▶. **CSCU FACULTY** SATURDAY, **RESEARCH** & MAY 4, 2019 **SOUTHERN CREATIVE** ACTIVITY CONNECTICUT CONFERENCE **STATE UNIVERSITY**





Southern Connecticut State University

It is our honor as members of the organizing committee to welcome you to the Annual CSCU Faculty Research and Creative Activity Conference, hosted by Southern Connecticut State University. This event is a showcase for the leading minds of today's CSCU community, as well as a celebration of scholarship and creativity in all forms. As educational institutions, each of our Universities seek to promote interdisciplinary academic careers, and to recognize that both logic and creativity are key components in individual, economic, and societal success. The presentations highlighted by this conference demonstrate both the wide diversity and unifying cohesion of our faculty's scholarship and research. This conference aims to not only encourage continued work as a community, but also to awaken individual curiosity and purpose. So, it is with great pleasure that we present the scholarship and creative activity featured this year, and invite you to join in what promises to be an unparalleled demonstration of faculty accomplishment.

The CSCU Faculty Research and Creative Activity Conference is proudly sponsored by:

SCSU Division of Research and Innovation SCSU Office of the Provost/Vice President of Academic Affairs Connecticut State Colleges and Universities Department of Academic and Student Affairs SCSU Office of Faculty Development

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Annual CSCU Faculty Research & Creative Activity Conference

Saturday, May 4, 2019 | 8:00 a.m. - 2:30 p.m. | Southern Connecticut State University

8:00 – 9:00 Check-in | Presentation Set-up | Breakfast

9:00 – 10:00 Welcoming Remarks

Joe Bertolino | President | SCSU Robert S. Prezant | Provost & Vice President for Academic Affairs | SCSU Jane Gates | Provost & Senior Vice President for Academic & Student Affairs

SCSU Research Awardee Conference Panel

Chulguen (Charlie) Yang | SCSU | How to Incorporate Mindfulness Meditation and Visual Arts into Courses Reza Ghodsi | CCSU | Recent Research into Sustainable Energy and its Impact on Campus Martin Mendoza-Botelho | ECSU | The Welfare State, Health and Education Corrine E. Blackmer | SCSU | How Incorporating Cold War Era Gay and Lesbian Literature Improves the Classroom Experience

10:00 - 12:00**Morning Oral Presentations** Room 303 Session O1 – Math, Engineering & Technology Room 305 Session O2 – Education Session O3 – Economics & Management Room 306 Session O4 – Social Sciences & Humanities **Room 308** Session O5 – Sciences Room 309 Session O6 – Health & Social Sciences Room 311 Session O7 – Health & Social Justice Room 301 Session O8 – Artists Talks & Visual Art Room 326 **Morning Film Screenings** Session F1 ASC Theater 12:00 - 1:00**Poster Presentations** 3rd Floor Hallway Session P 3rd Floor Ballroom 12:30 - 1:30Lunch will be made available starting at 12:30 1:30 - 2:30Afternoon Oral Presentations Session 09 – Environment, Geography & Geology Room 305 Room 306 Session O10 – Health & Human Behavior Session O11 – Finance & Accounting **Room 308** Session O12 – Political & Social Sciences Room 309 **Tapas Presentations** Session T1 Room 201 Session T2 Room 301 **Afternoon Film Screenings** Session F2 ASC Theater 3rd Floor Ballroom 2:30 - 3:00**Concluding Remarks**

ASC 3rd Floor

3rd Floor Ballroom

10:00 a.m. – 12:00 p.m. | Morning Oral Presentations

Adanti Student Center 3rd Floor, Varying Rooms

Session 1 – Mathematics, Engineering & Technology – Room 303

*Denotes session chair

*O1.1 Virtual Reality Based Teleoperation of Collaborative Robots for Space Repair Jobs
Author(s): Haoyu Wang, Biao Zhang, Tingshen Zhang & Austin Jakacky
Department: Manufacturing & Construction Management
Institution: CCSU
Abstract: This research will contribute to NASA's Human Exploration and Development of Space strategic enterprise. The goal of the research is to develop a technology to teleoperate a collaborative robot to conduct maintenance or repair (MR) jobs by itself or collaborate with a human in space. Thus, it will be possible to repair a device through teleoperating a robot by human from earth with a relatively cheap and intuitive solution. We proposed and developed ReMoBot, a system that controls ABB Yumi collaborative robot through a virtue reality (VR) device, HTC Vive. A user can hold the Vive controllers to operate the two arms of Yumi to finish simple tasks such as drawing on paper. The system was tested in simulation of RoboStudio and on the real Yumi robot. Input motion data from Vive controllers and output motion data from Yumi was collected and analyzed to prove the effectiveness of the system.
*This work was supported by a CSU Research Grant and by a CT Space Grant

O1.2 Experimental Evaluation of Concrete Strength Mixed with Fly-Ash Author(s): Talat Salama Department: Manufacturing & Construction Management

Institution: CCSU

Abstract: Bridges are designed to have a useful life of seventy years, but many stay in service for considerably longer periods of time. Over time, the concrete used in the construction will develop cracks that allow water to permeate the structure carrying chlorides and other harmful materials that accelerate the deterioration process, hence reducing the overall strength of the bridge. Efforts are being made to experiment with alternative construction materials to help increase the strength, and therefore their longevity, of these structures without dramatically increasing the cost of maintenance. One such approach is the use of stronger concrete mix designs by adding fly-ash, which can increase the life of the bridge and decrease the total life-cycle cost. This research project at CCSU was performed to justify the use of adding Class "C" fly ash and Class "F" fly ash as an admixture in structural concrete to increase its strength.

The plan was to perform strength tests on various design mixes with varying amounts of Class "C" high calcium fly ash and Class "F" low calcium fly ash. The fly ash was obtained from FlyAsh Direct and the following data was provided for the two types used. The chemistry of the Class C Fly Ash was Fineness of 8.92, loss on Ignition (LOI) of 1.3%, Specific Gravity of 2.78, and moisture of 0.16%. While for Class F Fly Ash, the chemistry was Fineness of 8.92, loss on Ignition (LOI) was 0.24%, Specific Gravity of 2.7, and moisture of 0.04%. This experiment consisted of constructing concrete 3"x6" cylinders from the various batches of concrete. The concrete mixture was Type I cement, fine aggregates (FA), 3/8" size coarse aggregates (CA). The proportions were determined using the American Concrete Institute (ACI) Manual of Concrete Practice, Section 211.1. The proportions of cement to sand to gravel and the water to cement (w/c) ratios for the concrete strengths of 2000 psi, 4000 psi and 5000 psi were 1:3.6:2.6 with w/c of 0.82, 1:2.3:1.8 with w/c of 0.57, and 1:1.8:1.5 with w/c of 0.48, respectively. Each batch consisted of four variables of fly-ash. The first variable was the control mix design with no fly ash added, while the other three consisted of 10%, 20%, and 30% fly ash. Twelve test cylinders were created for each batch to allow for three test cylinders to be tested at 7, 14, 21 and 28 day breaks, for a total of 180 samples mixed and tested.

Based on the findings of this experiment, the use of Class "C" fly ash increases both strength and workability of structural concrete used for bridge construction. For the 30% fly-ash mix, the strength increased by 30% and 48% for the 2000 psi and the 4000 psi design mixes respectively. The increased strength should provide an incentive to use Class "C" fly ash as an additive to concrete used to construct new or repair bridge structures. Class "F" fly ash, as a result of this experiment, caused a decrease in the concrete strength. **This work was supported by a CSU Research Grant*

O1.3 On a Generalization of Hajnal and Juhasz, Sapirovskii and Shu-Hao's Inequalities Author(s): Ivan Gotchev Department: Mathematical Sciences Institution: CCSU

Abstract: In 1967, Hajnal and Juhász proved that if X is a Hausdorff space, then $|X| \le 2^{\chi(X)c(X)}$, where $\chi(X)$ is the character of the topological space X and c(X) is its cellularity. In 1974, Šapirovkiĭ sharpened their inequality for T_3 -spaces and in 1988, Shu-Hao extended Šapirovkiĭ's inequality to the class of Hausdorff spaces.

In this talk we will present a recently obtained cardinal inequality of Tkachenko, Tkachuk and the presenter, which improves significantly Shu-Hao's inequality for the class of Hausdorff spaces, and therefore it also generalizes and improves Šapirovkii's and Hajnal and Juhász' inequalities. **This work was supported by a CSU Research Grant*

O1.4 CCSU Helicopter Flight Simulator Design and Test

Author(s): Fu-Shang Wei & Kenneth Trochsler Department: Engineering

Institution: CCSU

Abstract: Over the course of several semesters, a student and faculty research team from Central Connecticut State University's (CCSU) Department of Engineering has been designing, fabricating, and testing a full- scale helicopter flight simulator with a moving platform. Figure 1 presents the CCSU designed and manufactured flight simulator with the key parts labeled. Pilot collective control, cyclic control, three electrical actuators, upper and lower platforms, safety cables, harness restraint, and the universal joint are visible in the figure.

All mechanical systems of the flight simulator are designed, machined, and built by CCSU Department of Engineering's students. The basic design gross weight for the simulator is 300 lbs. of force applied to the pilot seat. The structures are designed to have enough strength to sustain a maximum of 3g pull-up maneuver and a minimum of -1g push-over flight conditions.

The maximum angular displacements of the simulator platform pitch and roll motion are designed at $\pm 25^{\circ}$ for each direction and the yaw motion is designed at $\pm 45^{\circ}$. All flight simulator CAD design drawings and the FEA analysis are also conducted by students. Figure 2 presents a result of the FEA analysis with Von-Mises stress pointing to the high deflection zone.

The purpose of this research is to simulate full-scale helicopter flight testing using the CCSU Department of Engineering fabricated flight simulator as a basic teaching tool. A helicopter flight simulator is a machine that can be used as a training tool to aid in the development of the helicopter pilot's skill. This tool can replace an actual aircraft during pilot training, thereby greatly reducing the training cost and significantly enhancing pilot flight safety.

The flight simulator software X-plane® is an off-the-shelf piece of software that has been purchased and installed onto an existing computer system to simulate helicopter flight. This research presents the helicopter flight test time history data obtained from the X-plane® software flight simulator to correlate with the analytical results computed from basic helicopter theory. Flight test parameters of interest include helicopter pilot controls, engine power, rotor torque, forward flight speed, thrust, altitude, and rotor rpm.

The flight simulator software X-plane® is an appropriate simulation software for helicopter flight. The reasons that faculty/students choose to use X-plane® are: i) X-plane® has a higher degree of realism than Microsoft Flight Sim, ii) X-plane® has less performance demands – better frame rate when run on cheaper computers, iii)X-plane® has the desired helicopter models installed, and iv) it has a Wiki Site for configuration assistance.

The goals for this project are: i) to provide students with hands-on experience on how to design and fly a helicopter. ii) to build a fully functional flight simulator that can be used as a test bed for research. iii) to train students and faculty to use off-the-shelf hardware and software components in order to build a cost-effective flight simulator. iv) to encourage students to participate in faculty research projects. v) to boost students' interest in studying aerospace science and technology. vi) to develop a design process that can be used for helicopter design improvements. vii) to have students work with local helicopter companies and gain industry experience.

There are three actuators in place that can be used to rotate the platform in the pitching, rolling, and yawing directions. The electrical control system is also designed, fabricated, and assembled by CCSU students. The electrical systems consist of a microcontroller board, three high-power H-bridge circuits, AC/DC power supplies, and three actuators. The hardware design of the control electronics for the platform includes a high-power circuit and a low-power microcontroller board. Both boards respond to the commands sent by the flight simulator X-plane® software to simulate helicopter flight. The three actuators mounted on the platform are rated for 24 V. With all three actuators in their worst-case conditions, it is possible for the platform to require 1.8 kW power. The system is broken down into 4 major components: i) Mechanical platform with 3-axis stage motors and associated feedback, and limit switches. ii) Personal computer running Microsoft Windows® and the X-plane® simulation software. This PC accepts input from the flight controls (collective, cyclic, pedals, throttle) on the platform and transmits commands to the controller board to move the platform. iii) High-power electronics necessary to control the current flow and torque of each stage motor. High current output is dependent on signals received by the controller board. iv) Low-power electronics necessary to receive set-points from the simulation PC, read feedback from the simulation platform, and send commands to the power electronics board.

In order to properly connect the actuators to potentiometers, and to improve the transient response of the system, an 8 to 1 pulley system has been developed and implemented to increase the platform control sensitivity. In addition, the added potentiometers provide proper feedback to the controller to help the signal processor verify where the actuator position is. The pulley system greatly enhances the platform motion sensitivity and results in a better flight simulation.

*This work was supported by a Research CSU Grant, CT NASA Space Grants, and the CCSU Summer Helicopter Program

O1.5 Recognize Real Time Human Activity by using CPA

Author(s): Yulei Pang Department: Mathematics

Institution: SCSU

Abstract: Human motion analysis is a grand research question and it continues attracting attention in both academia and industry. Its applications include surveillance systems, patient monitoring systems and so on. In recent years, most human activity analysis techniques are based on machine learning and deep learning algorithms. Although the empirical study demonstrated the effectiveness of these algorithms, an important factor, the time stamp, was absent from studying. In this project, we studied the human activity in the perspective of time series analysis. More specially, we used changepoint analysis (CPA) technique to identify whether, when and where a change has taken place in human activity time series. **This work was supported by a CSU Research Grant*

O1.6 Size Estimation of Moving Objects in Remote Site using Multiple-View Geometry through Wireless Network

Author(s): Sangho Park & Xiaobing Hou

Department: Computer, Electronics & Graphics Technology **Institution:** CCSU

Abstract: This talk presents a research effort to investigate mobile multi-camera triangulation via wireless network. The motivation of this study is to develop a versatile mobile multi-camera system that can be deployed to a remote site, capture the object of interest in the site, track the movement of the target object, and estimate the size of the footage of the object in terms of objective measurement. The footage size of object is an important invariant feature useful for computational vision, object recognition, intelligent visual surveillance, traffic monitoring, etc. Even if object appearance may vary depending on camera viewpoint, the object footage is invariant in the real world and can be objectively estimated by triangulation in multiple-view geometry.

Multi-camera triangulation process merges multiple view-dependent camera images of the object and transforms them into a view-independent orthographic top-down projection, which enables footage estimation. Traditional method of multi-camera triangulation is to use cameras linked through video cables to a server computer. This method is cumbersome or unachievable in outdoor environments, because the cameras must be physically linked to the cables and to the computer. Monitoring wide area in a large-scale scene or a remote site is not possible due to the limitation.

We propose an alternative method: the mobile multi-camera triangulation via wireless networks. The current work uses multiple video feeds simultaneously captured by multiple cameras (called camera nodes). The camera node is envisioned as a mobile embedded computer system with camera interface. Our current feasibility study uses a notebook computer with a USB camera as an experimental camera node; our future study will develop a dedicated embedded computer system for deployable camera node. Our current experiment, instead, uses multiple notebook computers as the camera nodes.

Modern cameras are reliable for data acquisition in a fixed frame rate (e.g., 30 frames per second). Since the frame rate is fixed, we just need to maintain synchrony between multiple cameras for triangulation. It is not practical to use hardware or software trigger to synchronize multiple cameras remotely. Instead, we propose to share the server computer's local clock time wirelessly with the remote camera modules in order to time-stamp individual video frames.

Individual camera modules capture video frames, time-stamp each frame, and store them in a queued buffer on the camera module. The queued frames are individually transmitted to the remote server via IEEE 802.11 (WiFi) intranet using User Datagram Protocol (UDP).

The remote server receives video frames from the dedicated UDP ports, re-align the frames with temporally-nearest frames among the multiple video streams for synchronization, and reconstruct the videos for all the camera nodes. This dissemble of videos into individual frames at the remote camera nodes and the re-assemble of the transmitted frames into synchronized video feeds at the server computer is the foundation for the triangulation via wireless network.

We present promising empirical results that show reliable footage estimation of moving objects in outdoor environment is achievable in high confidence. Our future plan is to develop embedded computer systems for deployable camera nodes.

Session 2 – Education – Room 305 *Denotes session chair

*O2.1 Opportunity and the "College of Access" Student

Author(s): Sousan Arafeh & Theresa Marchant-Shapiro

Department: Educational Leadership & Political Science

Institution: SCSU

Abstract: In the depiction of the United State as "land of opportunity," educational opportunity provides access to upward mobility. Although data correlates educational attainment with income at the aggregate level, little micro-level research traces how undergraduate college students perceive opportunities after graduation and how these opportunities actually translate into career and economic attainment. Does a college degree translate into the opportunity for upward mobility for underprivileged students? If so, how? Since 2014, the authors have explored "opportunity" in various social sectors (e.g., education, community, organizations, public policy). We have explored "educational opportunity" by analyzing the concept "opportunity to learn" and how opportunity affects teaching and leading. We have also explored "opportunity" as conceived and mobilized by diverse social justice-oriented community leaders and in web-based and organizational discourse. These inter-disciplinary investigations herald exciting possibilities for theorizing "opportunity" to better stimulate social equity.

This paper shares findings from a qualitative exploratory study of at-risk graduates' perceptions of post-graduation "opportunities" to assess how their experiences have influenced their access to such opportunities. We interviewed a diverse group of six 2013 graduates from Southern Connecticut State University (SCSU), a "college of access." Subjects were randomly selected from their cohort to include equal numbers of graduates who were deemed "at-risk" or "not-at-risk" based on their GPA in their first semester of college. The interviews were transcribed, coded, and analyzed using methods of constant comparison and thematic analysis. We explored the following research questions:

- What opportunities and barriers do graduates encounter?
- What influenced opportunities or barriers?
- How did "at-risk" and "not at-risk" graduates differ in their understanding of, and experiences with, opportunity?
- What role did the college experience in those opportunities and barriers?

During the interviews, subjects typically related opportunities to their career or professional trajectory. Subjects tended to see barriers and opportunities as two sides of the same coin, depending on whether a necessary precondition was present or absent. These preconditions took two forms: internal and external. Internally, subjects discussed their desire and capacity to pursue or accept an opportunity. For example, they discussed the possibility that distractions such as jobs and campus activities could make it difficult to focus on available opportunities. Externally, subjects focused on the availability of 1) information about the opportunity; 2) their own qualifications for that particular opportunity; and 3) the necessary financial resources. Subjects frequently referred to personal connections (including college faculty members) for providing information about the availability and appropriateness of opportunities. Graduates described experiencing a series of unique opportunities that created unforeseen trajectories. Universally, the graduates believed their college experience opened doors to their future. These portrayals suggest that simply graduating from college is not sufficient for gaining access to upward mobility. In order to prepare students, universities of access need to facilitate the navigation of a complex web of information, relationships, and decisions that, together, lead to opportunities and a future that is not necessarily clearly envisioned during the college experience.

* This work was supported by a CSU Research Grant and the William Caspar Graustein Memorial Fund

O2.2 Improving Student Performance in Introductory Accounting – Raising Minimum Grade Standards is Not the Answer

Author(s): Janet Phillips Department: Accounting Institution: SCSU

Abstract: The current study was designed to examine whether or not raising the required minimum grade in Financial Accounting, a core course in the School of Business, resulted in students earning higher grades. The decision was made, beginning with the fall 2015 semester, to require that students earn a minimum grade of at least "C" in all courses included in the common core. The intention was to improve student performance and therefore the overall quality of the program in the beginning stages of a quest for AACSB accreditation. While increased minimum grade standards are imposed with the intention of improving student performance, a potential downside is the very real possibility that professors may be more likely to issue the minimum grade required to avoid requiring the student to retake the class or low-end grade inflation. To diminish the effect of grade inflation in this study, a common denominator throughout is the same professor using the same textbook, teaching and examination format. The research design examined a sample of students on the "revised program" in comparison to a sample of students on the "original

program" using an independent sample t-test comparing the means of the two groups. Results suggest average grades in Financial Accounting did not increase as a result of the increase in the minimum grade standard. To test for grade inflation, the grade distributions of the "revised" and "original" and "grand-fathered" program samples were compared. Results do not suggest the appearance of any grade inflation whatsoever. In fact, a higher concentration of "C" grades as expressed as a percentage of the total were given in both the "original" and "grand-fathered" samples than in the "revised" sample. (A grandfathered sample was created for students taking the course while the new standard was in place but were under the original program because of a previous catalog term.). Finally, a hierarchical regression was performed using a model developed in a precursor study with variables previously found significant is explaining student grades (Phillips, 2015). Results support those of the independent t-test as the dichotomous new program variable was suggested to have an indirect relationship to student grades. A potential explanation is that overall student quality decreased overall since the minimum grade was increased which is evident by a decrease in the average GPA of 2.91 in the original sample to 2.65 in the revised sample.

O2.3 Preparing Future Teachers for Teaching in Urban Schools Author(s): Beena Achhpal

Department: Curriculum and Learning Institution: SCSU

Abstract: This paper will report the findings of a small-scale study conducted to identify the kind of behavioral, social emotional and learning challenges that urban school teachers experience in their classrooms. Semi-structured interviews were conducted with 15 teachers from three urban school districts in Connecticut (USA). The spontaneous responses of the teachers showed that all urban school-teachers in this study experienced increasingly more behavioral (physical and verbal aggression, non-compliant behaviors), social and emotional challenges (poor interpersonal communication skills, mental health issues) and learning related (lack of attention and inability to keep pace with instruction) challenges in their classrooms. As teachers described these challenges, they attributed causes of these challenges to several child-related and home-related factors. Implications for teacher preparation programs will be discussed * This work was supported by a CSU Research Grant

O2.4 Exploring the Educational Potential of a Co-Educational Program on Feminist Art at the Brooklyn Museum

Author(s): Cheri Ehrlich

Department: Art

Institution: SCSU

Abstract: My research examines the intersections of museum education and critical pedagogies, which are topics that arose from my learning and teaching experiences in art education. The study I developed and directed emerged from critical reflection of after-school programs I taught from 2006-2013 at the Brooklyn Museum. Concurrently, the Museum opened the Elizabeth A. Sackler Center for Feminist Art (EASCFA), the first center of its kind to be situated within a museum. The launch of the EASCFA bought new possibilities for the display and exhibition of feminist art in the context of contemporary feminism and feminist art as well as possibilities for engaging adolescent audiences.

I was curious to find out what the affordances of a program where a co-educational, diverse group of adolescents were invited to respond to feminist artworks in the context of an after-school education program facilitated through critical pedagogies. In the context of my study, "affordances" is defined as the possibilities for learning and engagement. I designed a ten-week program for a diverse group of co-educational adolescents ages 15-17 from New York City and taught it in the EASCFA. Participants met for the first three sessions in single-gender groups and, then, for the remaining seven sessions merged to meet in one co-educational group. I pre-selected artworks to observe and discuss that included a collection of ancient goddess figurines, Louise Bourgeois' sculpture, The Couple, (2003), Eva Hesse's, No Title, (1960), Judy Chicago's, The Dinner Party, (1974-9), Kate Gilmore's, Blood from a Stone (2009) and Mickalene Thomas', A Little Taste Outside of Love (2007). Data were collected from audio recordings of discussions in front of artworks that were transcribed verbatim, video interviews and transcriptions, and written reflections.

Through engagement with feminist artworks in the co-educational group, each gender was better able to embrace the unexpected and understand the "other" as complex and to see the self in new ways by going beyond dichotomizing and thinking about genders in blocks. Participants' comments, in this program, indicated they considered their thinking in response to hearing perspectives voiced by others, either of the same or another gender. This suggests, program formats focused on feminist art can vary, from single-gender to co-educational groups. Each format has their strengths, for example, comfort and trust initially with the single-gender and then, new productive ways of relating and socializing in coeducational groups. However, matching learners' emotional and intellectual needs should be taken into consideration.

In addition to providing adolescents with diverse narratives about women's lives through the engagement and discussion of feminist artworks, programs incorporating feminism should explore topics that reinforce and recognize the interplay of identities insisted by intersectional feminism. Additionally, I identified three identity-related topics for art educators to explore in greater depth both in their teaching practice and with contemporary adolescents. They include broadening masculinities, sexual orientation, and racial literacy.

I envision this research will be applicable for art education and museum professionals and, more broadly, educators at all levels interested in understanding how art can support critical pedagogies.

O2.5 Lessons from Shanghai: An Experiment in UK Schools

Author(s): Yuanqian Chen

Department: Mathematical Science

Institution: CCSU

Abstract: Since 2015, British educators have demonstrated much interest in learning from Shanghai education system as Shanghai students have consistently received the highest scores at the Program for International Student Assessment (PISA) that evaluates world education systems by assessing the skills and knowledge of students in science, mathematics, and reading. This paper studies initiatives taken by UK educators, with the goal to boost students' mastery of mathematics skills, such as introducing math textbooks from Shanghai, training school teachers in adopting South Asia teaching method, and bringing UK teachers to visit Shanghai schools and inviting Chinese teachers to teach at UK schools. We will analyze what contributed to the success of Shanghai schools, especially its professional training and professional development programs.

O2.6 Challenges of Gameful Learning Approaches Author(s): David Petroski Department: Communication, Media, and Screen Studies Institution: SCSU Abstract: It has been argued gameful learning approaches to the classroom offer increased student engagement that subsequently leads to improved learning outcomes. However, this assumes that students are receptive to an approach that contradicts their experiences. This paper explores the obstacles to incorporating a gameful approach from the perspective of student experience. Central to the exploration is the notion that gameful learning operates from a privileged perspective that assumes uniformly equitable access to resources and varied learning experiences. Examples of the incorporation of gameful approaches into classroom contexts illustrate complications and pedagogical dilemmas that shade the potential utility of the perspective.

Session 3 – Economics & Management – Room 306 *Denotes session chair

*O3.1 A Longitudinal Study of Students' Perceptions of Women in Management Author(s): Ellen Frank Department: Management

Institution: SCSU

Abstract: Replicates a study completed by the same investigator 30 years ago regarding college students' perceptions of women in management. Questions include descriptions on semantic differential scales of male/female managers, personal preferences for boss, and estimates on when management equality would be achieved by women. The same three factors were determined from the gender descriptions: Male managers scored higher on "Managerial Behavior," female managers higher on "Consideration," and no significant difference for "Initiation of Structure." When asked the preferred boss of a mixed gender group, women are more likely to select a man, although this preference has decreased. However, there was a significant increase for females to choose a woman manager as their personal preference. Results indicate little change in the stereotypical description of a woman manager, and that current female students have yet to perceive women managers as competent as male managers. There is also the perception that in the population at-large, it is not yet acceptable for women to pursue a managerial career when married with children. However, men have significantly increased their acceptance.

O3.2 Rhode Island and Connecticut Wineries Business Strategy, Performance, and Management Capabilities: a Survey of Managerial Practices Author(s): Emiliano Villanueva & Juan R. Ferrer

Department: Business Administration

Institution: ECSU & University of Zaragoza

Abstract: The world wine sector has greatly changed in recent years, increasing the volume produced and traded, but also its competitiveness. In this new environment, many small businesses joined the industry, developing their activity in geographical regions with less wine tradition. These new wineries in less traditional wine regions have broadened the concept of the industry by linking it with tourism; perhaps with more strength than in other more traditional areas, where this change in the business model has also occurred. To know what are the factors that give a greater competitiveness to this new typology of wineries, this article has surveyed the wineries of the states of Connecticut and Rhode Island, in the northeast of the US, a new wine region in the world. Through a questionnaire, the strategies these wineries follow and their relationship with their performance, and their relevant management capabilities have been analyzed. The conclusions show how the management capabilities they own are more important than the strategies they follow in their pursue and achievement of a competitive advantage; and that it is the strategy of differentiation that facilitates a greater competitiveness. These managerial skills together with their conception of a services business, where the tourism aspect plays a fundamental role, seem evident when defining the resources and capabilities that generate their sustainable performance.

O3.3 Technological Change and the Diffusion of Mexican Immigrants in the United States

Author(s): Younjun Kim & Eric Thompson

Department: Economics & Finance

Institution: SCSU

Abstract: We explore whether routine-biased technological change facilitated the geographic diffusion of Mexican immigrants from traditional destination states, such as California and Texas, to other states in the 1990s and 2000s. The computerization and automation of routine tasks raise educated workers' productivity. This productivity growth increases their wages and expenditures on services and housing, which increases labor demand for Mexican immigrant workers in service and construction occupations. We find that local labor-market technology adoption increased the Mexican immigrant population and promoted the diffusion of Mexican immigrants.

O3.4 Economic Development in Ghana and Malaysia: A Comparative Study Author(s): Sam Andoh, B. Scott & G. Abrebese

Department: Economics

Institution: SCSU

Abstract: Malaysia and Ghana both gained independence from the British in 1957. At the time, both were low-income agricultural economies dependent almost entirely on the exports of primary commodities. The per capita gross domestic product of Malaysia was only 1.08 times that of Ghana, then. Fifty years later, it was 12.70 times greater. No two countries offer a better example to understand economic growth than Ghana and Malaysia. The overarching goal of this manuscript is to identify the factors that account for the disparity in growth between Ghana and Malaysia and the lessons that can be learned from them by policy makers.

* This work was supported by a CSU Research Grant

O3.5 Using Binomial Distribution to Compute the Uncertainty of Winning in the First Round of National Basketball Association Playoff Author(s): Rotua Lumbantobing & Todd McFall

Department: Social Sciences

Institution: WCSU & Wake Forest University

Abstract: In 2003, the National Basketball Association (NBA) expanded the first round of the postseason from the best-of-five format to the best-of-seven format. In the new format, a team has to win four games to advance to the next round (as opposed to three games in the previous format). The change has led to a reduction in uncertainty of the outcome of the series. More specifically, the longer the series, the more likely the

better team (based on the seeding) will prevail. Hence, the change tends to favor better teams. We use the binomial distribution to show the change in series outcome in terms of win probability and the expected number of games. We introduce the idea of series state (the specific game of the series) as it relates to the number of permutations a team faces to win the series.

We used a binomial probability distribution function to compute probability of an outcome of an experiment in which there are only two possible outcomes: success and non-success (or failure). The probability of each outcome is assumed to be constant. The distribution can be further used to compute the probability of an event happening based on the number of times an experiment is repeated; this is called trials. Games within a series can be thought of as trials except that the probabilities differ with the home and away feature of series. First, the probability of success (win) differs for each team given their regular season win-loss record. Second, the probability of success differs depending on whether a team plays at home (higher) or on the road (lower). Finally, it differs depending on the series state, that is, where in the series the two games are. Using regular season data, we constructed win probabilities of each team at home and on the road and used them to compute the probability of winning a series and the expected number of games in the series. We find that the former decreased while the latter increased in the best-of-seven format.

O3.6 The Sharing Economy: Going Under the Covers of an Airbnb Author(s): Rick Bassett Department: Business Information System Institution: SCSU

Abstract: Airbnb is one of the most successful and fastest growing home sharing platforms in the world. They facilitate short term home sharing between hosts and guests for a fee under a strict governance agreement know as their terms of service. This presentation will provide a realistic overview of the actual Airbnb hosting experience by this author, who operates several Airbnb's, including the startup phase, the daily operation, required marketing, the review system, risk management and a financial profitability model. The author will also compare and contrast the business opportunities between operating a short-term rental, Airbnb, and a traditional long-term rental.

Session 4 – Social Sciences & Humanities – Room 308

*Denotes session chair

*O4.1 Women's Lived Experience of Incarceration Author(s): Amy Smoyer Department: Social Work Institution: SCSU Abstract: There are about 200,000 women incarcerated in the US; 1,000 in our state of CT. This presentation shares qualitative and quantitative data about incarcerated and formerly incarcerated women in CT in order to inform policy development and programming for this vulnerable community. Data comes from 5 different research project conducted since 2011. Methodologies include individual interviews, focus groups, and structured surveys with a total of 98 women.

* This work was supported by a CSU Research Grant

O4.2 Existentialism Without the Angst: Sartre, Macmurray and the Negative Author(s): Elanor Godway Department: Philosophy Institution: CCSU

Abstract: Both Sartre and Macmurray reject the Cartesian notion of self as thinker, focusing on experience which precedes thinking and the importance of action, and give a special twist to dialectic especially in personal relationships. Both see themselves as heirs to Kierkegaard. But where Sartre has us face to face with Nothingness, afflicted by anguish, lost without direction ("man is a useless passion"), Macmurray gives a different account of Négatité – the energy of the "no". For Macmurray personal existence begins in infancy. The baby in a sense has no "outside"; he is surrounded by touch, quintessentially "at home", it seems his every need is fulfilled, without effort on his part. But in due course he will have to face the "no", when his carer apparently abandons him, and he is helpless and alone, at the mercy of another. He may go the way Sartre describes so well in Being and Nothingness and his fiction and plays: in his fear, his response to love being withdrawn may be aggressive (sadistic) or manipulative (masochistic), in an effort to control the situation; and this can become a pattern for the rest of his life. But Macmurray describes another outcome: the caregiver who has failed him may be forgiven, and trust can be restored; then he enters the community of persons - the relationship of "you and I", such as described by Buber, and Levinas, as he makes room for the Other as Other and can discover himself as a separate self: "I" am not "you".

And, yes, as he learns to handle the "no", he will be able to lie to others and to himself – he can be in bad faith just as Sartre describes. But for Sartre we can hardly avoid it, we are always haunted by our tragic isolation, our homelessness, our anguish, and we can only escape it by indulging in bad faith. But just as we can only tell the truth if we could always lie, we can only be in good faith when there is a possibility of bad faith. (Macmurray: "the positive is constituted and sustained by its own negative": the "yes" has meaning because of the "no".)

And so while for Sartre, freedom is a burden; we are "condemned to be free", for Macmurray freedom is what we experience when we are "at home" in a situation/relationship where we need no defenses, where we are not defined by our function in society (Sartre's "serious" world), where Sartre's "Look" cannot immobilize us and we can relax and be ourselves. I can only fully be "I" in relation with a "you" whom I trust and who trusts me. This is a fragile scenario, inherently at risk, but essential to what makes us human beings. This problematic "logic of the personal" infects all our doings: only a human being can be inhumane; only a free being can be enslaved; etc.

"Changing the Channel": Vulnerability and Masculinity in a Men's Prison 04.3 Author(s): Janani Umamaheswar **Department:** Sociology Institution: SCSU

Abstract: Criminological and sociological literature has focused extensively on the "hypermasculine" nature of men's prisons. This research posits that, in a volatile, violent prison environment, incarcerated men feel compelled to embody an exaggerated form of masculinity that emphasizes aggression, toughness, and dominance. Less research, however, has paid attention to the ways in which incarcerated men negotiate feelings of helplessness, inadequacy, and failure in prison, where displays of strength and confidence are often necessary for survival. Drawing on data collected through in-depth interviews with 24 incarcerated men, I discuss alternative markers of masculinity that emerge in the prison

environment. I specifically explore how participants cope with feelings of vulnerability that are triggered by their recognition of their inability to perform adult roles associated with conventional masculinity (partnering, fathering, and working in particular) successfully.

The findings indicate that, contrary to the bulk of literature on prison masculinity, incarcerated men embody multiple models of masculinity. Specifically, the men use more intangible markers of masculinity such as humility, inner resolve, and self-isolation to reconcile their sense of masculinity with their inability to be "adults" in the conventional sense. I argue that the men's ability to embody a "hybrid masculinity" that permits them to draw on conventionally "feminine" traits (such as emotional expressiveness, vulnerability, and helplessness) while still retaining a secure sense of masculinity is constrained by the prison environment. They do, however, actively resist the hyper-masculinity model that prior research has documented by moving (often with a great deal of difficulty) between multiple models of masculinity, switching from displays of vulnerability and helplessness to displays of aggression and dominance. In this way, although they are unable fully to embrace a model of hybrid masculinity, their development of alternative markers of adult masculinity reveals their efforts to challenge the dominant model of hypermasculinity in prison.

O4.4 Comics and Big Data: Using Graphic Narratives to Query and Resist Corporate Data-Gathering

Author(s): Andrew Smyth

Department: English

Institution: SCSU

Abstract: This research presentation examines how comics represent "Big Data" and offer secondary and college students a critical perspective on the endless data-gathering and analytics that structure their lives. The comic genre provides an ideal platform for spirited inquiry into how the endless streams of data that we produce and consume are set up and managed for commercial, political, and military ventures. Using diverse graphic narratives—from Attunity infocomics to graphic journalism, such as *Terms of Service* and *Verax*, to *Batgirl at Burnside*—I reveal corporate selling points for data management as well as the often nefarious ends of data analytics that comics illuminate. Comparisons with more traditional dystopian works, such as Orwell's *1984* and, more recently, Harkaway's *Gnomon*, highlight the way comics bring out both the personalized and depersonalized functions of big data in a complementary fashion to literary texts.

My presentation will combine an analysis of big data in comics with suggestions for instructional approaches, including activities and curriculum designs at the secondary and post-secondary levels.

*This work was supported by a Chinese Ministry of Education Grant, 2018

O4.5 Bullying Among Library Employees

Author(s): Hak Joon Kim Department: Information and Library Science

Institution: SCSU

Abstract: Bullying in the workplace is becoming an increasingly common phenomenon in many work environments, including libraries. However, despite an increase in bullying in library workplaces over the last decade, little research has been done about bullying among library employees. A very limited number of studies in library literature deal with bullying in libraries and most of those are merely descriptive, brief, and some are didactic. With regard to bullying among library employees, thus far little comprehensive empirical research has been done. This is probably because workplace bullying is difficult to examine. The primary purposes of the study were to investigate how often bullying among library employees occurs, what factors significantly affect workplace bullying, and whether bullying policies exist in libraries.

In order to explore bullying among library employees, a questionnaire survey that includes altogether 20 questions was developed. SelectSurvey.NET, an online Web survey system, was used to host the anonymous online survey. A cover letter including an online survey link was sent to library personnel on email distribution lists (e.g., <u>CSL-CONNTECH@LIST.CT.GOV</u> in Connecticut) maintained by state library organizations in the three states that comprise the region of the tri-state: New York, New Jersey, and Connecticut. Altogether 815 library staff members completed the anonymous online survey.

The results of the study clearly showed there were significant reports of bullying among library employees. It affects all kinds of libraries and library personnel and has profound consequences for the persons who experience it and the dynamics of the libraries that they work in. The majority of the respondents reported experiencing health issues from workplace bullying. Bullying among library employees was reported across the states, gender lines, workplace positions, education levels, and years at the library. Despite significant reports of bullying among library employees, not many libraries have their own policies that deal with this workplace challenge.

O4.6 Get Out of Jail Free (Literally): Monopoly Games and WWII Prisoner Escapes Author(s): Terri Toles-Patkin

Department: Communication Institution: ECSU

Abstract: Scholars of play have long recognized that the play frame exists outside of ordinary life. Play stands apart by virtue of its being "not serious" (i.e. noninstrumental in nature) but at the same time absorbing the player utterly and intensely. No material interest or profit accompanies play, which proceeds within its own boundaries of time and space according to rules fixed in advance. Play is a fragile activity; at any time reality may rudely reassert its rights either from outside the game context (through some interruption) or from within (by means of an offense against the rules or a collapse of the play spirit). Indeed, it has been proposed that culture itself evolved from play.

Certainly, combat and fighting have long been called games, metaphorically or not, but these games have deadly real-world consequences for the participants. The nature of play and its role within communication frameworks recalls the very essence of the symbolic interaction approach, that meaning is created in interactions between people and is modified through a process of interpretation.

It also - literally - saved lives during World War II.

It's a story that could have been lifted from the pages of a James Bond novel. British and American intelligence officers helped Allied prisoners of war escape by sneaking maps, tools, and even real money into games in care packages sent to POW camps during WWII. Under the direction of eccentric British officer Clayton Hutton, the escape program was part of a highly-organized program that contributed to perhaps as many as one-third of the escapes from Nazi prison camps.

While many of the attempts to smuggle escape tools into the POW camps were discovered, Hutton's Monopoly games went undetected. Not only did his doctored game boards confound instrumentality and noninstrumentality, the scheme upended the British notion of "fair play" by essentially

cheating at the rules of war. Play has traditionally been conceptualized as standing outside of the serious activity of social life; it has no economic or instrumental value but rather stands as a free activity. And yet, the symbols and meanings encountered in play both reflect and construct those activities seen as more serious.

Using Huizinga's characterization of the play frame (incorporating the elements of freedom, seclusion, out of the ordinary, and ordered) alongside Goffman's conceptualization of impression management and framing, this presentation details the structure of the escape program and examines the nuanced transformation of the play frame within the context of symbolic interaction theory. Where playfulness transforms a utilitarian act into fun, organized games institutionalize and formalize this reconstitution. Hutton's impression management placed the board games clearly within the "leisure" and "charity" frames for the Germans rather than an "escape" or "resistance" frame. What Hutton did, essentially was cheating: his construction of fake charities and transformation of playthings into deadly serious escape kits tipped the play frame on its head. The Nazis never realized they had been played.

* This work was supported by a CSU Research Grant, the Valentine-Cosman Research Fellowship: Identity and Intersectionality in Board Games, The Strong National Museum of Play, 2018, and Research Fellowship: Center for Popular Culture Studies, Bowling Green State University, Bowling Green, Ohio, 2018.

Session 5 – Sciences – Room 309 *Denotes session chair

*05.1~ Human Brain Glioma Tumor Diagnosis using Visible Resonance Raman Spectroscopy

Author(s): Binlin Wu **Department:** Physics

Institution: SCSU

Abstract: Glioma is the most common tumor of the central nervous system (CNS), with a high incidence rate, high recurrence rate, high mortality rate and low cure rate. Even with a combination of comprehensive treatments of surgery, radiotherapy, and chemotherapy, the mortality and disability rate still increase annually. In 2019, nearly 700,000 people are living with a primary brain and CNS tumor in the USA, and approximately 86,000 new cases will be diagnosed, including one quarter as glioma tumors and one third as malignant tumors (GBM-glioma grade IV or astrocytomas). The survival times of patients with high grades of gliomas, including anaplastic astrocytoma (WHO [World Health Organization] grade III) and pleomorphic glioblastoma (WHO grade IV), are only approximately 2 years and 1 year, respectively.

The current brain tumor treatment starts with surgical resection, which is the most critical first step in the comprehensive treatment of glioma. The main goal of the operation is total resection of the tumor, which is then followed by further treatment after surgery. However, an early postoperative MRI review confirmed that only approximately 65% of gliomas can achieve a total resection, because the current microsurgery technology lacks accurate and timely detection. Recent studies have shown that for 75% of tumor resections, there was no clear distinction between higher and lower grade glioma cases. This is the main reason for high rates of recurrence and mortality.

In this study, we used a method based on visible resonance Raman (VRR) spectroscopy to distinguish glioma tumors from normal brain tissues, and identify glioma grades and tumor margin. VRR probes the electronic incoming and outgoing resonances of flavins and other native molecules in pre-resonance regimes. A set of diagnostic spectral biomarker features based on tissue composition changes revealed by VRR are presented. The Raman spectra include molecular vibrational fingerprints of carotenoids, tryptophan, amide I/II/III, proteins, and lipids. These basic in situ spectral biomarkers are used to identify the tissue from the interface between brain cancer and normal tissue and to evaluate glioma grades. Principal component analysis (PCA) and support vector machines (SVMs) are used to reduce dimension, detect spectral features and classify the samples with the results compared with those from traditional histopathology.

This study demonstrates the potential of VRR as a label-free optical molecular histopathology method for boundary line determination in *in-situ* brain surgery.

O5.2 Watching the Early Universe

Author(s): Evan Finch, Stephen Murray & Matthew Andersen Department: Physics Institution: SCSU

Abstract: When the universe was very young, in its first millionth of a second of existence, it was so hot that atoms could not exist. In fact, even the particles inside the atomic nucleus, protons and neutrons, could not exist. At that time, the universe is believed to have existed as a tremendously hot plasma of "quarks" and "gluons". We would like to know about these very early times, but how can we study them? Astronomical observations are amazingly able to capture light that was emitted billions of year ago, but will never be able to come close to seeing light that came from this early plasma. The only way we have access to studying this state is to reproduce it in a laboratory.

The Relativistic Heavy-Ion Collider (RHIC), located at Brookhaven National Lab, accelerates large atomic nuclei to speeds of 99.995% the speed of light and smashes them together in an effort to recreate (on a much smaller scale) the plasma state of the early universe. We have been working as part of the STAR experiment at RHIC, having proposed a set of measurements that we are now working to carry out using data taken at the collider. We believe these measurements will elucidate some basic properties of the physical state of the universe in these very early times, and perhaps help us understand how the universe evolved into the state it is in today.

I'll talk about the of field of high-energy nuclear physics in general. For example: what does it mean to measure temperatures in the range of 1 Trillion degrees? And: what evidence do we have that we may be really reproducing the plasma state of the early universe? And: Why can't astronomy study these very early times? I'll then talk in particular about the measurements that we have been working on at SCSU and how their results may fit into the big picture of how the universe evolved in its earliest moments.

* This work was supported by a CSU Research Grant

O5.3 Synthesis and Reactivity of Diborated Alkenes and Tetraborylated Dienes Bearing Electron Withdrawing Substituents: Studies of the Transition Metal Catalyzed Sonogashira Coupling, Borylation, and Suzuki Coupling Reactions

Author(s): M. J. Gerald Lesley, J. Lipe, J. Cummins, S. McDarby, T. M. Nguyen, A. Agyekum-Yamoah & K. Ozhan Department: Chemistry

Institution: SCSU

Abstract: For several years our group has been involved in the study of novel ligands for the preparation of metal organic frameworks (MOFs). The use of transition metal catalyzed reactions under an inert atmosphere provides a means to prepare multiple examples of organic molecules bearing functional groups suitable for this purpose (e.g., carboxylic acid). The use of catalyzed reactions has the advantage over traditional syntheses due to the fact that a number of different derivatives can be realized via variation in ring substitution patterns. Steps toward the synthesis of these organic molecules and the obstacles encountered in the synthesis will be presented.



* This work was supported by a CSU Research Grant

O5.4 An Experimental Examination of Alliance Formation Dynamics in a Cooperative Fish with Alternative Male Tactics Author(s): Kelly Stiver, Jennifer K. Hellmann & Suzanne H. Alonzo

Department: Psychology

Institution: SCSU, University of Illinois & University of California, Santa Cruz

Abstract: Research on cooperation has traditionally focused on long-term alliances, often where one individual is non-reproductive. Less is known about short-term cooperative interactions between reproductive competitors, particularly about the costs of forming new partnerships and the behavioral dynamics underlying alliance formation. Here, we present preliminary findings from a removal experiment conducted to examine variation in established versus new cooperative relationships between male reproductive competitors in the ocellated wrasse (*Symphodus ocellatus*). In this species, there are three reproductive male phenotypes: Dominant nesting males provide parental care, while satellites and sneakers sneak-spawn with mating nesting males and females. However, nesting and satellite males also engage in short- term cooperative partnerships characterized by nesting male tolerance of the satellite at the nest, and satellite defense against sneaker males. We observed social interactions at the nest, removed the established satellite, and observed nests again after a new satellite had joined. Control nests were also observed along the same time period. We expect new partnerships to differ from established partnerships in the relative focus of each partner on cooperative versus competitive behaviors. Specifically, we expect newly allied satellites to be more cooperative, and nesting males to be more aggressive and less tolerant of cheating, compared to individuals in established partnerships.

* This work was supported by a CSU Research Grant and a grant through the National Science Foundation

O5.5 Plants for Improved Human Health: Anthocyanin Pigmentation Mutants in the Model Legume Plant Medicago Truncatula Author(s): Vijaykumar Veerappan, Roshani Budhathoki & Kaila Robinson Department: Biology

Institution: ECSU

Abstract: Anthocyanins are flavonoid compounds that are responsible for blue, red, and purple colors in fruits and vegetables. Anthocyanin accumulation in the vegetative organs are used as protective mechanisms against environmental stresses such as cold and drought by plants. Recently, anthocyanins are of significant interest because of their potential to be used as natural coloring agents and as therapeutic agents to improve human neurodegenerative diseases including Alzheimer's and Parkinson's. However, plants do not produce adequate quantities for the industrial and pharmaceutical applications. Hence, understanding the genetic, molecular and biochemical mechanisms underlying the accumulation of anthocyanin pigments in plants will enable us to improve crop plants with increased anthocyanin levels, and to metabolically engineer plants and microbes to produce anthocyanins in large quantities. To identify novel genes that control anthocyanin accumulation in plants, we are using a forward genetic approach in the model legume plant *Medicago truncatula*. We have screened Medicago *Tnt1* mutant population and isolated 12 different *Tnt1* insertion mutant lines with deregulated anthocyanin accumulation in vegetative organs. Some of the mutants show loss of anthocyanin pigmentation in leaves, petiole and stem whereas others display increased or enlarged anthocyanin spots in leaves. Furthermore, some mutants also have white/black colored seeds caused by abnormal accumulation of a different flavonoid compound proanthocyanidin. Among all the mutants, some of the mutant phenotypes are novel because there were no previously published reports on these phenotypes. Data on phenotypic characterization and efforts toward identifying the causative genes will be presented. * *This work was supported by a CSU Research Grant*

O5.6 Paleoneurology of the Fossil Reptile Postosuchus kirkpatricki Author(s): Jonathan Weinbaum

Department: Biology

Institution: SCSU

Abstract: Rauisuchidae is a family of extinct archosaurian reptiles ancestral to crocodylians, that went extinct at the end of the Triassic Period (~201 MYA). However, unlike crocodiles, rauisuchids were fully terrestrial, high metabolic hypercarnivores that were later converged upon by large theropod dinosaurs. Endocasts (casts of the brain cavity) from two fossil specimens of *Postosuchus kirkpatricki*, are the first described for a rauisuchid archosaur. The dorsal region of the brain, including the olfactory bulbs and tract were identified, along with much of the midbrain to the medulla oblongata. There are large floccular (auricular) lobes present and the endosseous labyrinth and associated inner ear structures were also identified, including the lagena. The cerebral region is only represented by a dorsal impression on the skull roof due to lack of preservation of the laterosphenoid bones in any specimen of *Postosuchus*. These endocasts indicate a good sense of smell, and increased motor skills, which supports the hypothesis that *Postosuchus* was probably bipedal. Although *Postosuchus* is a stem-crocodylian, the morphology of its brain is more similar to that of large, theropod dinosaurs (e.g. *Allosaurus* and *Tyrannosaurus*) than that of crocodiles. Since there is extreme morphological convergence between large theropods and rauisuchids, this is not surprising. Endocasts have important implications for understanding neuroanatomy and interpreting possible behavior and functional morphology of extinct animals, thus any information that can be attained from such structures is a welcome addition to the context of their function and behavior in life.

*Denotes session chair

*O6.1 Citizenship Programs for Persons with Mental Health and/or Co-occurring Disorders: Mechanisms of Action and Clinical Implications Author(s): Jaak Rakfeldt & Michael Rowe

Department: Sociology

Institution: SCSU & Yale University

Abstract: This paper builds upon previous reports that detailed research on a citizenship-based peer-support and group intervention. The findings from these prior studies suggest that citizenship training leads to better clinical outcomes as well as a better quality of life for persons facing mental illness—including a large majority who had co-occurring substance-use issues—and previous criminal charges. The intervention consisted of a community-oriented group experience that involved citizenship training and peer support to augment participants' standard treatment, which consisted of clinical and jail diversion services. Informed by Vygotsky's "Activity Theory" and Bruner's "Scoffolding," this paper explores the possible mechanisms of action that may have led to those favorable outcomes. It proposes the relevance of specific, evidence-based, transdiagnostic clinical approaches and case management, which may serve to help members of this population to transform their social identities from mental patients to citizens.

* This work was supported by a CSU Research Grant and a grant from Substance Abuse and Mental Health Services Administration (SAMHSA), Washington, D.C.

O6.2 Firearms, Dementia, and the Clinician: A Review of Available Counseling Recommendations

Author(s): Mitchell Doucette, Harrison Dayton, Garry Lapidus, Kevin T. Borrup & Brendan Campbell

Department: Health Sciences

Institution: ECSU & Connecticut Children's Medical Center

Abstract: Roughly 5.7 million Americans currently live with some form of dementia with around 60% of persons with dementia (PWD) owning a firearm. The mental deterioration associated with dementia creates opportunity for firearm abuse, misuse, and violence. Patient and family safety counseling from a health care provider is one potential opportunity for reducing the level of danger. The purpose of this study was to identify the available clinical guidelines for firearm safety for PWD.

We conducted a literature review around firearm safety counseling by health care providers using the databases PubMed and Academic Search Ultimate. Databases were searched using variations of the terms, "Firearms," "Dementia," and "Alzheimer's Disease." Studies were included for review if they provided recommendations for health care provider's counseling around firearm safety for PWD or their families.

Search terms yielded 456 articles, of which, 15 were relevant for inclusion. Guidelines present in the literature ranged from simple screening questions around firearm access to specific recommendations around firearm safety. Screening questions often consisted of assessing firearm prevalence in the home of PWD. Safety recommendations often consisted of behavior change around firearm removal and/or safe firearm storage.

Providing standardized and effective clinical guidelines to health care providers that interact with firearm owning PWD can act as a means to reduce firearm injury and violence. Relevant professional organizations should collaborate to create census, evidence-based guidelines around firearm safety for PWD for health care providers and family members.

O6.3 Public Libraries and the Opioid Crisis

Author(s): Brian Real & Gayle Bogel Department: Information and Library Science Institution: SCSU

Abstract: Drug overdoses killed more than 63,000 Americans in 2016, and more than two-thirds of these fatalities involved an opioid. This crisis has impacted all aspects of communities, but public libraries have been particularly affected. As a place that is open to everyone, without any cost to patrons or a demand that they have a specific purpose for being there, libraries are a popular destination for at-risk individuals who have limited resources. This has resulted in drug usage on library premises and patron overdoses becoming increasing concerns. Headlines in major national newspapers include: "Once it was overdue books. Now librarians fight overdoses" and "Drug tourists' keep overdosing at this library. Here's how employees are saving their lives." Many librarians have now been trained to administer the opioid overdose reversing drug Naloxone, commonly known by the brand name Narcan.

Library directors and other employees have faced difficult questions when deciding how to deal with these challenges: To what extent should libraries address the opioid crisis in their buildings and their communities, especially when this falls outside of the scope of traditional library services? For librarians who choose or are forced to take action, how do they keep this from interfering with activities such as circulating materials, providing computer access, and enhancing youth literacy through storytime sessions and other events? How can management protect public and staff perceptions of libraries as centers of learning and community growth when faced with contrasting headlines about illicit drug use and overdoses on their premises? Some libraries have crafted strategies for this, but others will need to develop plans of action as the opioid crisis has increasing impacts on their communities.

The purpose of this research process is to document the decision-making process that led public libraries to create plans to face the challenges of the opioid crisis. The authors interviewed representatives from seven libraries or library systems that are at the advanced stages of developing policies and staff competencies as a direct response to a high level of opioid usage on their premises or in their communities. One of the most significant purposes of this research is to document how the opioid crisis has impacted these libraries and explore how they have chosen (or not chosen) to provide Naloxone reversal training for their staff. In the second article, the authors document how these libraries are attempting to educate their communities on the opioid crisis, ways they have partnered with community organizations to help opioid dependent persons, and various facilities and security concerns for their buildings. Although it is impossible to represent the full diversity of library actions in response to the opioid crisis, the authors hope that this research will provide information to assist librarians as they attempt to understand the nature of the problem and consider responses that meet the needs of their own communities.

O6.4 Neural Underspinnigs of Sensory Motor Integration in People who Stutter Author(s): Sujini Ramachandar Department: Communication Disorders Institution: SCSU

Abstract: Heterogeneity in neural anomalies associated with stuttering has led researchers to postulate that stuttering results from a network default. Specifically, widespread differences in white matter integrity surrounding areas involved in sensorimotor integration have been reported in people who stutter. This study examined white matter connectivity between sensorimotor areas involved in speech production between people who stutter using High Definition Fiber Tracking (HDFT). HDFT is an innovative pipeline approach where fibers are segmented based on high definition dMRI scans. White matter connectivity measures included Fractional Anisotropy (FA), Quantitative Anisotropy (QA), and white matter volume. FA and QA are indirect measures of axonal myelination, which is indicative of the speed of information transmission between brain regions. Tract volume measure the amount of information transferred between neural regions. Results revealed significantly decreased FA and tract volume in tracts connecting left Sylvian parietal temporal region (Spt) to both rolandic operculum (RO) and supramarginal gyrus (SMG), and left RO to premotor in people who stutter. Laterality index indicated left hemisphere bias in tract volume of Spt-PM in people who stutter and right bias for Spt-RO and inferior frontal Gryus (IFG)-SMG in people who do not stutter. Significant negative correlations were noted between stuttering severity and QA of tracts connecting the left IFG to HG and SMG, and left RO to Spt. A follow-up magnetoencephalography (MEG) study revealed moderately decreased beta response in left Spt and moderately increased beta response in left RO indicating a desynchronization in the left hemisphere sensorimotor regions. Results of these studies indicate that people who stutter showed reduced white matter volume and FA in tracts connecting sensory (auditory and somatosensory) regions and a desynchronization in the neural oscillations between these regions.

* This work was supported by the National Stuttering Foundation

O6.5 An Analysis of Field Tarp Application and Associated Risks in Minor League Baseball Author(s): Ray Cotrufo & Jordan Kobritz Department: Recreation, Tourism & Sport Management Institution: SCSU & SUNY Courtland

Abstract: In a sport such as baseball, in which weather and field conditions can determine whether or not the game can be played, protecting the playing surface with a tarp to avoid the field from becoming unplayable is critical. Failing to apply the tarp in time may result in a variety of negative outcomes, from field damage to game cancellation (Dean, 2007).

However, this is just the start to the challenges involved with applying a large field tarp. "Tarp pulls" are often sparked by impending severe weather that provides little advance warning. In areas where afternoon storms occur regularly during the summer months, the frequency and unpredictability of tarp pulls are increased. This, combined with the prohibitive cost of employing a full-time tarp crew for most Minor League Baseball (MiLB) teams, tarp pulls are usually conducted by front office staff and interns, many of whom receive little to no training.

This problem is compounded by the very nature of deploying a field tarp, which can be very dangerous (Zwaska, 2015). Field tarps weigh upwards of 2,000 lbs, are difficult to maneuver, and can take up to 16 people to apply properly depending upon the conditions (Dean, 2007). Because impending rain immediately prior or during an event can risk cancellation, an 'all hands on deck' protocol is employed to cover the field quickly.

This scenario can result in undermanned tarp pulls, producing a more difficult application and increased potential for field damage and injuries to staff. At times, people can become trapped under the tarp, dragged, wrapped up in it, or pulled up into the air by wind gusts. Therefore, it is vital that tarp crews be comprised of trained and experienced staff (Zwaska, 2015; Kurcab, n.d.) to be able to avoid these risks. Since most tarp crews are under-trained and are called into action rapidly, however, this poses a potential legal liability for MiLB clubs.

As a result of these concerns, a pilot study was created to begin investigation of this problem. A 24-item survey addressing tarp pull procedures and outcomes was created and distributed to MiLB club executives from teams representing a variety of levels (Rookie-AAA). Data from 36 respondents were analyzed using inter-item correlations and one-way ANOVA with tarp-related injury frequency as the dependent variable. Results demonstrated a moderate negative correlation between the frequency of staff training and the incidence of injury resulting from tarp pulls (r=-0.346), as well as a significant relationship between these two factors (F=4.63, p=0.39). These preliminary results indicate that MiLB clubs that implement effective training and re-training procedures for staff can reduce the potential for tarp-related injury. A future iteration of this study would expand the investigation to determine the full extent of this problem and to identify additional approaches that would reduce the risk of tarp pull injuries for MiLB clubs and their staff.

O6.6 Combating the Opioid Epidemic with Vaccines

Author(s): Candy Hwang

Department: Chemistry

Institution: SCSU

Abstract: Abuse of prescription opioids is a growing public health crisis in the United States, with overdose deaths increasing considerably over the past 15 years. According to the 2016 National Survey on Drug Use and Health, 11.8 million Americans misused or abused opioids in the last year. Because of this ongoing trend, new therapies for treating opioid substance use disorder are urgently needed. One proposed area of research is the development of anti-opioid conjugate vaccines, as a means of mitigating part of the opioid epidemic and providing long-term protection against these drugs. A conjugate vaccine is primarily composed of three components: a synthetic opioid mimic, an immunogenic carrier protein to stimulate an immune response, and an adjuvant to further boost and elongate the response. These vaccines stimulate the immune system to produce high-affinity antibodies specifically against the targeted opioid. Then, upon exposure to the target drug, antibodies in the blood trap the opioid, and the resulting antibody-drug complex becomes too large to pass the blood brain barrier and inhibit the ability of the drug to mediate their effects on the central nervous system. We recently reported a proof-of-concept vaccine to combat against heroin contaminated with fentanyl to address the rise in opioid overdose. We anticipate future studies will involve more advanced non-human primate models, which will elucidate the true potential of these opioid vaccines to move beyond the preclinical space.

*This work was supported by National Institutes of Health Grants: UH3 DA041146, P30 DA033934, R01 DA035281, and R01 DA024705

*O7.1 A Cancer Publication Portal and Citation Network Analysis Tool Author(s): Garrett Dancik Department: Computer Science Institution: ECSU

Abstract: The volume of published cancer research necessitates the development of text mining tools to help researchers find and summarize articles efficiently, and to identify the important articles in the field. Here I describe two tools developed in my bioinformatics laboratory which are designed to ease the task of finding relevant and important cancer publications. The *Cancer Publication Portal (CPP)* contains information for ~1.1 million publications and integrates data from several sources to allow a user to search and summarize cancer literature based on a gene of interest. *CPP* summarizes articles based on cancer types, therapeutic agents, mutations, and other cancer-related terms that are mentioned in the title or abstract of each article. The tool makes it easy to determine, for example, for a researcher interested in the gene *BRCA1* to determine the frequency of publications across a variety of cancer types, or to quickly find the specific *BRCA1* mutations that occur in breast cancer. Once articles of interest have been identified, the article IDs can be exported and the abstracts viewed in other databases such as PubTator. In addition, a companion *citation collection tool (shinyCTT)* has been created that allows a user to quickly identify article citations from PubMed Central (PMC). This tool generates an "edge list" of citations and can be imported into network analysis tools such as Gephi for visualization and analysis. We use *CPP*, *shinyCTT*, and Gephi to generate and analyze the citation network for *BRCA1*, a gene associated with breast and ovarian cancer. Interestingly, the citation analysis finds that breast and ovarian cancer articles mentioning *BRCA1* are largely independent (researchers publish articles studying one cancer but not the other), and that in some cases, measures other than number of citations may be more informative for identifying important articles.

* This work was supported by a CSU Research Grant

O7.2 Does Heavy Metal Contamination Affect Agave Fluid Products and Create Potential Health Problems?

Author(s): James Kearns Department: Chemistry

Institution: SCSU

Abstract: The grave health implications of food contamination are universally alarming. The scientific community must respond to this, giving answers, direction and assurance. Agave fluid, an emerging product alternate sweetener, requires study. There has been no attention paid to likely contamination by the toxic heavy metals commonly present in the volcanic soil and water where agave grows. Similarly, there seems to be little information on the possible nutritive mineral value of the fluid. By examining soil in which specific agave plants grow, and the fluids which these plants produce, this proposed research about the product may offer both cautionary and favorable information of significant, international interest.

* This work was supported by a CSU Research Grant

O7.3 Extracellular Vesicles Secreted by Glioblastoma Multiforme DBTRG-05MG Contain Proteins Involved in Tumor Invasion and Progression Author(s): Sarah Crawford, Alexander Byer-Alcorace & Brielle Hayward Piatkovski Department: Biology

Institution: SCSU

Abstract: According to the World Health Organization (WHO), Astrocytoma Grade IV, otherwise known as Glioblastoma Multiforme (GBM), is the most commonly diagnosed adult malignant primary brain tumor, with a 5-year survival rate of only 5.5% and a median survival time estimated between 12 to 14 months from the time of diagnosis. Computerized tomography (CT) and magnetic resonance imaging (MRI)) are currently the primary diagnostic tools for GBM, which is usually detected at advanced stages of disease when surgery, chemotherapy and radiotherapy are unlikely to result in complete disease remission. Research suggests that vesicles produced by brain tumors may potentially serve as biomarkers and/or therapeutic vectors for drug delivery to provide a noninvasive approach to both the diagnosis and treatment of GBM, and, if successful, might improve GBM survival rates.

Previous research from our laboratory provided evidence that brain tumor associated vesicles may play an important role in the cell-to-cell associations that mediate tumor formation, an activity that is consistently displayed by tumor cells, both *in vitro* and in organoid cultures of patient tumors. The current study involved the isolation and purification of tumor secreted vesicles from glioblastoma tumor cells in culture. Electron microscopy permitted the structural and quantitative analysis of these tumor derived vesicles. Moreover, Western Blot (analysis of their protein content by immunolabeling demonstrated that the vesicles produced by this brain tumor cell line contain high levels of integrin α v, a protein involved in brain tumor invasion and spread. The secretion of brain tumor associated vesicles containing proteins involved in tumor invasion and spread may represent yet another important mechanism of brain tumor progression. In this context, tumor associated vesicles may serve as an intricate intercellular communication platform for coordinating homeostasis within the tumor microenvironment. This paper was presented at the 6th Annual Global Cancer Conference in Vienna in November 2018 and the manuscript is currently in preparation for journal publication.

O7.4 Pelvic and Core Strength Training Improves Pelvic Posture, Hamstrings-to-Quadriceps Ratio, and Vertical Jump Performance in Males and Females

Author(s): Chee-Hoi Leong & Cassandra York

Department: Physical Education & Human Performance

Institution: CCSU

Abstract: Poor pelvic posture demonstrated through anterior pelvic tilt (APT) have been known to produce musculoskeletal imbalances involving weakness of the abdominal and pelvic musculature. While stretching and massage techniques have been reported to be effective in alleviating APT, it remains unclear if similar improvements can be elicited by pelvic and core strength training. PURPOSE: To examine the effect of an 8-week pelvic and core strengthening program on APT, hamstrings-to-quadriceps (H:Q) strength ratio, and vertical jump performance in healthy individuals. METHODS: Ten healthy males (age= 26 ± 12 years; mass= 87 ± 14 kg; height= 178 ± 8 cm) and nine healthy females (age= 22 ± 4 years; mass= 70 ± 14 kg; height= 165 ± 8 cm) performed resistance training (2×/week; 40-45 mins) involving a combination of hip extensors and abdominal strengthening exercises for 8 weeks. APT (°), vertical jump power (W), vertical jump height (m), and H:Q ratio at 60, 180, and 300 °/s were

assessed prior to and following the resistance training program. A 2 (sex) \times 2 (time) mixed factorial ANOVA were used to determine differences in APT, vertical jump power, vertical jump height, and H:Q ratio at 60, 180, and 300 °/s. If the ANOVA revealed a significant main effect and/or interaction effect, then subsequent *post hoc* pair-wise comparisons (Bonferroni correction for multiple comparisons) were used to determine where differences occurred. RESULTS: APT, vertical jump power, vertical jump height, and H:Q ratio at 60 and 180 °/s, were significantly improved following 8 weeks of resistance training (all *Ps*<0.05; Table 1). Males produced significantly more vertical jump power, vertical jump height, and H:Q ratios (all *Ps*<0.05). There was not statistically significant sex \times time interaction on APT, vertical jump power, vertical jump height, and H:Q ratios (all *Ps* > 0.05). CONCLUSION: 8 weeks of resistance training emphasizing pelvic and core strengthening was effective in reducing APT, improving vertical jump performance and H:Q ratio in healthy males and females. To the best of our knowledge, this is the first report of an improvement in pelvic posture following a pelvic and core strengthening program. Our findings have potential implications for clinicians prescribing resistance training equilibrium in healthy individuals.

* This work was supported by a CSU Research Grant

O7.5 An Exploration of Food Insecurity Among Students at a Mid-size Public University in New England

Author(s): Victoria Zigmont & Peggy Gallup

Department: Public Health

Institution: SCSU

Abstract: Estimates of food insecurity among U.S. college students range from 14.1% to 59% depending on the institution type. College students who are experiencing food insecurity have compromised general and mental health, less academic success, and a reduced chance of timely graduation. The purpose of this study is to explore the prevalence of food insecurity, students' barriers and coping strategies, and the impact of food insecurity on students' health at a mid-sized, public university in New England.

This presentation will include results from a campus-wide survey using stratified sampling among undergraduate students to collect data on student food insecurity, health behaviors and barriers to food security. Results will also be shared from interviews with students to better understand student's experiences with food insecurity.

A total of 1,008 surveys were collected from undergraduate students. Using a modified version of the USDA's Food Insecurity Screener, students who answered affirmatively to two or more questions were categorized as having low or very low food security. The survey findings showed that 27% of students at this university were food insecure based upon the question "in the last year were you ever hungry but didn't eat because you didn't have enough money for food?" Overall, 35% of students reported that food didn't last and there was no more money to get more. Food insecure students had lower self-rated health levels (p<0.001) and were more likely to have depression diagnoses (22% vs. 14%, p=0.002). Food insecure students were worse off in terms of health behaviors than food secure students: they were less likely to between 3 and 5 servings of fruits and vegetables per day (17% vs. 24%, p=0.005), and less likely to get adequate sleep (30% vs. 51%, p<0.001). Food insecure students were more likely to have the following barriers: the high price of healthy foods (84% vs. 38%, p<0.01), and lack of transportation to the store. As students experienced more barriers, they were more likely to report being food insecure.

A total of 17 interviews were conducted with undergraduate students. Risk factors for food insecurity included financial, time and lack of resources/ skills to provide for healthy eating. Additionally, while students reported negative impacts on their academic achievement, their coping mechanisms often prioritized cost and convenience over food quality, possibly exacerbating their situations.

The information gathered on students' health conditions, health behaviors and barriers that contribute to food insecurity will add to the currently sparse knowledge base on food insecurity among college students across the United States. This information will be used to inform resource development and programming focused on food insecurity prevention for college students. **This work was supported by a CSU Research Grant and a GSGA provided through SCSU*

O7.6 The Legacy of King Philip's War: Historical Trauma & Local Activism

Author(s): Ashley Bissonnette

Department: Department of Health Sciences

Institution: ECSU

Abstract: King Philip's War (1675-1678) was the most devastating conflict in American history proportional to the population, and forever changed the cultural landscape of New England. Thousands of Native people died from disease, starvation, and battlefield deaths, and the survivors abandoned the region or were placed on reservations that were a fraction of their former homelands. The Battle of Turner's Falls (May 19, 1676) was the most decisive battle of King Philip's War, and it was the beginning of a process that resulted in the dissolution and piecemeal defeat of tribes in New England. The battlefield project is unique in that its success has been the result of collaborative work between Indigenous and Euro-American representatives whose ancestors fought in the battle, town representatives, and academics. This presentation will address health disparities that are rooted in this country's first wars against Indigenous peoples, the contributions of Indigenous and Euro-American perspectives that provide significant insights into creating a collective history, and the importance of cultural resources in planning public programs. **This work was supported by the Department of the Interior, National Park Service, American Battlefield Protection Program and supporters, including the Town of Montage, MA and the University of Connecticut*

Session 8 – Artist Talks & Visual Art – Room 326

*Denotes session chair

*O8.1 Making Musical Connections on an iPad: Going Beyond the Single App or Single iPad

Author(s): Charles Menoche

Department: Music

Institution: CCSU

Abstract: Thanks to the support of a CSU–AAUP Faculty Research Grant, I was able to form the CCSU iPad Ensemble in Fall 2014. Although I had been using iPads since the first generation, I knew that I had much to learn about how best to use iPads as a musical instrument and offer our students a unique chamber ensemble experience. Although iPads have been around for some 10 years now, many continue to use single iOS applications at a time on a single iPad. Directing our iPad ensemble, writing compositions for it, and searching for new ideas and new teaching opportunities, I have learned quite a bit about the iPad a very powerful computer music performance tool.

In 2017, the CCSU iPad ensemble performed at the CSCU Faculty Research & Creativity Activity Conference. Over the years, audience members have been impressed by and intrigued to learn more about the many ways that the CCSU iPad Ensemble makes music. Many have been surprised to learn that we are frequently running multiple applications at the same time.

In this presentation, I will share and demonstrate a few ways that one can go beyond a one music app and one iPad approach, suggesting tools for new composition, improvisation, and performance projects. Drawing upon experiences directing student iPad ensembles and teaching iPads in music technology classes, I will identify a few of the most common limitations encountered so far and what software and hardware solutions have proven to be the most effective.

Challenges raised and solutions found will include the following: How to have one app's MIDI or audio output be routed into another How to record the audio output of an app directly into another app How to have two music apps running in Split View How to record from a high-quality microphone directly into an iPad How to use an external MIDI keyboard/controller in iPad performances How to have pattern/loop/beat apps synchronize between iPads thus sharing a common tempo How to use images, cameras, video, and motion to influence music and sound playback.

Attendees will leave with a list of suggested new apps and affordable devices that can be used to expand the ways that one can connect and communicate MIDI, audio, and music information between apps and devices. Although this research was drawn from music ensemble experiences, many of these tools can be useful for other applications or just for the casual musician looking for new way to explore music making. **This work was supported by a CSU Research Grant*

O8.2 Graffiti as Gift: Street Art's Conceptual Emergence Author(s): Lindsey Mancini Department: Art and Art History

Institution: ECSU

Abstract: Drawing primarily on contemporary public discourse, this article aims to identify a divergence between graffiti and street art, and to establish street art as an independent art movement, the examples of which can be identified by an artist's desire to create a work that offers value—a metric each viewer is invited to assess for themselves. While graffiti and street art are by no means mutually exclusive, street art fuses graffiti's subversive reclamation of space with populist political leanings and the art historically-informed theoretical frameworks established by the Situationists and Dadaism. Based on two founding principles: community and ephemerality, street art is an attempt to create a space for visual expression outside of existing power structures, weaving it into the fabric of people's daily lives.

O8.3 Reading Color: Type in and on Color

Author(s): Jeanne Criscola Department: Design, Graphic & Information Institution: CCSU

Abstract: While we learn about color experientially from birth, later we are taught its properties with abbreviated diagrams in the shape of a pie or the form of a rainbow. Similar types of examples are used to teach students of communication design the rules and guidelines associated with typographic practice. Sometimes these examples go further than simple black letterforms on a white background and employ color to the letters and the ground to illustrate effects color has in type. But in actuality these empirical methods, devoid of a situational context, fall short of their intention to inform how the myriad configurations, sizes, and styles of type—and the infinite spectrums of color—interact visually.

My pursuit began in 2004 with a search for a Typography textbook for a class I was teaching in Media Design. I first considered the books in my library. I searched for chapters in graphic design books and in annuals of typography competitions I had. An internet search for typography with "look inside" features revealed new books on the subject. I could even find older editions of books as pdfs. But none were quite right. I needed a book that taught typography and color in context and in situ. Such a book did not exist. Perhaps it's because digital typography is not all that old and still finds relevance to production methods now 30 years old and older. Many of the current books include references to the historical technological transitions from hot type that went obsolete in the 1950's, to cold type that meet its demise around 1985 with desktop publishing.

In 2009, I wrote a proposal for the book and submitted it a publisher and then put it aside. But in my studio and in my teaching, I continued to explore these ideas in an environment that was rapidly changing due to technological innovations and more varied and profuse media. I realized that these ideas were more important than ever and so I revisited and expanded my book concept.

The book is primarily for students of graphic design and focuses on color as it is applied to typography in message construction by mixing practical know-how and theory with photographic examples in print, screen and dimensional forms. Each example will be examined for its typefaces, style, orientation, and alignment—in and on color. It will be a hybrid in content and context—part reference, part inspiration— where type and color are bridged and evidenced in all media, with examples of alphanumeric characters in many languages for a more holistic approach to a global audience of designers.

As information becomes more ubiquitous, it is being delivered in an ever-growing variety of media types: from traditional print on a range of substrates, to screens for computing and presentation, and in our environment where any surface can deliver information and experience, from wristwatches to architecture the scale of Times Square. Regardless, designers, media producers, and culture makers of all ages, cultures, and demographics use the same hardware—type and color.

*This work was supported by a CSU Research Grant

O8.4 Mirrors and Windows Author(s): Thuan Vu Department: Art Institution: SCSU

Abstract: The issue of self-identity has been at the core of my work ever since I began painting and drawing. I am a Vietnamese refugee who was transplanted to New Orleans when I was two years old due to the War. As a gay Vietnamese-American male, my paintings explore the many dualities that I inhabit—east vs. west, national vs. individual identity, tradition vs. modernity---and how they can lead to a sense of displacement.

With the support of CSU Research Grant funding, I was able to travel to Vietnam for the first time in 2003 to experience my homeland and create travel studies. Subsequently, my research has been focused on enlarging and extrapolating on the many themes that I found during this trip and within these travel studies.

My presentation will focus on the development of these works, tracing how my black and white figurative works developed into abstractions of nature as a metaphor for the refugee experience. *This work was supported by a CSU Research Grant

O8.5 The Good, Bad and the Ugly

Author(s): Robert Greenr

Department: Art & Art History **Institution:** ECSU

Abstract: This presentation is a narrative of the processes, inspiration and execution of my work, including outdoor site-specific installation as well as indoor works. It speaks of the highlights of my career as an artist and educator as well as the struggles. It touches upon loss and mental illness within my family that ultimately influenced my artistic path. I consider the talk to be somewhat of a tribute to my late father as his disease (ALS) inspired me to research the condition and its effects on the body. I also talk about my sister's struggle with OCD (Obsessive Compulsive Disorder) and include my research into this condition. Although both of these factors are unfortunate, they play a major role in how and why I work the way I do. This talk also uses comedy as it shows the mishaps and mistakes I have made along the way while exploring new concepts and techniques in sculpture.

O8.6 The Story Behind the Design

Author(s): Alex Girard

Department: Art

Institution: SCSU

Abstract: Designers do not sign their work because their final product often represents an external message rather than personal expression. However, the personal experience and perspective of a designer shapes all aspects of the design process from inception to completion. This presentation will serve as a narrative, describing the untold story behind the designs with a focus on projects with unforeseen obstacles. Further, the presentation will discuss how these messy projects shape my perspective as a design educator.

Adanti Student Center Theater

F1.1 The Equatorial Calms

Author(s): Derek Taylor

Run time: 3 min 37 sec Department: Communication, Media & Screen Studies Institution: SCSU

Abstract: *The Equatorial Calms* is a combination of original and found 16mm film footage, transformed into a short experimental film about the phenomenon known as the Inter-Tropical Convergence Zone near the equator where the Earth's trade winds converge. The dichotomy of varying weather patterns in this zone (from intense storms to scarcely any surface wind) produces a variety of irregular experiences for mariners on ships, particularly sailing ships. Oftentimes, these seafarers are stuck, or contained, within this area for many days or weeks. This film takes a frame intensive look at this containment in its formal attributes and stream of images. The horizon is almost always visible within the frame, a constant sense of direction and navigation, but vessels are trapped within the confines of this zone, in sprocket holes and splices, and then found drifting perilously on the edge of the photographic frame; the turbulence on the filmstrip parallels the unrest of the region. The soundtrack is a cyclical flow of atmospheric, pulsating resonance indicative of the movement, and impediment to movement, within this geographical area.

F1.2 Invasive Species

Author(s): Jeremy Chandler, Shawn Cheatham & Mark Cannariato Run time: 40 min 2 sec Department: Art

Institution: SCSU

Abstract: The Florida landscape comes alive in this experimental documentary film created by Shawn Cheatham and Jeremy Chandler. Striking cinematography and a haunting original score guide the viewer through a contemplative glimpse into the state's ongoing struggle with the Burmese Python. Told from the perspective of "the local", *Invasive Species* explores how pythons were artificially thrust onto this fragile ecosystem and continue to challenge the ethical, social, and psychological paradigms of a people learning to live side-by-side with a new predator. The landscape is presented as a dangerous, wild space that can harbor and effectively conceal an entire breeding population of apex predators, as the python invasion becomes a vehicle to poetically meditate on metaphysical concepts of place, masculinity, and the indigenous. **This work was supported by a CSU Research Grant*

F1.3 All We Love We Leave Behind

Author(s): Jason Forsyth Run time: 6 min 42 sec Department: Communication, Media & Screen Studies Institution: SCSU Abstract: A loveless murder is uncovered through the eyes of an alcohol dependent man, who loses his companion

F1.4 Journey to the Bottom of the n-Word

Author(s): Frank Harris III Run time: 52 min 55 sec Department: Journalism Institution: SCSU

Abstract: Journalism professor, news columnist and filmmaker Frank Harris III set out on a journey across America to get to the bottom of the n-word. Combining interviews with diverse Americans, research through hundreds of news archives and surveys of present-day news media — *Journey to the Bottom of the n-Word* takes viewers on an engaging, informative, provocative, unforgettable journey that fosters discussion about the word that persistently rattles the chain from our past to our present.

*This work was supported by a CSU Research Grant

Adanti Student Center 3rd Floor Hallway

48-Hour Post-Discharge Phone Call for Heart Failure Patients: An Evidence-Based Quality Improvement Project P1 Author(s): Judy Ruggiri

Department: Nursing

Institution: SCSU

Abstract: Heart Failure (HF) is the leading cause of unplanned readmissions within 30-days of disharge resulting in large annual costs to hospitals. The American Heart Association Get with the Guidelines ® Heart Failure recommends early follow-up post-discharge phone calls as an effective care transition intervention for reducing readmissions.

Objectives

- 1. Implement 48-hour post-discharge scripted phone call for HF patients discharged to home.
- 2. Evaluate RN use of 48-hour post-discharge scripted phone call.

Methods The Model for Improvement was used to guide the implementation of 48-hour post-discharge scripted phone calls. RN calls and use of discharge call script was verified by electronic record review. Project was considered an improvement if the number of monthly calls was greater than 75% and documented RN use of the phone call script occurred for at least 75% of eligible cases.

Results Table 1 displays the pre-and-post-implementation phone call data. There was a 41% increase in the number of calls made and the script was used for 35% of calls over the 3-months. Calls made the first and third months exceeded 75% (n=10, n=8; respectively) and reached 66% (n=8) in second month. The observed unplanned readmission rate for patients with HF slightly reduced over the 3-months (11.43%). Table 1

Pre-and Post-Implementation Call Data for Patients with Heart Failure Discharge to Home

	Patients with HF Discharge to Home	Patients Called	Calls Made with Script	Unplanned Readmission within 30-Days
	n	n(%)	n(%)	n(%)
Pre-Implementation April-June 2017	45	15(33)	0	5(11.11)
Post-Implementation July-September 2017	35	26(74)	9(35)	4(11.43)
July-September 2017 HF, heart failure		. ,		_

Conclusion We implemented the 48-hour post-discharge scripted phone call but the process was not consistent. Next steps include increasing adherence to RN use of scripted call for at least 75% of patients discharged to home with HF and then we will evaluate the effect of the process on patient outcomes like post-discharge knowledge related to medication, diet, and adherence to general HF care.

P2 The Use of Vending Machines Among Freshman and Sophomore Students at a Public University in New England

Author(s): Ermonda Gjoni

Department: Public Health

Institution: SCSU

Abstract: The transition of students from life at home to college is a challenging journey involving environmental, physical, and social adjustments which significantly impact dietary choices. Vending machines can be a contributing factor to unhealthy food environments, often offering limited healthy snack choices, making snacks high in energy and low in nutrients easily available. This study determined students frequencies of vending machine purchases, factors that influence purchasing behaviors and interest in the availability of healthy choice indication at the point of purchase.

Methods: Randomly selected undergraduate students were invited to participate in a cross-sectional online survey at a public university (N=102).

Results: More than half of students used vending machines 1-2 times a week (51.7%). The majority of students (75%) would prefer healthy choice labeling of vending machine foods, and 64.6% said the availability of food labels would positively impact their purchases. Students rated cost, hunger and convenience as the top three reasons for vending machine purchases. Survey respondents would like to have healthier options available including fresh fruit, vegetables, hummus, yogurt, gluten and dairy free options, as well as less sugary snacks.

Discussion: Students are interested in improving the dietary quality of vending machine snacks and prefer labeling healthy snacks to support healthier purchases. Individuals responsible for planning the campus vending options should include students in decision making to support their nutrition, health and future food preferences. Fresh produce and other healthy foods are highly desired by college students, but students may not eat healthy because access and cost barriers.

Creation of a Gamefish Occurrence Dataset from Public-focused Informational Newsletters P3

Author(s): Rebecca Hedreen & Sean Grace Department: Library Services & Biology

Institution: SCSU

Abstract: Fish and wildlife agencies produce a bounty of information aimed at the public. Under the right circumstances, that information can be compiled into scientifically useful data to complement full scientific studies. This poster describes some preliminary results from a project to compile mentions of gamefish species, locations, and sizes throughout the Long Island Sound and surrounding waters from the Weekly Fishing Report (2006, 2008-2018) and the Trophy Fish Report (2009-2017), both produced by the Connecticut Dept. of Energy and Environmental Protection. The dataset consists of more than 20,000 entries from the reports collected weekly by DEEP employees from tackle shops and charter companies. The current portion of the analysis is to determine the characteristics of the dataset, such as entry types, species counts, and some general trends.

Distinguish Chromophobe Renal Cell Carcinoma and Renal Oncocytoma Based on Analysis of Multiphoton Microscopic Images using P4 Convolutional Neural Network

Author(s): Binlin Wu, Michael Icaza, Nicolas Judd, Manu Jain & Sushmita Mukherjee **Department:** Physics

Institution: SCSU, CSCU Center for Nanotechnology, Memorial Sloan Kettering Cancer Center, Weill Cornell Medical College

Abstract: Chromophobe renal cell carcinoma (chRCC) and oncocytoma are two types of kidney tumors which are at times difficult to distinguish. While oncocytoma is a benign tumor, chRCC is malignant with a potential for metastasis. Distinguishing the two types is important for the management of patients. Multiphoton microscopy (MPM) has been used to image and distinguish them. MPM is a novel optical imaging technique, which can produce high-resolution "histology-quality" images rapidly without the need for any tissue processing or exogenous dyes. MPM is especially useful in medical imaging because it can use low-energy near-infrared (NIR) light for excitation and can be used as a labelfree method to measure autofluorescence. It can penetrate deeper and cause less photodamage compared to shorter-wavelength light excitation.

Using MPM, we collected images from 25 unstained deparaffinized formalin-fixed kidney tissue sections of chRCC (13 cases) and oncocytoma (12 cases) with a 780-nm femtosecond pulsed laser beam for excitation. The tissue specimens were all de-identified. Each specimen was imaged at multiple (4-5) locations. A stack image with 4 - 10 layers was acquired from each location. Each layer is an image with 800 x 800 pixels and 4 channels. The separation between the layers was 1µm. Each pixel size was 0.318 µm x 0.318 µm. The four channels cover the emission light including second harmonic generation (SHG) and autofluorescence signal with wavelengths between 390 nm and 650 nm. More specifically, the four channels include SHG (360 - 400 nm), short-wavelength autofluorescence (420 - 490 nm; SWAF), mid-wavelength autofluorescence (500 - 550 nm; MWAF) and long-wavelength autofluorescence (550 - 650 nm; LWAF).

SHG channel signal is mainly due to collagen. SWAF channel is dominated by NAD(P)H and lipofuscin. MWAF and LWAF are mainly contributed by FAD, NAD(P)H and lipofuscin etc. In a previous study, morphometric analysis based on simple image processing techniques has been used to analyze SWAF and LWAF channels of the images, and achieved over 80% accuracy. The signal used to classify the images were autofluorescence from the key tissue intrinsic fluorophores such as NAD(P)H and FAD. The classification was performed using support vector machine (SVM).

Studies have shown that collagen structure of the extra cellular matrix changes in the presence of cancerous tumors. Specifically, the extra cellular matrix, of which collagen is a major structural component, becomes deregulated and can itself encourage metastasis. Collagen matrix can be detected using the second-harmonic generation (SHG) signal in MPM. Therefore, we carried out a pilot study and attempted to distinguish the two types of tumors merely based on the morphological features of the collagen matrix using a convolutional neural network (CNN). However, only 68.7% accuracy was achieved.

A CNN is a particular type of artificial neural network (ANN) and an essential tool for deep learning. CNNs are specifically suitable to detect features in the images, and commonly used in the field of computer vision. CNNs are well suited to handle MPM images because of its ability to identify features in complicated multi-channel volumetric image data. In this study, we investigate a CNN method to analyze the raw MPM images with all four channels and multi-layer volumetric data as an attempt to develop a unified technique with minimum preprocessing. We show that our model can distinguish between oncocytoma and chRCC with 94% AUROC and 88% accuracy along with 100% sensitivity and 75% specificity. We also present the ability of the model to localize the cause of positive classifications (chRCC) to specific regions of the scan, which can provide additional feedback to better understand the reason for the classification.

*This work was supported by a SCSU Faculty Creative Activity Research Grant

Quantitative Grading of Bladder Cancer by Morphometric Analysis of H&E Images and Machine Learning P5 Author(s): Binlin Wu, Samantha V. Nebylitsa, Sushmita Mukherjee & Manu Jain

Department: Physics

Institution: SCSU, CSCU Center for Nanotechnology, Bronx High School of Science, Weill Cornell Medical College & Memorial Sloan Kettering Cancer Centre

Abstract: Histopathological analysis of excised tissue is the gold standard for diagnosis and management of bladder cancer. For diagnosis, the pathologist typically relies on a set of morphological features on hematoxylin and eosin (H&E) stained tissue section. However, as this analysis is largely subjective, it leads to inter-observer variation, especially in grading bladder cancer. This manuscript proposes an unbiased quantitative method for grading bladder cancer by performing morphometric analysis on the H&E images. The images were first background corrected, and then subjected to color deconvolution and image segmentation. Only the hematoxylin-stained nuclear signals were used in subsequent analysis. The nuclei were then separated from the background and their masks were generated for quantitative morphometric analysis. The other cell types in the image, such as red blood cells (RBCs) and immune cells, were excluded from the image by manual outlining. The nuclear features i.e., size, shape, orientation, and their spatial distributions were measured in the generated masks. To quantify local clustering and alignment of nuclei, we utilized a 1-nearest-neighbor (1-NN) algorithm which measures nearest neighbor distance and nearest neighbor angle. A linear support vector machine (SVM) algorithm was used to classify the high grade and low grade bladder cancers. The optimal features were selected for classification using "wrapper feature selection" algorithm. The results showed that combining multiple parameters could achieve better discrimination. This study shows that the proposed approach can potentially help decrease the inter-observer variation of bladder cancer grading amongst pathologists and may aid in faster and unbiased diagnosis of patients with bladder cancer.

Antibacterial Properties of Oxazaborolidine Derivatives P6 Author(s): Adiel Coca, Cory Williams & Elizabeth Lewis Roberts Department: Chemistry & Biology Institution: SCSU

Abstract: Oxazaborolidine compounds are characterized as heterocyclic compounds containing a boron-nitrogen and boron-oxygen bond. These compounds are synthesized via the reaction between a boronic acid or boronic acid derivative, and a 1,2-amino alcohol. The first goal of this project was to synthesize, characterize, and purify these several of these oxazaborolidine derivatives. Once synthesized, the chemical application of these compounds was explored. The biological activity of these compounds will also be tested against several bacterial cell lines in the near future.

*This work was supported by a CSU Research Grant, a Summer 2018 SCSU Undergraduate Research Grant, and a SCSU Faculty Creative Activity Research Grant

P7 Different Types of Environmental Enrichment Produces Distinctive Synaptic Profiles in Adolescent Rats Author(s): Rachel Jeffrey

Department: Biology

Institution: SCSU

Abstract: The teenage brain is looked at so often as a black box in the neuroscience world. With different experiences brains are constantly changing, but our understanding remains incomplete as to what mechanisms shape adolescent plasticity. Following activity at the synapse cellular processes required for growth, stabilization, and plasticity form a complex molecular signature. Environmental enrichment (EE) is one experimental manipulation that induces changes in the synaptic landscape of the brain. However, it is important to distinguish between the different components of enrichment (physical activity, social engagement) as studies have shown divergent results from the different experimental interventions. In this study, we have four separate groups of rats with different types of enriched environments presented during the adolescent period. Males and females were used and results were analyzed by sex. One group experienced social housing along with access to exercise equipment for rats (SE/PE), one group only had access to exercise equipment - physical enrichment (PE), one group only had access to social enrichment (SE), and our controls were in standard housing. Analysis of social behavior and vocalizations, followed by ex-vivo analysis of synapse type, number, and biochemical composition were compared across the four groups. Our preliminary results indicate that there is an effect of our enrichment intervention during the adolescence period. Surprisingly we see a decrease in social interaction and vocalizations in groups exposed to both PE and SE compared with the other three groups. Additionally, we see variation in D2 dopamine receptors expression at the synapse between groups. Altogether, our results suggest differing effects of physical and social enrichment during the adolescent period, consistent with other work supporting an important role for enriched environment in synaptogenesis, neurogenesis, synapse development and cognition. Further, these changes stemming from social and physical enrichment during adolescence are not always consistent with effects of EE during adulthood.

*This work was supported by a CSU Research Grant

P8 Cryptocurrency for Products and Services: A Case Study Illustration on Digital Cryptocurrencies and their use in a Business Environment Author(s): Russell Engel, Jim Aselta & Dave Allen

Department: Accounting

Institution: SCSU

Abstract: This teaching case is intended to help accounting students deepen their understanding of cryptocurrencies and blockchain technology and to study how companies are adapting to this new environment. Students will examine the accounting practices and disclosures being used by companies accepting cryptocurrency for payment of products and services as well as how government institutions and regulating and standard setting bodies, such as the Financial Accounting Standards Board ("FASB"), Securities and Exchange commission ("SEC") and the Internal Revenue Service ("IRS"), are treating cryptocurrencies.

Using a fictional assignment, a new staff accountant (student) in a CPA firm is tasked by the partner-in-charge to research this topic and write a report so the accounting firm may provide guidance to its clients who are seeking accounting and tax advice. The case uses a mentor character to guide the student through the research and writing process.

Student's will conduct research into company press releases and SEC filings and will need to research and understand which Generally Accepted Accounting Principles might apply to accounting for cryptocurrencies. Research into relevant SEC and IRS regulations is also required. In addition, student's will deepen their skills in risk assessment and writing a concise, comprehensive business report.

P9 Words-in-Noise (WIN) Test Performance in Individuals with Neurological Impairment

Author(s): Jennifer McCullagh & Mary Purdy Department: Communication Disorders

Institution: SCSU

Abstract: Individuals with neurological lesions (NL) associated with stroke, seizure disorder, and/or traumatic brain injury often have complaints related to speech, language, and hearing. When these NL affect areas associated with the auditory areas in the brain, individuals often complain of difficulty hearing in noise. The Words-in-Noise test (WIN) is a clinically-useful assessment of hearing in noise, however, limited research exists on the WIN performance of individuals with NL. The study purpose was to investigate WIN performance of individuals with NL. Nine adult participants with NL affecting the auditory pathways in the brain were included in this study. Results indicated abnormal WIN performance for the majority of the participants. Similar to other tests of central auditory function, participants with NL had asymmetrical performance between ears on the WIN test. Although preliminary in nature, these results suggest the WIN test is a clinically-useful tool for the assessment of hearing-in-noise ability in individuals with NL. Results of hearing in noise assessments, like the WIN, in individuals with NL can help audiologists and speech-language pathologists develop deficit-based rehabilitation plans.

*This work was supported by a CSU Research Grant and a SCSU Mid-level Faculty Research Award

P10 Modulation of Anxiety and Aggression by Blue Light

Author(s): Syed Abbas, Joanne E. Perez Colon & Mark Jackson Department: Biology

Institution: CCSU

Abstract: Light exerts a wide range of effects on mammalian physiology and behavior. It is a key factor that establishes daily biological rhythm called the circadian cycle. Aberrant exposure to light can disrupt circadian cycle, causing physiological and behavioral deficits. Circadian cyc regulates daily levels of serotonin neurotransmitter in brain. Disruption in serotonin neurotransmission can lead to neurological conditions such anxiety, depression, and various mood disorders. This study explores the role of blue light in modulating serotonin related behaviors such aggression and anxiety. Anxiety like behavior is tested in crayfish by evaluating the duration of time crayfish spends in dark or light arms of a pl maze. The animals are placed under an opaque chamber at the center of the maze. They are released after one minute, and exploratory behavior recorded by a camera above the arena. A well-established behavioral test is used to evaluate whether crayfish become aggressive or subdued aft exposure to blue light. A group of crayfish are exposed to either white light or blue light. A control and experimental animal are placed togeth for battle in a dark, featureless aquarium. Data show that exposure ambient light may play an important role in establishing animal behavior. **This work was supported by a CSU Research Grant*

P11 Love at First Smell: First ever Examination of the Gross and Microscopic Anatomy of the Vomeronasal Organ of a Grey Seal Author(s): Meghan Barboza & Gabriella Restrepo Department: Biology Institution: SCSU

Abstract: The vomeronasal organ is found in many mammals including horses, dogs, and cats but not in all mammals, for example humans do not have one. This organ is known to play an important role in pheromone detection and response, such as when a cat in heat attracts another. Therefore, the presence of this organ can tell us a lot about expected behavioral changes and use of chemical cues. Within marine mammal research, the presence of the vomeronasal organ in seals has long been assumed but has never been examined. This is the first anatomic characterization of this organ, which we have verified to exist in a grey seal, *Halichoerus grypus*. We are currently using histologic staining to identify the microscopic anatomy and compare it to other species. This research provides a better understanding of seal olfactory and pheromone use.

*This work was supported by a CSU Research Grant

P12 Theatre in Nursing: Bringing Nursing Content to Life Author(s): Tara Ferrauolo & Hannah Roncallo

Department: Nursing

Institution: CCC

Abstract: Nurse educators pursuing excellence may find unlikely partnerships among non-healthcare professionals. These partnerships can offer students and faculty insight through interdisciplinary collaboration. In an effort to promote alternative instructional strategies, many variations of "flipping the classroom" have been crafted. In November of 2018, a professional collaboration between the nursing and theatre departments at Capital Community College embraced the opportunity to present a real life scenario displaying the pathophysiologic process and nursing care for a patient with alcoholic cirrhosis, as depicted by first and second year theatre students. Over a two-month period, theatre students utilized scripting created by nursing faculty as they prepared for their live performance which would take place during a scheduled nursing lecture. This opportunity afforded the theatre faculty and students the opportunity to practice learned skills pertaining to theatre and the arts, while simultaneously presenting accurate, real-life depictions of patient assessment, presentation, care and teaching. Prior to the performance nursing students were provided a pre-recorded video lecture to familiarize them with the content. Upon arrival to class they were given a "program" that included terms and diagnostics to identify throughout the presentation. Upon completion, nursing students were asked to identify examples of each of the program's core values, in addition to a classroom evaluation. The results displayed an overwhelming response in support of the activity, recognizing that the activity was not only consistent with the scheduled lecture content, but that it aided in furthering their understanding of the disease process and the role of the nurse.

P13 Nanocomposites Materials for High-Performance Supercapacitors

Author(s): Rahul Singhal, David Thorne¹, Justin Fagnoni¹, Peter K. LeMaire¹, Xavier Martinez², Camila Zequine², Chen Zhao², Ram K.

Gupta², David Uhl³, Ellen Scanley³, Christine C. Broadbridge³

Department: Physics & Engineering Physics

Institution: CCSU¹, Pittsburg State University², CSCU Center for Nanotechnology at SCSU³

Abstract: Electrochemical supercapacitors are useful in a variety of applications where charge has to be accepted and delivered quickly, and high-power density is required. Supercapacitors can satisfy many modern energy needs, with applications from hybrid electric vehicles to portable electronic devices. Various transition metal oxides and transition metal sulfides materials have been explored for applications to supercapacitors. Carbon-based materials like graphene oxide (GO) in supercapacitor electrodes contribute to charge-storage capability through the electric double layer effect. In this work we report the effect of graphene oxide on electrochemical performances of MnO₂ and CuS, for high rate supercapacitor applications. We have synthesized MnO₂, CuS, MnO₂/GO, and CuS/GO nanomaterials. Phase purity of the synthesized materials was determined by using X-ray diffraction (XRD) studies. TEM images revealed nano-scale morphology of the synthesized particles. All the electrochemical measurements were conducted in standard three-electrode configuration, using a platinum wire as a counter electrode. All the electrochemical measurements were performed in 3M KOH solution. Electrochemical properties of the synthesized samples were investigated using cyclic voltammetry and galvanostatic charge-discharge studies. The specific capacitance of MnO₂ and MnO₂-GO electrodes was found to be as 300 F/g, respectively at a current of 0.5 A/g. The CuS/GO nanocomposite electrode showed specific capacitance of 250 F/g, 225 F/g, 182 F/g, 166 F/g, 161 F/g, and 158 F/g at a current density of 0.5 A/g, 1 A/g, 5 A/g, 10 A/g, 15 A/g, and 20 A/g, respectively. The detailed results on synthesis, physical, and electrochemical characterization will be presented.

P14 Smart Building System using Wireless Sensor Network and AI Author(s): Andy Chae & Sangho Park Department: Construction Management Institution: CCSU Abstract: This research presents the development of an artificial

Abstract: This research presents the development of an artificial intelligent algorithm for automated building management system. The AI system uses wireless sensor data or IoT (Internet of Things) and user's feedback together. The wireless sensors collect data such as temperature (indoor and outdoor), humidity, light, user occupancy of the facility, and Volatile Organic Compounds (VOC) which is known as the source of the Sick Building Syndrome (SBC). VOC are often found in new buildings or old buildings with new interior improvement and it can be controlled and reduced by proper ventilation and heating/cooling system.

The collected data using wireless sensors are post-processed to fit within -1 to +1 ranges. Then the data are fed to the artificial neural network and it is trained in accordance with the collected data pattern. When the user of the facility has the control of the building's heating/cooling system and the AI system is fully trained using the user input, it will mimic the user's pattern and control the building system automatically just as the user wanted. In addition to the automatic AI controlled heating system algorithm, the researchers will put efforts to improve energy efficiency by optimized control of building management.

*This work was supported by a CSU Research Grant

P15 Advanced Statistical Application to Disaster Risk Assessment Author(s): Mohammad Rahman Department: Manufacturing & Construction Management

Institution: CCSU

Abstract: The humanitarian overload is increasing every year although the funding supports are declining. The humanitarian agencies clearly will have to do more with less. Efficient prediction is a key factor to ensure the proper flow of goods and services to the destitute population. We propose an innovative statistical model to predict the future disaster occurrences and the magnitude of the impact conditional on the past casualties. We employ statistical interchangeable parametrization model to estimate the model parameters in a dynamic way and update the final prediction based on the most recent disaster information using the Bayesian procedure. We apply gamma distribution in the model for analyzing the data and use an inverse gamma distribution as the conjugate prior to deriving the model parameters and the posterior distribution model. The outcome exhibits the propose forecasts performed well and better than a published result. The model would provide humanitarian relief agencies an easily implementable tool to support pre- disaster planning and field adjustment to humanitarian resource allocations according to the needs. We use four sets of recorded data to predict the yearly number of disasters, people killed, people affected (in million), and estimated Damage (in billion), collected from the Centre for Research on the Epidemiology of Disasters (CRED)'s EMDAT worldwide database for natural disasters. Although past events are not always, provide the complete indication about the upcoming disaster hazard. However, the assessment facilitates the pre-disaster planning and relief tasks preparation. The model reduces the computational burden significantly. **This work was supported by a CSU Research Grant*

P16 Arbacia Punctulata Aquaculture, a Possible Control for the Rise of Turf Macroalgae Author(s): Sean Grace, David Veilleux, Colette Feehan & Carla Navaez

Department: Biology

Institution: SCSU, NOAA/MFS, MSU & VU

Abstract: Changes in nearshore subtidal communities from kelp forests to turf-like macroalgal systems have been documented in many areas of the world. Multiple factors are driving these regimes shift and include both biological and physical mechanisms. To date, there are no mechanisms known that would result in a decrease of turf-like macroalgal dominance and the negative consequences these opportunistic species have on local community ecology. In southern New England available herbivores include the purple sea- urchin *Arbacia punctulata* which has been observed to create incipient barrens (areas cleared of turf- macroalgae). Our interest is to examine the possibility/feasibility of culturing *A. punctulata* at NMF, NOAA laboratory and examining the urchin's ability to clear (eat) the most common turf-like macroalgal species. If it is determined that the aquaculture of these urchins are possible and they actively consume the turf-like species, controlled transplant field experiments would be undertaken to determine the ability of *A. punctulata* to clear naturally occurring turfs in areas of shellfish interest in eastern Long Island Sound. These studies would help expand the knowledge of culturing sea-urchins and using these 'crops' to control the growing world-wide populations of turf-like macroalgae.

*This work was supported by a CSU Research Grant and by the Werth Center for Coastal and Marine Studies

P17 Instructional and Administrative Support Needs of Teachers in Two Urban Schools Districts in Connecticut Author(s): Beena Achhpal

Department: Curriculum & Learning Institution: SCSU

Abstract: The need for better teaching in many urban schools is evident in the persistently lower-than-average academic performance found among urban, low-income, and minority students (Education Trust, 2003a, 2003b; National Assessment of Educational Progress, 2003). Changing instructional practice is at the heart of improving learning outcomes for underserved and underachieving students (Hollings, E.R., 2006). This presentation will report the findings of a small-scale qualitative study conducted to explore the kind of instructional and administrative needs of teachers to improve academic outcomes. Semi-structured interviews were conducted with 15 teachers from 5 different schools in two urban school districts in Connecticut (USA). The results of this qualitative study showed that teachers needed support for classroom instruction, support related to common core state standards, support for teaching English Language Learners and children with disabilities, and professional development. Specific instructional and administrative support needs of teachers will be discussed. **This work was supported by a CSU Research Grant*

P18 Evaluating the TOSREC as a Brief RTI Screen for Early Struggling Readers in Urban Schools Author(s): Cheryl Durwin, Dina Moore & Deborah A. Carroll

Department: Psychology

Institution: SCSU

Abstract: Efficient response-to-intervention (RTI) screening is critical in urban schools where 60-80% of students read below grade-level. We evaluated the classification validity of the Test of Silent Reading Efficiency and Comprehension (TOSREC) for identifying students receiving school services using two first-grade cohorts in the same urban school. TOSREC is a standardized, norm-reference, 3-minute test of silent reading comprehension. We have used TOSREC in our research as a pre/post measure to evaluate gains of children receiving our research-based intervention, Dialogic Reading. In this study, we found that TOSREC slightly under-identified students receiving school interventions; however, most "under-identified" students did not receive interventions for specific reading problems. TOSREC accurately identified those not-at- risk, but the test over-identified some students as being at-risk when in fact they were not receiving school services. Interestingly, 75% of the over-identified (false positive) students were receiving our research-based reading intervention while waiting for school services. This suggests that TOSREC may be effective for identifying young readers at-risk for reading failure. Results suggest that schools need sufficient resources to provide appropriate services for all students needing intervention.

P19 Efficacy of a Dialogic Reading Intervention for Struggling First-Graders in Urban Schools Author(s): Dina Moore, Cheryl Durwin & Deborah A. Carroll Department: Psychology

Institution: SCSU

Abstract: The present study investigates the efficacy of dialogic reading (DR) intervention to improve reading comprehension with first-grade cohorts from two school years within one urban school. We adapted DR, a shared book reading technique, using a standard set of books for intervention and added an emphasis on vocabulary. Findings replicated our previous research in which DR intervention reduced the reading comprehension gap between at-risk readers and typically-achieving peers with a total intervention time of about 2 hours over 12 weeks. These results suggest that our intervention is a promising technique for struggling readers. **This work was supported by a CSU Research Grant*

P20 Effects of Prenatal Cannabinoid Exposure on Brain and Behavior of Developing Rodents Author(s): Kelly Bordner, Mary Spodnick, Neil Mascola & Rachel Jeffrey Department: Psychology

Institution: SCSU

Abstract: Maternal rates of marijuana use are on the rise, yet we know little to nothing about the long-term consequences of marijuana exposure during the prenatal period. Recent changes in federal regulations leading to the decriminalization of marijuana possession coupled with the growing potency of the drug signals that we are at the cusp of an emerging public health crisis. WIN 55,212-2 is a synthetic cannabinoid receptor agonist that is often used to model the effects of marijuana exposure in animals. The current project examines both behavioral and neuroanatomical effects of WIN 55,212-2 exposure during early or late gestation. A battery of behavioral tests, including an ethanol intake test and hippocampal-dependent learning task, were conducted and brains were evaluated for gross anatomical deficits. The results of this work are the first among a series of experiments designed to examine the effects of cannabinoid exposure in utero. **This work was supported by a CSU Research Grant*

P21 Fit to Teach: Hiring Practices in Physical Education

Author(s): Matthew Martin, Tan Leng Goh, Amy Gagnon & Chee Hoi Leong Department: PE & Human Performance

Institution: CCSU

Abstract: Due to a lack of information concerning hiring practices in the field of physical education, the purpose of this research project was to explore hiring bias perceptions and practices based on physical appearance and capabilities, and the "fit-ness," of the physical education candidates. 17 participants participated in the study including: seven school leaders, three physical -education -teachers, three recent graduates (less than five years from graduating with a physical education degree), and four physical education teacher education students (junior/senior level students). The participants participated in focus group interviews to answer the following research questions: a) What are the factors that influence the hiring practices of physical educators? b) To what extent is the perception of one's body weight a factor in the hiring practices of physical educators? The results of the focus group interviews generated three themes: 1) criteria that helped in job application, 2) hiring concerns in physical education, and 3) mixed responses on "weight matters". Criteria that helped in job application include letters of recommendation from established professionals, and candidates having a well-rounded skill set that would add value to the school. Hiring concerns indicated by recent graduates were hirers not familiar with the most current physical educators being healthy role models is more important. These suggestions should be taken into consideration in the preparation of students seeking for jobs in the physical education.

P22 Understanding the User Experience of Mid-Air 3D Touchless Gesture Technology

Author(s): Sukeshini Grandhi

Department: Business Administration

Institution: ECSU

Abstract: Mid-air-3D touchless-gestures have great potential for natural and intuitive interactions with devices when hands and eyes are not free for touch interaction. While several commercial and research deployments have implemented mid- air-3D touchless-gestures, they vary widely in the type of gestures that are implemented and the context/task use that has resulted in a spectrum of user experiences associated with mid-air-3D touchless-gestures. However, there is no comprehensive work that brings together the mid-air-3D gesture user experiences implemented and evaluated to date. By bringing together the collective knowledge of mid-air-3D gesture user experiences we can create a taxonomy of gestures that can be mapped with the desired user experience based on factors such as gesture description (e.g. hand/finger shape, orientation, movement), task/function (e.g. operating a music system), context of use (e.g. home vs. car; private vs. public space), and user characteristics (e.g. age, tech-savviness). This research proposes to conduct a systematic literature review (SLR) of extant research on implementation and user evaluation of mid-air-3D touchless-gesture based technology in the field of Human Computer Interaction. Unlike regular literature reviews, an SLR requires development of a protocol that details how library databases will be searched, how inclusion and exclusion criteria for research studies are determined and applied, and how data extraction from the research papers will be conducted. This poster will present the SLR protocol to review and analyze the user experience of mid-air-3D touchless-gestures.

*This work was supported by a CSU Research Grant

P23 Sequencing, Annotation, and Preliminary Analysis of Microbacterium Nematophilum Genome, a Natural Pathogen of Nematode C. Elegans. Author(s): Nicholas Edgington & Bridget Sharnick

Department: Biology

Institution: SCSU

Abstract: The genome of a natural pathogen of the nematode C. elegans, Microbacterium nematophilum, has been sequenced by short-read and long-read next-gen sequencing, and assembled by a hybrid assembly program named Unicycler. The result was a linear contig of 2.877394 Mbp long, and a shorter 55.769 kb contig. An overview of the genome structure and composition, comparative genomics, and an integrated prophage named MIN1, will be presented.

*This work was supported by a CSU Research Grant

P24 Attitudinal Ambivalence: Exploring the Effective Messaging Strategy to Deal with Conflict Author(s): Amit Singh & H. Rao Unnava Department: Marketing Institution: SCSU

Abstract: In the contemporary technological marketplace, brands get associated with negative information due to competitors' advertising, social media, etc. For example, a detergent brand claiming their detergent is equivalent to Tide with cleaning clothes and costs less would have positive effect for the brand. However, this type of advertisement would create a negative belief towards Tide. Specifically, Tide is not better than competitors on cleaning. Such situations create cognitive inconsistency among consumers. To avoid such evaluative inconsistencies, marketers have been employing the strategy of creating multiple advertisements highlighting the positive features in order to create multiple positive attributes. Interestingly, literature shows that even though marketers invest heavily in such advertising strategy, the negative information still stays strong creating cognitive inconsistency which, leads to experienced conflict during decision-making and weakens brand loyalty.

This research draws on the construct of attitudinal ambivalence to investigate and identify the effective messaging strategy for conflict reduction. Prior literature suggests that when an object gets associated with conflicting reactions (Priester and Petty 1996), providing information additive to dominant reactions may help in reducing the experienced conflict. In contrast, across fours experiments, we demonstrate that for products associated with both positive and negative thoughts, providing additional information that adds to existing dominant information does not reduce ambivalence. Interestingly, we find that information that negates an existing conflicting information is more effective in reducing the felt ambivalence, as compared to information additional dominant information.

P25 Felt Ambivalence: Exploring Mental Representation and Role of Situaional Conflict on Accessibility of Conflicting Reactions Author(s): Amit Singh & H. Rao Unnava Department: Marketing

Institution: SCSU

Abstract: It is natural that as consumers, we often encounter decision-making scenarios involving products associated with both positive and negative thoughts. For example, we usually purchase French fries for their taste but we are also aware about their higher fat content. The simultaneous accessibility of inconsistent thoughts while making a purchase decision is aversive for consumers and detrimental for brands. This research builds on the construct of attitudinal ambivalence to explore mechanisms that consumers employ to deal with the experienced conflict. Attitudinal ambivalence refers to the mental state of consumers in which they simultaneously access both the positive and negative thoughts towards the same object. Using the French fries example, suppose a consumer is thinking to order French fries and he simultaneously accesses both, French fries are tasty but very high in calories. This mental state of high tension between cognitively inconsistent evaluative thoughts is referred to as experienced ambivalence. Prior literature assumes that the moment products associated with such inconsistent thoughts enter decision-making situation, ambivalence would be experienced and hence, nothing can be done. This research investigates whether selective activation of positive thoughts is a possibility to deal with experienced conflict. Across four experiments, we first demonstrate that the storage structure of positive and negative thoughts associated with ambivalent objects is different than univalent brands. Further, we demonstrate a new method of creating inhibition effects for negative thoughts leading to avoidance of experienced ambivalence.

Session 9 – Environment, Geography & Geology – Room 305

*Denotes session chair

*O9.1 *Ecological Feedbacks Stabilize a Turf-dominated Ecosystem at the Southern Extent of Kelp Forests in the Northwest Atlantic* Author(s): Sean Grace, Colette Feehan & Carla Navraez

Department: Biology **Institution:** SCSU

Abstract: Temperate marine ecosystems globally are undergoing regime shifts from dominance by habitat-forming kelps (order Laminaria) to dominance by opportunistic algal turfs. The feedback mechanisms that stabilize novel turf-dominated ecosystems remain poorly resolved. Here, we document a decline of kelp *Saccharina latissima* between 1980 and 2018 at sites at the southernmost extent of kelp forests in the Northwest Atlantic and their replacement by algal turf. We examined the environmental drivers of a shift to turf and feedback mechanisms that stabilize turf reefs. Kelp replacement by turf was linked to a significant multi-decadal increase in sea temperature to above an upper thermal threshold for kelp survival. In the turf-dominated ecosystem, 45% of *S. latissima* were attached to algal turf rather than rocky substrate due to preemption of space. Turf-attached kelp required significantly (2 to 4 times) less force to detach from the substrate, with an attendant pattern of lower survival as compared to rock-attached kelp following 2 major wave events. Turf-attached kelp allocated a significantly greater percentage of their biomass to the anchoring structure (holdfast), with a consequent energetic trade-off of slower growth. The results indicate a shift in community dominance from kelp to turf driven by thermal stress and stabilized by ecological feedbacks of lower survival and slower growth of kelp recruited to turf.

*This work was supported by a CSU Research Grant and by the Werth Center for Coastal and Marine Studies

O9.2 11 Years to Save the World! The Everyday Importance of Climate Justice

Author(s): Stephen Axon

Department: Environment, Geography & Marine Science

Institution: SCSU

Abstract: The most recent scientific consensus illustrates that substantial progress needs to be made to addressing climate change by 2030. Without doing so commits the world to irreparable impacts. It is clear that the responsibility for addressing climate change is passed to "Others" i.e. those in government, industries or stakeholders. It is clear that policy and action are lacking to effectively address the most pressing global environmental concern. Since 31st October 2018, Extinction Rebellion has advocated in numerous examples of civil disobedience across the UK in an attempt to call for further action to address climate change. Following this example, similar activism has been seen across Europe and North America. Such activism falls within the context of climate justice. The rise of climate justice demonstrates the moral and ethical principles surrounding addressing climate change given the disproportionate impacts on vulnerable communities. Increasingly, these vulnerable segments of the population comprise people of color, women, and low-income communities. The result is often a lack of resilience to the impacts of climate change; as little adaptation and support is provided by various stakeholders e.g. government; protection agencies; and businesses. What is noticeable about Extinction Rebellion is its ability to place climate change on the social agenda; a task that has proven difficult in the age of denialism, scepticism, false balance media reporting, and far-right politics. This paper evaluates the messages from, and responses to, the Extinction Rebellion movement. It is clear that three main themes arise: (1) hopefulness, that changes to policy and collective action can follow while encouraging others to act; (2) marginalisation, from those who disagree with the actions the movement is calling for and portrayals in the media; and (3) ignorance, resulting from ambivalence from those who do not identify urgency of addressing climate change and from those accepting that changes are not possible. Advocating for climate justice and a just transition for a sustainable society is a challenge for those involved in public engagement with sustainability. This paper concludes with implications arising for future engagement approaches with climate justice activism and recommendations identifying potential techniques to minimise marginalisation and ignorance.

O9.3 Reconstruction of the Fluvial Style of Inverted Paleochannels in the Early Cretaceous Cedar Mountain Formation of East-central Utah Author(s): Michael Wizevich & Edward Simpson

Department: Geological Sciences

Institution: CCSU & Kutztown University of Pennsylvania

Abstract: Several km-scale-long sinuous ridges comprised primarily of conglomerate and sandstone are exposed in the Early Cretaceous Ceda Mountain Formation (CMF) near Green River, Utah. The ridges were previously interpreted as topographically inverted paleochannel-fill deposis of a meandering stream system. Similar inverted topography is present on Mars, and the CMF paleochannels have been used as an Earth-base analog for understanding the Martian features. Previous studies concentrated on the interpretation of channel morphology and hydrology, utilizin such parameters as flow depth, channel width, channel gradient, meander wavelength, and meander radius to characterize paleohydrology. Th fluvial style of the CMF deposits was largely based on the elevated channel planform and grain size parameters, while largely ignoring interna lithofacies architecture of the deposits. Although paleocurrent data matches reasonably well with the sinuous outline of the ridges, examinatio of the internal architecture reveals multiple fining-upward sequences with little evidence for lateral accretion, as expected in a meandering stream deposit, but instead is dominated by downstream and vertical accretion.

The 4-10 m thick ridge deposits consist of 1-2 m thick, erosionally based, fining-upward channel-fill sequences (storeys) of conglomerate an sandstone, sometimes with caps of mudstone. Typically, the ridges consist of 2-3 storeys, but in a few areas 4 storeys. In one location, the top ϵ a fining-upward sequence consists of mudstone with pedogenic (soil)/wetland carbonate concretions (<10 cm). The overlying conglomerat contains clasts of the mudstone with concretions. In other areas intervening mudstones contain abundant bioturbation and stromatolites.

Coarse-grained units of the multi-storey channel deposits represent repeated channel deposition in the same location, but separated by long tim intervals. Mudstone beds reflect floodplain overbank and lacustrine/wetland deposition between channel deposition. Meter-scale floodplai deposits with soil development indicate significant time (100's to 1000's of years) between channel deposition in a particular area. Cementatio of the uppermost channel deposits by resistant quartz cement has preserved them and the sequences below. There is abundant evidence that th sinuous shapes of the ridges and the branching of the channels may not be representative of the morphology of the river system that deposited th inverted paleochannels. In some places, bends in the channel deposits do not reflect sinuous channel shapes, but instead are stacked deposits c

two channels of very different orientation. The overall coarse grain size of the sediments, the evidence for downstream accretion, and shallor nature of the channel-fill sequences (1-2 m) support deposition in bedload dominated straight-channel streams. Thus, caution must be used whe using the paleohydraulic parameters derived from the elevated channels.

* This work was supported by a CSU Research Grant and by Kutztown University Research Committee Grant

Session 10 – Human Health & Behavior – Room 306 *Denotes session chair

*O10.1 Using Positive Psychology to Promote Cardiovascular Health for African-American Adults

Author(s): Erica Watson Department: Biology

Institution: ECSU

Abstract: 1. Statement of the Problem/Background: The majority of African-Americans in the United States have limited access to appropriate and comprehensive healthcare and preventive strategies. Cardiovascular disease ("CVD"), one of the leading health challenges and killers in this cultural community, compromises individual's health and patients' families and support systems. CVD derived from hypertension is particularly cumbersome for African-American women and men due to malnutritious meals, inadequate aerobic exercise, comorbidity with type II diabetes mellitus, and other lifestyle choices. These medical conditions arise from low socioeconomic status, limited access to exercise locations, and lack of health education.

Research Question/Hypothesis: African-American communities experience more effective CVD awareness, prevention, and treatment options when those options are discussed as part of a disease prevention program in barbershops and churches serving those communities. Socialization, spiritual responsibility, and interdependent cultural norms foster environments that are conducive to teaching about, maintaining, and ultimately preventing cardiovascular disease in African-American women and men.

Research Design/Methods Used in the Investigation: Thorough meta-analysis and collaboration between author, biologist, cardiologist, and health coach, resultant discussions revealed a wealth of synthesized and applicable channels to inform African-Americans about the risks of and preventative measures for cardiovascular health.

Results/Summary of the Investigation: One study employed questionnaires determining actual health versus perceived personal health in African-Americans and Afro-Caribbeans. With a total of these 6,082 participants reporting their overall health as "moderate to poor," cardiovascular disease was most prevalent as a concern in age groups 45-59. Barbers were employed in a study of randomized trials for ten months in Dallas County, Texas. A total of 539 hypertensive African-American male patients were selected for the 10-week baseline study: 78% were aware of their diagnosis, 69% received treatment, yet only 38% managed their blood pressure well. In the cross-sectional church study, 2,200 hypertensive African-American subjects in the rural south 37% reported a range of 20-80% increases (gynecologic, cardiovascular, dental, and general health areas) in positive healthcare practices (i.e., CVD prevention strategies) secondary to attending church at least once per month.

Interpretation/Conclusion of the Investigation: Significant cardiovascular health awareness increased in similar African-American communities as a result of communicating via barbershops and churches. Healthcare education infused with a positive psychology framework promoted awareness, prevention strategies, and disease reduction created multiple positive health outcomes for the African-Americans. Applying culturally influential health education practices, modeling, and follow-up for African-American patients can appreciably improve these patients' cardiovascular health when used in conjunction with positive psychology.

O10.2 Seeing to Hear? Audiovisual Speech Perception in Children with Autism Spectrum Disorders

Author(s): Julia Irwin

Department: Psychology

Institution: SCSU

Abstract: When a speaker talks, the consequences are both seen (visible articulation on the speaker's face) and heard (the speech sound). We report on three main areas of work from our lab. (1) Eye tracking results indicate that children with an autism spectrum disorder (ASD) appear to be less sensitive to the visible consequences of speech than their TD peers (i.e., in audiovisual speech in noise and McGurk Effect tasks), even when gazing at the speaker's face (Irwin et al, 2011). (2) Using event related potentials (ERPs), we employ a novel visual phonemic restoration paradigm to assess neural signatures of audiovisual processing in typically developing children and in children with ASD. In this paradigm a speaking face provides visual articulatory information that influences what the listener hears. Children with ASD showed a large /ba/-/a/ discrimination response in the presence of video of the speaker producing /ba/ relative to typically developing children, suggesting reduced influence of visual speech. In contrast, typically developing children exhibited an attenuated discrimination response, indicating a visible influence of seen on heard speech. These findings may implicate impaired integration of auditory and visual speech signals in ASD. (3) Finally, we report preliminary data from a therapeutic training game in the form of an iPad app designed to increase identification of speech in noise in children with ASD, called *Listening to Faces* (L2F).

*This work was supported by a CSU Research Grant, a NIH - NIDCD R15 to JI, and a START PPOC grant

O10.3 *Clinical Implications of "Parental-growth" in Family Therapy: A Mixed-Methods Study* **Author(s):** Sebastian Perumbilly

Department: Social Work / MFT Program

Institution: SCSU

Abstract: Most of the parenting research literature generally focuses on behavioral outcome on children and ignores key aspects of parents' personal growth and its implications in couple and family therapy. There has not been any published research study, to date, that has systematically examined "parents' personal-growth" as a unit of analysis from the perspectives of parents. After providing a critical review of existing literature on parenting from the perspectives of Family Therapy, Parenting Research, and Parent Training and Education, and identifying limitations in the existing research literature, I propose that family therapists and couple therapists significantly benefit from attending more to parents' personal experiences related to how they grow as persons while raising children. Using an online survey instrument, specifically developed for this study based on a mixed-methods research approach with a focus on concurrent strategies, this study examines the meaning and experience of "Parental Growth" from the perspectives of parents from the United States (n=214). This presentation will systematically and

critically investigate key components associated with parental-growth; analyze crucial systemic factors that influence parenting processes; and will examine results from a factor-analysis focusing on four important relational dimensions; and will discuss how the experience of parenting may potentially change parents' attitude towards the other parent, ability to balance personal boundaries, changes in intrapersonal qualities, self-care, and on parents' work/professional life. This presentation uniquely contributes to Couple and Family Therapy literature and has significant clinical implications for psychotherapists working with parents, and couples intending to raise a family. Despite the many uncertainties and challenges inherent in the parenting process, the experience of parenting offers parents many opportunities for personal growth. Therefore, it is crucial that parents and clinicians have *clarity on the core components of parental-growth* and use them to facilitate parents' personal growth in psychotherapy.

Session 11 – Finance & Accounting – Room 308

*Denotes session chair

*O11.1 Ex-Ante Predictability of REIT Returns

Author(s): Sandip Dutta, Gene Birz, Khoa Nguyen, Hendrik Devos & Desmond Tsang

Department: Economics and Finance **Institution:** SCSU, UT El Paso & McGill University

Abstract: Existing research examining the cross-section of REIT returns usually employs the in-sample models, which can only show ex post predictability of REIT returns. The goal of our paper is to determine whether REIT investors can pick individual firms in real time, i.e. without the benefit of knowing the wining strategies or the statistical distribution of prices. We employ the out-of- sample methodology of Cooper et al. (2005) and find that ex ante predictability of REIT returns is rather weak. For almost half of our 17-year sample, the performance of REIT firms chosen ex ante does not beat the performance of the NAREIT and CRSP Equally-Weighted indices. **This work was funded by the School of Business, SCSU*

O11.2 A New Measure of the Firm's Organization Capital Value: Earnings Announcements and Management

Author(s): Alev Yildirim & Linda Allen

Department: Economics and Finance

Institution: SCSU & Baruch College

Abstract: Intangible assets are a key contributor to firm value, enabling the firm to differentiate itself from competitors on the basis of its firmspecific information, identified as organization capital (OC). Since OC contains a heterogeneous group of disparate items, we decompose OC into: (1) key talent in the form of disclosed compensation of top executives which creates value and (2) a residual comprised of undisclosed perquisites and agency costs that do not increase firm value. Systematic risk from residual component of OC explains abnormal returns from positive earnings announcements during periods without CEO turnover, and for firms that manage earnings.

O11.3 Non-GAAP Measures

Author(s): James Aselta Department: Accounting Institution: SCSU

Abstract: This research effort addresses whether non-GAAP financial measures, reported by US publicly traded companies, improve the comparability and usefulness of financial information to investors. Research was conducted on twenty-five S&P 100 companies, who report non-GAAP financial measures, for the years 2013, 2015 and 2017. From this sample of twenty-five, three companies from the high tech, consumer products and automotive sectors were selected for a "deep dive" comparison of GAAP to non-GAAP financial measures in order to evaluate volatility and usefulness of comparative results from 2013-2017.

Session 12 – Political & Social Sciences – Room 309

*Denotes session chair

*O12.1 Shiny on the Outside: Persuasion in Candidate-Specific Advocacy Advertisements Author(s): Robert Forbus & Tess Marchant-Shapiro

Department: Marketing & Political Science

Institution: SCSU

Abstract: Although campaign finance legislation, like 2002's Bipartisan Campaign Reform Act (BCRA), seeks to preserve the integrity of the American electoral system by regulating political spending, such regulation comes at the price of limiting political speech. In its *Citizen's United* decision, the Supreme Court of the United States responded to BCRA by reaffirming the primacy of protected freedom of expression. This decision has resulted in eight years of change in patterns of campaigning in which super PACS have proliferated and spending on campaign advertisements has mushroomed. Although a sizable literature addressing general voter response to negative advertising, which is the typical form these ads take, there has been very little research into the techniques used in candidate-specific issue advocacy advertising. The how and why these ads work on voters has received scant attention. This research project is an interdisciplinary endeavor to fill this void by applying marketing and persuasion theory to the political science field of advocacy ad campaigns. In this paper the researchers analyze issue advocacy advertisements from the 2018 Congressional midterm elections. Through two pretests and two rounds of data collection, we deployed an inductively developed instrument experimentally in order to gauge the effectiveness of different persuasive techniques present in a subset of candidate specific issue advocacy advertisements from the 2018 elections.

*This work was supported by a CSU Research Grant

O12.2 How do Emotions Work in the Political Campaign Context?: Focusing on Predictors and Consequences of Emotions in Political Engagement Author(s): Yeojin Kim & Joshua Keegan Department: Communication

Institution: CCSU

Abstract: Since Aristotle indicated emotional appeal, Pathos, as one of the integral parts of persuasion, many political advertisers have used emotional appeals in political campaigns. With the advent of television advertising, candidates and political advertisers have attempted to draw on a variety of emotions in political campaigns to motivate the public (Brader, 2006; Lazarsfeld, Berelson & Gaudet, 1944; Kaid & Johnston, 2001; Weber, 2013).

Prior studies about emotions and political campaign focused mainly on the effect of emotional use of political advertising on citizens' political participation (Ansolabehere et al., 1994; Brader, 2005, 2006; Clinton & Lapinski, 2004; Brooks, 2006). Specifically, scholars have examined whether positive or negative emotional components of political campaign advertisements influence people's political participation (Ansolabehere et al., 1994; Brader, 2005, 2006; Weber, 2012).

As some scholars indicated, however, understanding when and how people arouse their emotions toward a political campaign is also important in that it can be motivational factors promoting their political engagement (Brader & Corrigan, 2006; Goodwin, Jasper, & Polletta, 2001; Lee & Kwak, 2014; Ost, 2004). Despite little research focused on how citizens' emotions are invoked in the campaign context, numerous studies have investigated the relationship between emotions and political engagement. However, the results tend to be somewhat inconsistent. For example, some researchers have assumed that negative emotions such as fear discourage voters to engage in politics (Valentino et al., 2008), but others have argued that fear as one of the negative emotions may lead voters to participate in informed voting behaviors (Marcus, Neuman & MacKuen, 2000; Tiedens & Linton, 2001; Valentino et al., 2008). Furthermore, there has been scarcity of research examining how citizen's emotions influence political engagement considering a variety of emotions beyond positive and negative emotions as well as psychological and behavioral political variables other than political participation.

Therefore, the purpose of this study is to (1) identify the predictors of individual's specific emotions aroused in the political campaign and (2) examine the relationship between the specific emotions and political engagement. Drawing upon the theory of affective intelligence and the cognitive appraisal theory of emotions, this study especially investigates the reasons for arousing enthusiasm, depression, anxiety, relaxation, and anger in the political campaign context and how those emotions are related to political engagement variables such as political interest, political efficacy, political trust, political recruitment, and political participation. The findings of this study would theoretically and practically contribute to broadening our knowledge of anticipated influence of specific emotions on political engagement, and to establish an appropriate strategy to promote citizens' political engagement.

*This work was supported by the AAUP Minority Recruitment & Retention Committee Research Grant

O12.3 Coal Energy, Rural Dispossession and Asymmetric Environmentalism Author(s): Manoj Misra Department: Social Sciences Institution: WCSU

Abstract: This paper investigates ongoing environmental protests against the building of an India-Bangladesh joint venture coal-fired power plant in Rampal near the Sundarbans mangrove forest in Bangladesh. The forest offers a range of products to support the livelihoods of approximately 500,000 people in the surrounding areas. This proposed power plant not only violently evicted thousands of poor locals and endangered the livelihoods of many more; ecologists fear that the plant will also endanger the Sundarbans, the largest contiguous mangrove forest in the world and a tiger habitat. As the locals protested against the imminent land grab and livelihood destruction, the authoritarian state responded with a violent and forcible expulsion of several thousand agricultural wage labourers, sharecroppers, smallholders and a number of shrimp farms. In response, the people of Rampal formed alliances with civil society and environmentalist organizations to launch vigorous grassroots resistance against the power plants. However, the involvement of emerging superpowers, such as India, in such mega coal energy projects both identify and underscore the need for not only national resistance but also transnational environmentalist mobilizing. Nevertheless, when networks like the Sierra Club, Green Peace, and Friends of the Earth become involved in local struggles, their campaign focus shifts from everyday local concerns to those focused on forest and wildlife conservation or the importance of limiting carbon emissions. The concerns and voices of local forest dwellers, in other words, often disappear from the transnational debate over global warming and Bangladesh's alleged developmental needs. This research then seeks to understand how environmental justice organizations can work more effectively at local, national and transnational scales without distorting or disregarding the concerns and priorities of the most marginalized and powerless actors. Understanding the relationship between local organizations and international groups claiming to act in the interests of such local groups, is made more difficult as international organizations have developed large, transnational bureaucracies rendering their relation to local socio-ecological protests increasingly complex, contradictory, and opaque. There is an urgent need to better understand the divergent experiences and interests between transnational environmental movements and the local grassroots mobilizations they claim to represent. Based on in-depth interviews with the key movement leaders, this paper examines the politics of resistance to coal energy in an authoritarian regime and the challenges facing coalition building between rural social movements, environmental justice organizations and transnational green politics. I argue that the Rampal resistance movement signals the emergence of a new form of environmentalism that is qualitatively distinct from the existing conceptual apparatuses, e.g., 'environmentalism of the poor', 'bourgeoisie environmentalism' and 'environmentalism of the malcontent'. I tentatively call this new form of resistance 'asymmetric environmentalism' in which power is unequally distributed among the unique constellation of ideologically divergent and socio-economically placed movement actors. Crucial to our interrogation here is its inability to invent a politics that would address the problem of landlessness and informalization that is interwoven with this instance of development dispossession but remains invisible to the network of national and transnational politics.

Adanti Student Center Theater

F2.1 The n-Word in South Africa Author(s): Frank Harris III Run time: 7 min Department: Journalism Institution: SCSU Abstract: The n-Word in Joha

Abstract: The n-Word in Johannesburg describes a cab ride in South Africa in which driver Murudi Vhonani (Don- ald) shares with American black Frank Harris III how he uses the n-word in his country and what the word means to him. When he learns the word means more than he thought, he provides a surprising response.

F2.2 Estonian Song Festival 1975 Author(s): Jaak Rakfeldt Run time: 7 min 16 sec Department: Social Work

Institution: SCSU

Abstract: The 1939 Nazi-Soviet Pact led to the 1940 Russian occupation. This subjugation led to years of a relentless, ruthless, aggressive rein of Russification, threatening the very existence of the Estonian people, language, and culture. Through mass murders, deportations to Siberia, Red Army conscription, and the flight of refugees, the ethnic Estonian percentage plummeted from 95 to almost 60%. Politically co-opted Estonian Song Festivals were, however, still allowed. After 1947, the climactic ending of each festival was the singing of Lydia Koidula's poem, set to music: "*Mu Isamaa on Minu Arm*" (My homeland is my Love). While no one paid attention to the propagandistic pieces, people all stood in reverent silence during this song. When it ended, crowds spontaneously erupted into singing its lyrics, "*peaksin sada surma ma ... sa siiski elad südames*." (should you, my dear homeland die, you shall still within my heart survive). Every five years, Estonians gathered to stand in solemn silence for this song, maintaining their Estonian identity, throughout the dark years of occupation, leading ultimately to the Singing Revolution and to freedom in 1991.

F2.3 Discussion with Faculty Filmmakers

Adanti Student Center Rooms 201 & 301

Session 1 - Room 201

T1.1 Making Do

Author(s): Christopher Trombly Department: Educational Leadership Institution: SCSU

Abstract: Many families exist at the edge of poverty – alternately slipping into and emerging from it. Social safety nets exist, but are challenging for families to negotiate. Moreover, families already smarting from the injury of economic hardship too often endure the insult of palpable judgment from professionals – including educators – who ought to be supporting them. This brief presentation will include findings from an investigation of the experiences of three families who earn low incomes. Among the findings are that a great deal of energy and social capital are required of families who labor to make do, and that modest changes in incomes impact families' eligibility to continue receiving available supports – with disproportionate impacts to their quality of life. The findings point to the need for educators to engage compassionately with families whose fiscal circumstances are strained, and to ensure that guidelines for determining eligibility for – and access to – supports are straightforward. Similarly, given the finding that successful navigation of available supports requires individuals to draw upon social capital, another implication of this investigation is that educators should ensure that youngsters – particularly those whose families experience economic uncertainty – are afforded opportunities to cultivate such social capital.

T1.2 Using an Evidence-Based Approach to Promote School Finance Adequacy Author(s): Olcay Yavuz

Department: Educational Leadership & Policy Studies **Institution:** SCSU

Institution: SCSU

Abstract: In the United States, the total expenditures for educating approximately 75 million students is more than \$700 billion. Using effective school finance strategies are essential to improve school effectiveness and student achievement. Even though there is a national level effort to improve our schools' finance system, there are still limited studies on how the U.S. schools should effectively distribute and spend their funds to promote equality and access for all. Therefore, this pilot study is designed to using an evidence-based approach to promote school finance. The research outcomes are expected to have a positive and measurable impact on the overall endeavor of providing high quality public education for all Connecticut children through effective budget reduction, saving and investment strategies.

T1.3 College Access and Rural Students

Author(s): Tricia Stewart, Nicole DeRonck & David Hill Department: Education & Educational Psychology Institution: WCSU

Abstract: This mixed methods research study seeks to understand the ways that school districts, including Administrators and School Counselors, encourage and support first generation rural students as they select, apply for, and attend 4-year colleges. We are also interested in the ways that Connecticut Universities and 4-Year Colleges actively recruit rural students. Given the low number of rural students that attend college nationally, our work addresses gaps in the literature from both P-12 and higher education perspectives. Additionally, our work hopes to increase communication about rural students' college experiences across Connecticut, which has powerful ramifications for rural students and institutions.

*This work was supported by a CSU Research Grant

T1.4 Before School, Fitness-based, Physical Education Program, and its Effect on Student's Cognition.

Author(s): Marybeth Fede, Catherine Abel-Berei, Carol Ciotto & Tan Leng Goh

Department: EXS/HMS

Institution: SCSU

Abstract: This study was a collaborative effort between SCSU and CCSU and examined the effects of a before-school fitness-based physical activity program on students' academic performance in mathematics and social-emotional well-being. The study also provided experiences for our pre-service teachers in implementing before school, fitness-based PA programs. Participants included 28 fourth-grade students and 47 sixth-grade students at two schools in Connecticut. Data collected in Fall 2019 showed preliminary results that included academic scores of those who participated in the PA program were higher than those who did not, and the social-emotional well-being of PA program participants increased throughout the program.

*This work was supported by a CSU Research Grant

T1.5 Absent Rice Farmers Make Streams Run Dry in Southeast Asia's Upland Watersheds

Author(s): Dushmantha Jayawickreme Department: Earth Science

Institution: SCSU

Abstract: All across Southeast Asia, new economic realities are driving rural rice farmers out of their fields in large numbers. The consequent rise in centuries old rice fields that lay neglected and abandoned raise some important questions for water security and ecosystem health, especially in upland landscapes with terraced rice fields. Preliminary field observations in the region suggests that despite the heavy water footprint of the crop, the loss of intentionally water-logged, intensively managed rice fields can lead to lower groundwater recharge rates, diminished stream-water yields, increased soil erosion rates, and other local and regional environmental impacts for decades to come.

T1.6 Getting High School Students to Pursue Their Undergraduate Education at CCSU Author(s): Joseph Bonnici, Henry Greene & Khoon Koh Department: Marketing Institution: CCSU

Abstract: Our research builds on previous studies we have done about integrating the five senses in various facets of education. Studies incluthe integration of the five senses in computer labs on campus, study abroad programs in Germany and culminated in the placing of a full Starbu counter, complete with food and drinks, at our main library on campus. In this study, we take the research one step further, this time examin how the five senses can be used to attract high school students when they visit our campus to decide where to register for their undergradu studies.

The AAA Model for Critical Thinking T1.7

Author(s): Marianne D'Onofrio & Joo Eng Lee-Partridge

Department: Management Information Systems

Institution: CCSU

Abstract: Critical thinking is an important skill for all students. Yet, many studies have indicated this skill set is lacking among students (e.g., Anderson and Reid, 2013). While there are many critical thinking models, the complexity of these models often make it cumbersome to implement. As a result, we used current models and literature to enable us in developing the AAA model. The AAA model encompasses Acknowledging the Problem, Assessing the Data, and Applying the Results. This model can be used to guide students in developing critical thinking skills and to help faculty members in assessing students level of critical thinking.

Home Environments, Memories, and Life Stories: Preservation of Estonian National Identity T1.8

Department: Social Work

Institution: SCSU

Abstract: This paper examines the means by which Estonian national identity was preserved during 50 years of Soviet occupation. The study upon which it is based explored such factors as family environments; memories, in the form of oral narratives; and life experiences. This research was informed by the sociocultural approach to mediated action, and it employed a mixed-method design using both quantitative and qualitative research methods. In 1993, a quota-sampling technique was used to interview a cross section of Estonian society (N = 930). Descriptive statistics, and factor and multiple regression analyses were performed. Fifteen qualitative interviews were also conducted. When woven together, these personal histories create a fabric that is representative of the greater Estonian history during the occupation. The implications of these findings may reach beyond the Estonian context to further inform our understanding of the complexities and the vicissitudes of identity preservation issues in Latvia, Lithuania, and beyond.

Unusual Eyes in Lyonsiid Bivalves T1.9

Author(s): Robert Prezant & Laying Wu Department: Academic Affairs Institution: SCSU

Abstract: There has been a debate about origins of eyes, the two most typical being rhabdomeric (microvilli) or ciliary (human rods and cones are ciliary). The argument has deuterostomes (vertebrates etc.) evolved with ciliary retina while protostomes (molluscs, segmented worms) have rhabdomeres. Exceptions have obscured the value of the division. Add to the list another exception - the clam Lyonsia hyalina has ciliabased eves located within their exhalent siphon. These photoreceptors are composed of a single vacuolated lens, surrounding pigment cells, and a tapering retina containing whorls of cilia leading to an optic nerve. The eyes are responsive to shadows.

- T1.10 Technical Efficiency of Agriculture in the Asia-Pacific Region
 - Author(s): Jason Patalinghug

Department: Economics & Finance

Institution: SCSU

Abstract: The Asia-Pacific region accounts for the majority of the world's population. It is also home to some of the fastest growing economies in the world. Agriculture has traditionally been an important sector for most Asian economies. This paper aims to use input-oriented data envelopment analysis (DEA) to measure the efficiency of the agricultural sectors of different countries in the Asia-Pacific region. I will then regress the obtained efficiency scores on some selected socioeconomic variables. The purpose of this is to examine which variables would have an effect on the efficiency of a country's agricultural sector.

T1.11 The Sound of Silence; Environmental Benefits of Solar Powered Pump-out Boats in Branford Harbors

Author(s): Mike Pascucilla & Sean Grace

Department: Public Health & Biology

Institution: SCSU

Abstract: Sound pollution from boat motors is known to affect whale, crab, and eel behavior and the physiology of fish embryos. Alleviating sound pollution is one management strategy that can affect marine environments positively. Recently, a solar powered boat was developed that produces less sound and has a lower carbon footprint. This study will compare motors by examining the differences in motor noise using a hydrophone and examine the effects of these motors' noise on fish behavior and physiological (heart rate) responses in local blue and ribbed mussels.

*This work was supported by the Werth Center for Coastal and Marine Studies

T1.12 Planning Ambitious Science Lessons: Preservice Elementary Teachers' Curricular Adaptations

Author(s): Carrie-Anne Sherwood Department: Curriculum & Learning

Institution: SCSU

Abstract: The Next Generation Science Standards necessitates shifts in science teachers' instruction that are ambitious. Although ambitious instruction is rarely enacted in science classrooms, there is evidence that curriculum materials can play a role in supporting teachers to shift their science instruction in pedagogically ambitious ways. However, there are very few materials that are yet aligned with the vision of NGSS. Thus, teachers need to be able to analyze and adapt the curriculum materials they use in order to identify and compensate for the weaknesses of the materials. Using the tenets of ambitious science instruction, and Remillard's teacher-curriculum Framework, this study examined the ways in which elementary pre-service teachers adapted published science curriculum materials in order to support students' engagement in ambitious science learning.

*This work was supported by a CSU Research Grant

Author(s): Jaak Rakfeldt

Session 2 – Room 301

T2.1 Baseball Pitch Accuracy: Analysis of Center of Mass and Stride Length Author(s): Paul Canavan & Nicholas Yang

Department: Health Sciences

Institution: ECSU

Abstract: Baseball pitching accuracy is a result of many factors including stride length, ball velocity, foot placement and precise control and timing of body segments. Purpose: The purpose of this study is to analyze pitching accuracy and body center of mass trajectory along with stride length. Six healthy male NCAA Div. III pitchers (18-22 yrs.) participated in the study. Each subject threw 10 fastballs in each quadrant of the strike zone. Results: Preliminary results indicate that each individual pitcher has their own unique optimal stride length and center of mass trajectory. Conclusion: Determining optimal technique for accuracy is important.

T2.2 The Development of a Paradigm to Legitimize Penny Stock Companies: The Case of Iconic Brands

Author(s): David Allen & Janet Phillips

Department: Accounting

Institution: SCSU

Abstract: This case presents advanced-level undergraduate and graduate accounting students with the task of developing a paradigm of proposed changes to "normalize" the equity section of a small "pink sheet" publicly listed Company, Iconic Brands. Such a paradigm could be transferable to companies in similar situations needing to increase investor interest to finance operational requirements. The case focuses on pitfalls of, and various financing alternatives for, smaller reporting public companies. Students will learn features of convertible debt, preferred stock and warrants and common stock. In addition, students will be exposed to various trading markets and Securities and Exchange Commission, FINRA and OTC Market regulations.

T2.3 Determinants of Employer-Sponsored Health Insurance Plan Selection Author(s): Jia Yu & Yi Zhang Department: Economics & Finance

Institution: SCSU

Abstract: In 2001, several start-up insurance companies began offering new products that featured a high-deductible health plan (HDP) paired with a health savings account that was funded by the employer. By 2004, this plan was included in the product portfolios of almost all major insurance companies. Employers started to provide multiple choices for employees, not only the traditional PPO, HMO plan, but also the newer HDP (HAS and HRA) plan. Selecting the appropriate and affordable health insurance plan becomes a very important question to solve for both employers and employees. Our research tries to locate the factors determining private sector health insurance plan enrollment decision, and also provides a guideline to both private companies and employees on health insurance plan selection strategies.

T2.4 Incorporating Fluctuations into Many-Body Calculations Author(s): Matthew Enjalran Department: Physics Institution: SCSU

Abstract: Mean-field theory (MFT) is widely used to study models of interacting many-body systems. MFT provides physically realistic results for a wide range of models in regions of parameter space where other more exact methods fail. The draw back to MFT is that fluctuations in measured quantities are ignored at all length scales. Hence, a quantitative description of phase transitions is a challenge for many physically interesting systems. The Thouless-Anderson-Plamer (TAP) method is a systematic approach for improving MFT by incorporating higher-order terms, fluctuations, into a many-body model. We will discuss possible applications of TAP to models of frustrated magnets.

T2.5 A Study on Inferential Methods for the Risk Ratio in the Analysis of Clustered Binary Data Author(s): Krishna Saha, Suojin Wang & Nargis Akhter Department: Mathematical Sciences

Institution: CCSU

Abstract: In diagnostic medicine, new treatment often is being developed to improve the existing one, with the aim of enhancing sensitivity/specificity. To investigate the performance of new treatment, both risk rates are often estimated and compared. In biomedical world, responses within the same treatment group are usually correlated binary. In this project, I develop some efficient procedures for estimating the risk ratio by taking into account this within-cluster correlation. Extensive simulation studies are conducted to investigate the performance of the proposed methods, and a real example of chemotherapy study that motivated this research is used to illustrate the proposed methods.

T2.6 Identifying the Stigmatizing Tendencies of Nursing Students Towards the Opioid-Misusing Patient

Author(s): Kristi Maynard

Department: Nursing

Institution: SCSU

Abstract: Opioid-misusers are often victims of stigmatization from healthcare providers including nurses. As a result of stigmatization, these individuals are at an increased likelihood of experiencing poor health outcomes by being mistreated or undertreated. The proposed study aims to answer the question of: What are the stigmatizing tendencies of pre-licensure, undergraduate nursing students towards the opioid-misusing population? A national survey of pre-licensure, undergraduate nursing students will be conducted to collect demographic information and a modified Opening Minds for Healthcare Providers Instrument (OMS-HC) score which, will be used to generate descriptive statistics regarding the relationship between stigma development and the nursing student.

T2.7 Law Enforcement's Usage of Business Intelligence Collaboration Author(s): Ellen Kramer

Department: Management Information Systems

Institution: SCSU

Abstract: The purpose of this research paper is to gain an understanding of what business intelligence is and to investigate the collaborative usage of business intelligence within law enforcement. The paper will support current research which suggests that approximately 45% of law

enforcement in the United States are using some form of business intelligence to assist with their cases and reported crimes. For investigators, this translates into an estimated 30% increase in closed cases. Collaboration tools can be used beneficially within departments and with outside agencies to identify patterns, trends, and relationships not normally discovered through individual analysis.

T2.8 Leading Causes and Cost Estimation of Preventable Medical Error

Author(s): Jia Yu

Department: Economics & Finance

Institution: SCSU

Abstract: Medical error is the third leading cause of death in the US. The institute of Medicine (IOM) report on medical errors created an intense public response by stating that between 44,000 and 98,000 hospitalized Americans die each year as a result of preventable medical errors.

According to the National Academy of Engineering (NAE) (2005) "an estimated 30 to 40 cents of every dollar spent on health care, or more than half-trillion dollars/year, is spent on costs associated with "overuse, underuse, misuse, duplication, system failure, unnecessary repetition, poor communication, and inefficiency." The research questions I try to explain here are: 1) what are the leading causes of preventable medical errors? 2) Is it possible to evaluate the potential cost of preventable medical errors in the United States?

T2.9 Precision Astrometry: A Hubble Space Telescope Project Awarded to SCSU
 Author(s): Dana Casetti, Terrence Girard & Elliott Horch
 Department: Physics
 Institution: SCSU
 Abstract: We present the scope and size of a recently-funded project by Space Telescope Science Institute to SCSU.
 *This work was supported by a STScI /NASA grant

 $T2.10 \ \ \text{Accessing Economic Complexity and the Product Space: an Alternative Approach}$

Author(s): Peter Bodo

Department: Economics & Finance

Institution: SCSU

Abstract: Blockchain technology, the underlying piece of financial related technologies such as Bitcoin, is growing in adaption within large organizations. For the full vision of version 3.0 to be realized, an enterprise class blockchain network would need to be created on a global scale. This technology comes with some very large disadvantages that could make this large deliverable prohibitive. Version 3.0 of blockchain, in concept, looks to create a single large worldwide blockchain network. Organizations will then host all of their data on this large network in a fashion in which the data is secure and only the organization and its constituents would be allowed to have access to. A blockchain network of this magnitude would require a massive buildup of datacenters all over the world. Due to the heavy processing overhead required to write data to the network, blockchain networks require massive amounts of power to operate. This overhead is generated by the proof of work which is required to maintain security and data integrity. Additionally, the technology is not capable of processing a large number of transactions. It has been shown that in order to maintain the security and data integrity a blockchain network can process up to sixty-seven transactions a minute. In comparison current financial transaction systems process roughly 24,000 transactions a minute. The combination of these issues could create a network incapable of being efficient or fast enough to handle the needed transaction volume while being expensive to run and requiring too much energy.

T2.11 The Vision of Blockchain Version 3.0 and The Overwhelming Hurdles That Its Implementation Will Face

Author(s): Mark Pisano

Department: Management

Institution: SCSU

Abstract: Blockchain technology, the underlying piece of financial related technologies such as Bitcoin, is growing in adaption within large organizations. For the full vision of version 3.0 to be realized, an enterprise class blockchain network would need to be created on a global scale. This technology comes with some very large disadvantages that could make this large deliverable prohibitive. Version 3.0 of blockchain, in concept, looks to create a single large worldwide blockchain network. Organizations will then host all of their data on this large network in a fashion in which the data is secure and only the organization and its constituents would be allowed to have access to. A blockchain network of this magnitude would require a massive buildup of datacenters all over the world. Due to the heavy processing overhead required to write data to the network, blockchain networks require massive amounts of power to operate. This overhead is generated by the proof of work which is required to maintain security and data integrity. Additionally, the technology is not capable of processing a large number of transactions. It has been shown that in order to maintain the security and data integrity a blockchain network can process up to sixty-seven transactions a minute. In comparison current financial transaction systems process roughly 24,000 transactions a minute. The combination of these issues could create a network incapable of being efficient or fast enough to handle the needed transaction volume while being expensive to run and requiring too much energy.

T2.12 William Blake's Mary Magdalene at the Sepulchre

Author(s): Tony Rosso Department: English Institution: SCSU

Institution: SCSU

Abstract: William Blake's somber but beautiful painting *The Magdalene at the Sepulchre* (1805) forms part of a series of watercolors designed for his patron Thomas Butts, which includes a sub-group of drawings illustrating the Passion of Jesus. *The Magdalene* depicts the scene narrated in the Gospel of John in which Mary of Magdala visits the tomb of Christ and finds it empty; however, she then turns and sees the risen Jesus standing behind her, and Blake captures the moment of her utter surprise and fear at the astonishing sight, with Jesus seeming to beckon her to rise from the tomb.

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