research Symposium Abstract Guidelines

Have questions about constructing your abstract?

For any questions or concerns regarding abstract submissions, contact your faculty mentor/advisor.

Abstracts should only be submitted in collaboration with a faculty mentor, who will be named on the abstract. Students may only present once during the symposium, and only **one abstract per study** is permitted. For students working on a research team, the primary investigator is the only person who should submit the abstract and list the co-presenters. While all research collaborators may be listed on the abstract, research teams are limited to two presenters.

Abstracts must contain no more than 300 words and should summarize the background for your research, research hypothesis, methodology, the results you have obtained, and their significance. Abstracts will be evaluated for conciseness and accuracy of the work described. For citation formatting, special attention should be paid to the style you are using (i.e., APA, MLA).

Please follow the following guidelines when preparing your abstract:

- **Document Type:** Microsoft Word Document
- **Title:** Centered, 14-Point Arial Font, Bold, Upper and Lower Case
- **Authors' Name(s):** Centered, 12-Point Arial, Underline Presenting Author's Name
- **Affiliation(s):** Centered, 12-Point Arial, Department(s) and Name of Institution(s)
- **Abstract Text:** One Double Space After Author(s), Left Justified, 12-Point Arial
- **Word Limit:** 300 Words or Less (excluding Title/Authors/Affiliations)

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Example Abstracts by Subject Area

Agriculture

Physiological Responses to Prolonged Drought Differ Among Three Oak (Quercus) Species

Caitlyn Cooper, G.W. Moore, J.G. Vogel and J.P. Muir
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Plant physiological responses to water stress provide insights into which species may survive in exceptional drought conditions. This study on a remnant post oak savanna in College Station, Texas, examined drought effects on the physiology of 3-year-old Quercus shumardii (Shumard oak; SO), Q. virginiana (live oak; LO), and Q. macrocarpa (bur oak; BO) saplings. Species receive one of two treatments: 1) watered the equivalent of average precipitation or 2) droughted, receiving no water from June to October. Droughted saplings exhibited reduced ($P \leq 0.05$) photosynthesis, non-soluble sugar concentration, and ψ, but greater ($P \geq 0.05$) soluble sugar and condensed tannin (CT) concentrations that watered saplings. Droughted LO exhibited photosynthesis rates similar ($P > 0.05$) to those of watered BO and SO, and watered LO was best able to adjust its photosynthesis rates to changes in water availability during short-term drought. CT were greatest ($P \leq 0.05$) in BO, intermediate in LO, and lowest in SO. However, total sugar concentration was greatest ($P \leq 0.05$) in SO. Species differed in carbon allocation strategies and drought may increase these disparities.

Anthropology

Traditional Healers and the HIV Crisis in Africa: Toward an Integrated Approach

The HIV virus is currently destroying all facets of African life. It therefore is imperative that a new holistic form of health education and accessible treatment be implemented in African public health policy which improves dissemination of prevention and treatment programs, while maintaining the cultural infrastructure. Drawing on government and NGO reports, as well as other documentary sources, this paper examines the nature of current efforts and the state of health care practices in Africa. I review access to modern health care and factors which inhibit local utilization of these resources, as well as traditional African beliefs about medicine, disease, and healthcare. This review indicates that a collaboration of western and traditional medical care and philosophy can help slow the spread of HIV in Africa. This paper encourages the acceptance and financial support of traditional health practitioners in this effort owing to their accessibility and affordability and their cultural compatibility with the community.

Business & Computer Information Systems

Infrastructure of Connected Vehicles and Risks

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Introduction:
Connected vehicles, to put it simple are vehicles which can talk to one another and also with the infrastructure. With an aim to change the transportation system by improving safety and mobility of vehicles on road, U.S. Department of Transportation along with other stakeholders is actively involved in development and deployment of connected vehicles technology. Through vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication standard systems, connected vehicles technology aims to decrease road crashes and increase awareness of on-road situations for drivers. Connected

Vehicles would be able to communicate with each other through Dedicated Short Range Communications (DSRC), informing drivers with in-vehicles warnings for crash situations, about vehicles approaching from blind side and braking actions of vehicles moving ahead.
Risks:
As these vehicles use there on board Wi-Fi connections for communications and data transfers, security risks are bound to exist. With all the data being fed into the cloud, a more secure network system and car design is a necessity for these devices. The onboard systems have control over steering wheel, brakes, music system, indicator lights, transmission and every other system of the vehicle, the lack of data encryption, proper cloud security system could lead to serious risks.
The increase in the number of vehicles yearly, data generated by connected vehicles and the related infrastructure could be very large. The question of mobile networks ability to handle this data is also to be answered.

Communication Arts

The Prevalence of Theoretical Behavior Change Components in the Top Breast Cancer Websites to Encourage Detection or Prevention Behaviors and to Solicit Donations

Carolyn LaPlante & Samantha Munday
Under the direction of Dr. Sandi Smith, Communication; Dr. Pamela Whitten,

The Internet has become a primary resource for the general public who seek health information about a variety of topics, including breast cancer. This particular research is part of a larger study which evaluated the use of basic design tenets and theoretical behavioral change components in the top 157 breast cancer websites. Fourteen components were taken from three behavioral change theories. The focus of this particular project was to assess the use of these 14 theoretical components on breast cancer websites as they persuade users towards prevention or detection behaviors. It will also discuss how some of these components were additionally used to persuade users to contribute money to the organizations that sponsor the websites. It should first be noted that overall, theoretical components were absent from the websites in general. Nine out of the 14 components were found to be used primarily for detection, as opposed to prevention. This is an important finding because it is just as valuable, if not more so, for a person to prevent a disease as it is to detect it early. Four of the 14 were considered when assessing persuasion in terms of fundraising. Of these four that were assessed, three were used more than 50% of the time when soliciting money. These results lend ideas for future research on such topics as well as ideas to better the current state of the top breast cancer websites.

Computer Science

A Discrete Wavelet Transform for Enhanced Security in Steganography

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Technology is improving drastically every day and there is an increase in the amount of data being transmitted and as a result the security of data and information is decreasing. This poses serious threats to obtaining the secured data or information. Techniques for hiding information have emerged as a significant research field to help decrease or eliminate problems in network security and secure communications through public and private channels. Steganography is a

process of hiding the existence of information or data in another medium and is a fusion and encryption in order to have multiple layers of security to create a highly secure steganographic method. The wavelet coefficients of the payload and cover image are fused into a single image using embedding strength factors alpha and beta. These factors are manipulated in order to increase the overall imperceptibility, hiding capacity, security, and robustness of the final steganographic image to create a more efficient and secure steganography process.

Education

Development and Validation of the Grit Trigger Scale

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Recent research has established a direct positive correlation between Grit and academic achievement (Duckworth et al., 2007). Research shows that Grit is a better predictor of academic achievement than cognitive factors (Duckworth et al., 2007). If Grit 'triggers' can be determined, interventions may be designed to help students develop Grit, which will help the, succeed academically and in life. The purpose of this study was to develop and validate an instrument to identify the catalysts for the development for Grit. To ascertain the content validity, the items were developed based on two hypothesized models of resilience—grit, tenacity, and perseverance and the contextual factors and psychological resources that promote them (U.S. Department of Education Office of Educational Technology, 2013) and triggers of Grit developed by Yates, et al. 2014). The result of this process was a 40-item instrument grounded in the psychological resources and factors that promote resilience. The items were developed to reflect the following domains: Roles of Spirituality, Family, Life Circumstances, Teacher, Model, Peer, and School Climate. Data were collected from 32 students enrolled at a HBCU in the mid-south. Based on the initial Exploratory determine the reliability of the instrument. The reliability of the 3- item is 0.972 Cronbach's Alpha). A subsequent factor analysis confirmed the seven domains of the instrument.

Environmental Science

Developing Ambient Ozone Air Quality Mitigation Strategies for Neighboring Cities of the Marcellus Shale Plays in the Northeast United States

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Significant increases in oil and gas production from the Marcellus Shale plays in the Northeast United States (U.S.) began in 2010. With projected increases in oil and gas production from the Marcellus Shale, emissions of air pollutant precursors (e.g., nitrogen oxides (NOx) and volatile organic compounds (VOC)) from shale oil and gas related activities would have the potential to affect ambient ozone air quality in adjacent cities of shale plays. Understanding ambient ozone formation regimes is essential to develop air pollution mitigation strategies for cities violating the air quality standards. This work leverages: (1) satellite-retrieved column densities of ozone precursors; (2) photochemical air quality modeling and sensitivity analysis; and (3) ratios of satellite retrieved air pollutant column ratios to investigate ambient ozone formation regimes in neighboring cities of shale plays in the Northeast U.S from 2007 to 2014. Our results show that controls of NOx emissions, including those from local sources and upwind areas, would mitigate ozone air pollution from 2007 to 2014 in Boston, Philadelphia, Pittsburgh and Washington, D.C.

In New York City, controls of VOC emissions from local sources upwind areas would reduce ambient ozone formation in 2007-2009 and 2014.

Life Science

Novel Bioreactor to Study Mechanical Forces Effect on Atherosclerosis

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Atherosclerosis is the leading cause of death in the developed world. Development of atherosclerosis depends on responses of endothelial cells (which line the arteries) to the mechanical environment. Changes in fluid shear stress (FSS) or cyclic stretching (CS) have been shown to evoke cell changes associated with atherosclerosis. Fewer investigators consider interactions with both forces applied to cells simultaneously. For example, no group has studied changing the spatial angle between FSS and CS ("stress angle"), even though that angle often varies widely between healthy and disease-prone areas. We developed a benchtop bioreactor allowing endothelial cell culture which simultaneously applies FSS and CS. Spatial angle between the two forces can be changed to any arbitrary angle. Porcine endothelial cells cultured in the bioreactor were subjected to physiological flow and stretch for 24 hours, with stress angle at 0 or 90 degrees. Brightfield imaging demonstrated qualitative differences in cell shape and alignment depending on stress angle. These results suggest that spatial angle between FSS and CS affects endothelial cell morphology, meriting further study using quantitative methods. Thus, the bioreactor we developed represents an effective tool to study an aspect of mechanical forces effect on atherosclerosis which has never before been researched.

Mathematics

Flavours of Physics

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Using data from CERN–the European Organization for Nuclear Research–obtained through the Kaggle Competition "Flavours of Physics," a statistical model was built in order to identify the possibility of a hypothetical situation where a certain particle decays into another particle. Using techniques in Python and RStudio, along with extensive research into this field of physics, the model was built with small chance of over fitting by including conceptual and physical factors. The current result of using this model has a 0.826793 accuracy, according to the leader board on Kaggle, but further optimization and research should yield a better result.

Nursing

Spiritual Meaning Making in the Lives of Older Adults

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The purpose of this research was to examine how older adults make meaning of the spiritual turning points in their lives. [4]Twenty-four African American and Jewish older adults were recruited from a synagogue and a neighborhood center serving older African Americans and interviewed in separate ethnic groups. Participants were asked to complete a form and participate in a focus group identifying their spiritual turning points and the impact of those events on their lives at the time they occurred and now. Focus groups methodology was selected because of their low cost, high validity, and successful results with cultural groups. [5]Findings reveal that spiritual meaning making for older adults involves four dimensions: personal, interpersonal, sociocultural and structural. Meaning making for these older adults may involve attributing an old meaning to a new situation or reinterpreting an old experience from a new understanding. This narrative gerontology approach provided a framework for these ethnically, culturally, and religiously diverse older adults to explore how these critical, spiritual events contributed to life's meaning. [6]Their stories illustrate how older adults learn and grow from the events in their lives and how they utilize spiritual meaning making to increase their adaptive capacity.

Physical Science

Investigation of Wave Energy on the Texas Coast

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Due to the great and growing demand of energy in the Texas Coast area the generation of electricity from the ocean waves is considered very important. The combination of the wave energy with offshore wind power is explored as a way to increase power output, obtain synergies, maximize the utilization of assigned marine zones and reduce variability. In this research the electric power generation from the ocean waves and wind along the Texas Coast is investigated, assessing its potential form the meteorological data provided by five buoys from National Data Buoy Center of the National Oceanic and Atmospheric Administration, considering the Pelamis 750 Kw Wave Energy Converter (WEC) and the Vesta V90 3 MW Wind Turbine. The power output for wave energy was calculated using Matlab script and the results in several locations were considered acceptable in terms of total power output, but with a high temporal variability. To reduce variability this resource was combines with wind energy, obtaining a significant reduction on the Coefficient of Variation on wave.

Psychology

Individual Differences in Memory in Relation to Emotional Stimuli

Katherine Morabito
Under the direction of Dr. Christine Larson

Although research has been done showing that dysphoria correlates with an increased amount of mood congruent false memories in both dysphoric participants and negative mood induced participants, no research prior to this study has examined how inducing a negative mood in dysphoric participants affects mood congruent false memories. One hundred undergraduate

participants viewed lists of depression-relevant, neutral and positive words that they were asked to recognize later among lure words. Participants were grouped as dysphoric, mid-dysphoric, or non-dysphoric as determined by BDI-II scores. This study hypothesized that dysphoric participants induced into a negative mood would have a greater number of mood congruent false memories than all of the other groups. A 2 x2 x3 x 3 – way mixed-model analysis of variance (ANOVA) with Mood Induction (positive, negative), Gender (male, female), and Group (dysphoric, mid-dysphoric, non-dysphoric control participants) as between-subject variables and Word Type (depression-relevant, neutral, positive) as a within-subject variable and correlation analyses were used to examine the depression relevant false memory results. Correlation analyses revealed that dysphoria is related to an increased amount of mood congruent false memories ($r = .22$; $p < .04$). The results of this study add to previous research in the field of depression and memory on a small scale. Further research in the area is needed for a more complete understanding of how memory functions in dysphoric individuals, and may be used to augment or create treatment techniques.

Social Sciences (Humanities)

Parental Divorce and Adjustment in College Students

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Parental Divorce can often have a negative impact on the children, adolescents, and emerging adults in the family unit. With the addition of changing transitions, such as college, parental divorce begins to create difficulties for those who do not have the social support they need to adapt. The purpose of this study was to examine the relation between parental divorce and adjustment in college students with the goal of identifying differences in students who come from intact and divorced families, differences in gender and differences based on the age the emerging adult was when their parents divorced. Overall, results indicated no significant differences as a whole and specifically for gender on college adjustment for divorced or intact families. However, correlation analysis did indicate self-esteem was related to many of the variables of interest, including age of divorce. Specifically, students whose parents divorced later in life had higher levels of self-esteem compared to those who divorced when they were younger. Implications of the study will be discussed.