Mason Interdisciplinary Graduate Conference Proceedings' Abstracts[1]

The abstracts contained in this issue were presented at the 2015 Mason Interdisciplinary Graduate Conference hosted by the George Mason University's Graduate and Professional Student Association (GAPSA). The conference was held March 20, 2015 at the Mason Global Center and was open to the entire George Mason community with pre-conference workshops held on March 19th. Presentations lasted ten minutes each and were sectioned into the following categories: Policy; Higher Education; Development and Therapy; Sociology; Education; Mathematics and IT; History; S-CAR/Policy; and Science. The Abstracts are grouped according to their session in the order they were presented. Awards were given to "Best Presentation" and "Best Poster" voted on by attendees.

GAPSA Executive Board Members:

MHEHVISH KHAN, PRESIDENT

MICHAEL SILLIMAN, VP FAIRFAX

ASTER MENGESHA-GUBAY, VP ARLINGTON

BRIANNE MURPHY, VP PRINCE WILLIAM

SPENCER ROBERTS, DIRECTOR OF COMMUNICATIONS

SARA MORRISROE HEMING, ADVISOR

---

[1] Note: Each abstract published in this JMGR Special Edition was submitted to and reviewed by the Graduate and Professional Student Association (GAPSA) in accordance to their standards prior to acceptance for the 2015 Mason Interdisciplinary Conference. The abstracts are published here with reformatting, design layout and minimal editing by the JMGR. However, authors are responsible for their content. For more information see: http://gapsa.gmu.edu

POLICY

Media Coverage of Proposed Oil Drilling in the Arctic National Wildlife

RACHEL GOLDEN

Protected areas are often subject to legal changes that allow natural resource extraction to occur within their boundaries. It is important to understand how the media covers these legal changes in order to inform science communication, environmental policy, and practice. As a case study, the oil drilling controversy in the Arctic National Wildlife Refuge (ANWR), the largest protected area in the United States, was examined. ANWR contains both environmental and potential economic value, including billions of barrels of oil. Controversy over whether to drill in the 1002 region of ANWR has been ongoing since the late 1970s and has been covered extensively in the media. A content analysis of media coverage of US national and Alaskan local newspapers was conducted for 100 news articles. Contrary to expectations, it was found that on average, media coverage tended to focus more on reasons to oppose drilling. When comparing local and national sources, it was found that local news articles also focused more on opposition to drilling. Arguments against drilling included risk of oil spills and other damage to wildlife and the environment, native Eskimo perspectives, and uncertainty about the amount and value of oil in ANWR. This analysis may inform future studies on environmental controversies and public land, especially related to the influence of the media on political decisions.

Climate Change Communication through Guidebooks

MELISSA CLARK
JENELL WALSH-THOMAS

The National Park Service (NPS) National Capital Region (NCR) Urban Ecology Research Learning Alliance has partnered with George Mason University's Center for Climate Change Communication (4C) to more efficiently and effectively communicate about climate change. Since 2012, this partnership has developed educational tools to aid rangers in meeting NPS climate change communication expectations for engaging diverse audiences. A collaborative internship program was developed to facilitate progress towards NPS and 4C's goals. This program has applied peer-reviewed research to create a wide variety of products including web content (e.g. web pages, social media), printed materials (e.g. waysides, brochures) and ranger education resources (e.g. toolkits, guidebook). In this presentation we discuss the development of an NPS guidebook that specifically applies the 4C's Global Warming's Six Americas

segmentation, which is statistically representative of the American population's beliefs, attitudes, and motivations about climate change. The guidebook demonstrates how to communicate localized climate impacts in an innovative way and was distributed in January 2015. The guidebook is being used to demonstrate how bioregional information can be used in messages for visitors with specific beliefs and attitudes about climate change. Evaluation will be based on pre- and post-guidebook distribution data about NCR rangers' climate change communication practices. Our pre-guide distribution results (n= 37) reveal that most interpreters fall into the Six America's segments of Alarmed and Concerned. Rangers find it difficult to communicate to visitors about climate change and many would use NPS climate change communication resources. We demonstrate how we have designed the guidebook to include information about each of the major NPS bioregions and tailored messages for specific beliefs, attitudes, and motivations about climate change.

To Nonprofit Fundraising: Conclusions, Constraints, and Cautions

SHELLEY E. BRADLEY

This paper examines private sector models imported to the public sector in the context of nonprofit fundraising. A review of current literature finds "bottom-line" approaches to management ineffective in nonprofit organizations, but indicates prescriptive benefits of public relations/marketing strategies. Research cautions that nonprofits must not conduct excessive fundraising and should carefully manage donor-fundraiser relationships. Future studies are needed to explore fundraising in oversaturated sectors, and specific strategies that will increase the success of fundraising efforts.

Implementation of Comprehensive Family Planning Services in Rural Nepal

SAMIKSHYA SAPKOTA

Nepal, a developing country in South Asia, faces many public health challenges such as poor access to treatment, low life expectancy, increased maternal mortality rate and vulnerability to many communicable diseases. Low literacy rate, high cost of health service, social, and cultural dynamics are some major contributors in limitation of family planning programs in rural Nepal. Myths and misconceptions still are key factors leading to underuse of family planning services in the country. Women in rural Nepal seek abortion as an alternative method due to health related complaints, non-compliance with the method intended for use of contraceptive by either the woman or partner and dislike in use of contraceptive methods. Lack of knowledge on contraceptive use, fear of side effects and insufficient support groups are still factors contributing

to minimal utilization of family planning services. That said, with proper skilled health educators, informed parents peer support programs, availability of up-to-date resources and a managed family planning services Nepal could overcome these limitations. Although government of Nepal is focused on implementing program plan on family planning, it is essential in implementing a community-based practice, reducing stigma against family planning, and educating the public on family planning and contraceptive methods.

HIGHER EDUCATION

~BEST PRESENTATION~

Student Affairs Administrators: Examining Well-being Related to Time in Field, Position Level and Other Factors

HOLLIE CHESSMAN

More than 150,000 student affairs administrators are integral to the operation of student and administrative support services in higher education (Bureau of Labor Statistics, 2014); however, there are significant gaps in the literature regarding this population's well-being and how well-being contributes to the trends of growth and attrition among these professionals. Well-being is a multi-dimensional construct that refers to a positive psychological state where one experiences more positive than negative emotions that is interconnected to one's life satisfaction, meaning and purpose, autonomy, self-acceptance, love and connectedness, which leads to a life of thriving or flourishing (Ciarrochi, Kashdan & Harris, 2013; Diener, 1984; Diener & Seligman, 2004; Rath & Harter, 2010; Ryff & Keyes, 1995; Su, Tay & Diener, n.d.). Much of the research on student affairs administrators focuses on job satisfaction, but these studies are limited in scope and do not present a holistic well-being perspective. Therefore, this study examines well-being with a comprehensive approach, while also including work-life factors. In addition, this research provides a framework for examining well-being related to the various demographic variables related to student affairs professionals (position level within the organization; time in field). Through utilizing the Work-Related Quality of Life Survey and the Brief Inventory of Thriving, more than 2000 student affairs professionals responded which lends insights on this population's well-being and the factors that influence their well-being.

Experiences of Student Affairs Dual-Career Couples in Higher Education

JOHN CICCHETTI

Across the nation, it is increasingly common that colleges and universities employ faculty and staff members whose spouses also work in higher education. Two partnered individuals who are both employed full-time are frequently referred to as a dual-career couple. Much of the research focused on dual-career couples working in the same field is based primarily on physicians or academic faculty (Dyrbye et al., 2010; Fox, Fonseca, & Bao, 2011; Girod, Gilmartin, Valantine, & Schiebinger, 2011; Wake, 1993; Wolf-Wendel et al., 2000). There is a gap in the research specifically on the experiences of dual-career-couples working in the field of student affairs in higher education. As the number of dual-career couples working in higher education continues to increase over time, it is important to gain insight into the experiences of those working specifically in the field of student affairs. It is especially significant because many couples end up employed by the same institution. Increased knowledge of dual-career couples may lead to services and policies that heighten levels of employee well-being and work satisfaction while concurrently providing benefits to the institution (Halbesleben, Zellers, Carlson, Perrewe, & Rotondo, 2010; Sweet & Moen, 2004). This study investigates the interconnectedness of the personal and professional lives of dual-career couples through interpretive interviews. The study examines successful practices of dual-career couples and produces recommendations for key services and strategies for dual-career couples working in student affairs.

International Branch Campuses and Students in Transition

KAITLIN OYLER CICCHETTI

Internationalizing higher education is increasingly recognized as an important element of higher education today (Stearns, 2009; Wildavsky, 2010). Institutions that want to produce graduates that are global citizens and want to strengthen their position in the global marketplace often develop plans to internationalize the campus community. The establishment of international branch campuses as a way to increase internationalization efforts has become more popular since the turn of the century (Wilkins & Balakrishnan, 2013). The rise in popularity of international branch campuses means that more students are enrolling and are experiencing the unique globalized learning environment that branch campuses provide.

Researchers are spending countless hours assessing student motivation to study at branch campuses to improve marketing and recruitment strategies, which ultimately increases interest and enrollments (Lee, 2013; Wilkins, Balakrishnan & Huisman, 2012; Wilkins & Huisman, 2011). Research shows that a large number of international students have unpleasant first-year

experiences due to a lack of support in the transition (Lee, 2009; Ryan & Twibell, 2000). However, relatively little is known about the student transition to an international branch campus because institutions often do not devote the appropriate time, attention, and focus to research about the transition.

In an effort to shed light on the importance of better understanding the transition experience of students to international branch campuses, this presentation uses Nancy Schlossberg's transition theory as a theoretical framework to explore the literature on international branch campuses and students in transition. Schlossberg's theory provides valuable insight into determining the degree of impact a transition has at a point in time by focusing on factors related to the transition, the individual, and the environment. Recommendations for how international branch campuses can assist students in coping with transitions are also provided.

Benchmarking Recreation Programs in Higher Education

ANYA SAILEY

The strategic development of recreation programming in higher education is a key aspect of instructional design, facilitating academic, social, and experiential learning. This project involves conducting a recreation program evaluation in higher education in order to establish, research, assess, and evaluate the best practices from other universities. In order to conduct a successful program evaluation, several benchmarking tools are utilized to improve upon existing practices, and assist the development of successful program interventions. Recreation programming is discussed in terms of several scientific learning models and theories, which help facilitate its application to higher learning. The development of this project can be summarized in three parts: strategy, action plan development, and systematic performance evaluation. The main strategic objectives of this program address the university's reputation, facilities, community, and accessibility. Best practices in recreation programming include establishing recreation as one of the pillars of comprehensive campus planning, creating a vision for the physical development of recreational facilities which supports the institutional mission, instilling a sense of community, and fostering an accessible environment. The main purposes of this program evaluation are to increase student involvement and improve the reputation of the university, with the end goal of increased quality in recreation programming and its experiential value. The project includes a thorough review of the role that recreation programming plays in fulfilling institutional goals and its impact on the higher education sphere.

DEVELOPMENT AND THERAPY

Prescription Music Programming for Alzheimer's Patients

LINDA MAGUIRE

Music appreciation is remarkably well preserved in Alzheimer's patients. Studies in music-based interventions for Alzheimer's suggest physiological mediators as primary mechanisms to explain music's power in obtaining desired Mood, Cognitive and Behavioral (MCB) outcomes. Music interventions promote healthy physiological outcomes including improved heart rate variability, blood pressure, oxygen saturation, lower cortisol levels, increases in melatonin, dopamine, immunoglobins and hormones (Fancourt et al, 2014) leading to positive outcomes in most music-dementia studies (Guetin et al, 2013). Therefore, targeted, individualized therapeutic listening programs, created through development of computer-generated prescription iPods, can ease both patient and caregiver burden in the medical field. The listening programs draw from clinical baseline demographics, psychological profiles, cultural background, musical preferences, co-morbidities, drug interactions, best-case scenario prognostics and patient schedule of activities. The model produces computer-generated, individualized playlists using algorithms that draw from archives of psychological and physiology-matched music recordings. Scheduled listening programs escort patients through multi-staged progressive, longitudinal music programming levels that effectively escort and mediate improved MCB outcomes. The model focuses on difficult afternoon hours (Alzheimer's "Sundowning Syndrome" between 1-5 pm) and uses music to escort/redirect specific dysfunctional behaviors, cognitive distortions and emotional lability. Multiple weeks using varying 20-50 minute progressive music programming stages are created contingent on ongoing clinical presentations, patients' response to music, and clinician/physicians' best-case prognosis. Unlike traditional music programming, prescriptive music programs introduce up to 90% novel (previously unheard but appealing) music programming to achieve intended outcomes. Personalized programs will automatically change (through wireless delivery) every 10-14 days and are contingent on new clinical presentations. A field of physiologically trained expert musicians, performers, composers, and musicologists can potentially create, perform, and deliver transformative, prescriptive medical music and new compositional designs intended for purposeful health entrainment in listeners of all kinds.

The War Within: Trauma as Civil War Predictor

ERIK W. GOEPNER

Policy makers and practitioners, from helping agencies to military forces, have an interest in better understanding civil war onset. As seen in Iraq, U.S. national security policy makers did not anticipate the civil war that followed the 2003 invasion, and the military found itself ill prepared for that fight. Models for understanding civil war onset often focus on the feasibility for rebellion, the motivation to rebel, or both. Despite the substantial medical research identifying the myriad destabilizing effects trauma has on individuals and societies, to the author's knowledge trauma has not yet been tested as an independent variable in any civil war onset model. Drawing on medical, psychology, and political science research, I develop and test a trauma model for civil war onset, hypothesizing that a population's prior traumatization predicts future civil war onset. I then combine the trauma model with the influential Collier, Hoeffler, and Rohner feasibility model for civil war onset. The results indicate a statistically significant relationship exists between trauma and civil war onset. Additionally, combining the two models increased explanatory power, and did so in a more parsimonious manner.

Vocal Pedagogy for Middle School Students

TAYLOR SIMPSON

Discovering the correct vocal training techniques for middle school students is a difficult task for music teachers in regards to their changing voices and their new discoveries of interests and preferences. Adolescence marks the final phase in development to vocal maturity and thus, knowledge of how to cultivate an effective teaching style for middle school students is crucial. This study attempts to simplify the responsibilities of music teachers by focusing on the vocal development of adolescents, and recommending repertoire choices suitable for middle school students. The study also analyzes differences in gender, age, and ability levels. Ultimately, it provides an understanding of what to expect from students in this stage of development.

Sustainability is Equal to Change

KETAKI RANE

The definition of "sustainability" is different for different sectors but the outcome stays the same. Defining a visionary and holistic approach that operationalizes and drives an organization by striking a balance between current resources and future needs is sustainability.

In today's ever growing and competitive healthcare industry, one should learn to benchmark certain management aspects with healthcare and even non-healthcare industries. With so many departmental interfaces present with a healthcare organization, friction of ideas and mindsets is so very common. Futuristically speaking, getting every employee "on-board" with today's idea for tomorrow's benefit, is a task in itself.

In order to overcome these barriers a leader should understand how to incorporate a feeling of ownership in every single employee, which will get the organization through the change management. The advantages of achieving change management are three-fold. First, it creates process improvement; second, it helps to achieve a short-term goal in favor of the company; and third, it creates a solid foundation for the long-term goals.

To achieve this three-fold benefit, out of the many techniques, NeuroLinguistic programming (NLP) and focusing on "dynamic capabilities" of the existing resources can help maximizing the learning outcomes and acceptance to change. These two, when combined, can give synergistic results bringing us to "sustainability is equal to change."

Independence through Microfinance: How Microloans May Facilitate Women's Rights and Empowerment in Bangladesh

DISHU MAHESHWARI

The socioeconomic system of female wage labor in Bangladesh and the traditional factory system could be challenged by new systems like microfinancing. Both the neoliberal factory structure in Bangladesh and the rising microfinance industry reflect qualities of a human system—including power dynamics, hierarchical structures, order, and logic. Similar to other human systems, they are legitimized through human application and acceptance, and given meaning through steady application. The factory conditions in Bangladesh remain abysmal because both producers and consumers are willing to support them in their current state, regardless of how the workers are being treated. Capitalist businesses are grossly involved in the "race to the bottom," concerned largely with how cheaply products can be manufactured to maximize profits. The consumers of factory-made goods are satisfied because low-wage human labor keeps prices down and goods more attainable. The only losing sector in this exchange is the factory workers that work 12-16 hours a day in dingy and unsafe conditions, for unequal wages and no skill development. This is a system of obvious oppression and exploitation of the impoverished, and unless it is revolutionized, it carries the ghost of colonialism.

Under such conditions, the vitality of self-reliance and economic independence are reinforced. However, in a system where women are largely deprived of either, a financial overhaul is required. Microfinancing enables women to establish small businesses to encourage direct

market involvement, allowing them to operate without pressures from landowners and oppressive debtors. While still a developing system, microfinancing can present an unprecedented release from factory wage labor and permit women to rise above abject poverty. This paper seeks to explore if, and how, microfinance can pave the pathway for female empowerment in Bangladesh.

SOCIOLOGY

Social Class Hybridity

JEAN BOUCHER

In this paper, I revisit the marginalized literatures on class hybridity—the instance of a person who can identify with or feels they partake in more than one social class. I historically extract theories of hybridity from W.E.B. Du Bois' Double Consciousness and Robert Park's Marginal Man to present-day Pierre Bourdieu's Cleft Habitus—the instance of dual and contrary internalized dispositions. I then explore the more recent emergence of class hybridity research, from memoirs and literary works to studies of working-class students in university and college environments. Finally, I argue that the scattered history and dearth in scholarly attention to class hybridity is due to a convergence of socially organized silences and a dominance of middle and upper class scholars in the academy.

Kant & Moral Motivation: A Kierkegaadian Critique

MATTHEW WILLIAM BRAKE

Few thinkers have impacted modern philosophy and ethical theory as has Immanuel Kant. In his Critique of Practical Reason, Kant attempts to demonstrate the existence of universal moral imperatives established on the grounds of reason alone, not desires or inclinations. These moral imperatives are enforced only by duty and obligation.

In this paper, I seek to demonstrate the insufficiency of Kant's position. I accomplish this in two sections. In section one, I begin by examining the views of Kant's predecessor, David Hume, and the latter's view of the importance of inclinations for morality. Second, I address Kant's apparent distrust of human desire and inclination for determining moral imperatives as well as his view on the importance of duty and obligation for practical reason. Third, I use the work of Jürgen Habermas to inquire about what reason may lack for moral motivation. In section two, I commence my critique of Kant using the works of Søren Kierkegaard addressing three key areas: sin, faith, and feelings. From a Kierkegaardian perspective, Kant's view fails to take into

account the effect of sin upon human reason. Once this effect is acknowledged, I demonstrate that Kierkegaard's understanding of faith allows one to approach moral development not simply from reason alone but in a way that joins together both reason and emotion.

Gentrification ≠ Community Development: An Algorithm in the District of Columbia

BRITTANY DIBBLE

The 2014 Creative Economy Strategy for the District of Columbia officially deemed such creative industries as the culinary arts, professional services, information and technology, and arts and heritage as essential to the District's future as a competitive marketplace. The current plan promises to contribute 100,000 jobs and generate $1 billion in new tax revenue by 2018, with 3,000 jobs and $30 million in new tax revenue projected to be generated by the arts and heritage sector alone. It is an exciting opportunity for those industries previously regarded as luxuries or incomplex entertainments, but recent history has proven that an immediate expansion of such industries has often neglected the communities in which they sprout new roots.

Though often promoted as a tool for community development, the arts have walked hand in hand with the dilemma surrounding gentrification. Booming artistic organizations tend to remain immune to the effects of its business on the adjacent neighborhoods. Such effects include long-time residents being forced to relocate due to a lack of affordable living options, essentially replacing the existing community with one that is able to consume the art. The challenge is underestimated. Thus, my presentation explores the intersection of development and gentrification in the arts in the District of Columbia. In particular, it briefly examines the H Street neighborhood as an example of that complication.

In addition, my presentation examines the growing field of creative placemaking, in which arts and culture experts are working to turn the above-mentioned problem on its head, to transform or reform communities utilizing the arts while refusing to abide by a past algorithm of success that leaves residents neglected. Some solutions are offered, including a discussion of what the local government can do as a neighborhood's first and primary investor.

The Prevalence and Nature of Food and Home Insecurity at George Mason University

YARA MOWAFY

In 2013, 58,000 students indicated that they were homeless on their Free Application for Federal Student Aid (National Association for the Education of Homeless Children and Youth). Based on these findings, research was conducted to identify the prevalence of food and shelter insecurity, and the nature of this experience among students at George Mason University. This information would be shared with university administrators, faculty, and student affairs professionals, give voice to this hidden population and better educate and equip university administrators to support these students. In addition, this research would mend a gap in the scholarly literature, and provide solid groundwork for future policy reform.

The study focused on current Mason students and recent graduates of the university. Using a qualitative research methodology, data was gathered regarding student and stakeholder understandings of the prevalence of the problems among the student population.

This University assessment indicated that food and shelter insecurity are indeed concerns that impede student success. Through axial coding and thematic analysis, reoccurring themes emerged from these interviews. Financial struggles challenge student success and well being, especially their mental health. Homeless and hungry students live in a constant state of anxiety, fear and uncertainty. Many of these hardships occur mid-semester where little to no resources are available for students to access. These circumstances arise typically after financial assistance has already been allocated. This is a pattern that is overlaid over other patterns of financial insecurity, lack of familial support, the constant search for housing and food, and hiding their identities, all while trying to be a student. Most students believe that a college degree will lead them out of the cycles of hunger and homelessness and toward a home, employment and personal stability.

Towards a New Paradigm in Entrepreneurial Microcredit

JEREMIAH MITOKO

Despite significant improvements in economic openness and governance in sub-Saharan African (SSA), "economy-wide growth rates fell far short of those experienced under the bad old policies of the past" before liberalization (Rodrik, 2007). Why has poverty persisted despite improvements in economic openness and governance? What policies should be adopted to alleviate this poverty?

The study seeks to assign to entrepreneurial risk tolerance (limited liability on microfinance loans), an all-determining role in poverty, and in so doing minimize the importance of neoliberal explanations such as human-designed institutions, social factors, culture, and investment.

The main insight is that observed poverty in rural and urban poor the result of underutilization of resources due to market failure rather information asymmetry. Market failure creates a disutility in markets exchanges so that surrogate institutions must emerge to allow them to take place (Janvry, Fafchamps and Sadoulet, 1991). I identify four such surrogate institutions as follows: (a) cultural and kinship relations (Polanyi, 1944; Hyden, 1980); (b) entrepreneurship with risk transfer (limited liability) through bank credit (Schumpeter, 1934); (c) firms and organization (Coase, 1937) and (d) state-centered industrial policy.

The problem of the choice of surrogate institution is answered into two parts. In part one, I develop a theoretical economic framework that fits the actual development experience of sub-Saharan African (SSA) countries following economic liberalization. In part two, using data from Kenya, I develop an integrated dynamic micro-macro agent-based simulation as a policy support tool to test, visualize and evaluate new policy ideas for the developing world.

The study enhances our understanding of the persistence of poverty and inter-regional inequality in Kenya following economic liberalization, with potential application to other developing countries, and to marginalized groups in developed countries.

Preventing Recidivism in Bariatric Surgery Patients

ANYA SAILEY

Obesity is a global pandemic in modern society, which has a strong negative impact on the health and longevity of the human population. Bariatric surgery is available as a weight-loss intervention for patients in the "obese" and "morbidly obese" categories, and is currently the most effective method of achieving major, long-term weight-loss. However, bariatric procedures carry a risk of failure, including recidivism. Such procedures require significant post-operative care due to a high incidence of associated disruptive factors, most of which fall within the scope of the patients' control. Weight recidivism occurs primarily due to limited or failed behavioral modifications associated with nutritional intake and physical exercise. The determinants that influence post-surgical behavioral modifications, which prevent recidivism in bariatric surgery patients can be categorized using the Health Belief Model (HBM). In order to reduce and prevent instances of bariatric surgery recidivism, the patient's procedural preparedness must be ensured through assessment, evaluation, and education. To expand upon the current practices, when evaluating a candidate for bariatric surgery, medical professionals must assess the patients' perceived risks (determined by their intentions and perceived consequences) and evaluate the ratio of perceived benefits to barriers (determined by their value of resolution in terms of obesity

and its co-morbidities). The patients must then be educated in the areas which require special attention. New information must be presented to the patient in order to potentially remedy the existing attitudes or beliefs, which may hinder the success of the procedure. The sustainability of weight-loss and behavioral modification strategies is a primary consideration of bariatric surgery. The patients' levels of procedural preparedness will determine their self-efficacy in successful implementation of post-surgical behavior modifications.

EDUCATION

Student and Peer Preferences in Oral Error Correction

ELEONORA FIGLIUOLI

Since the 1970s, errors that students make during the language acquisition process are no longer viewed as negative, but rather as opportunities for learning. Error correction techniques that provide such learning opportunities are the main focus of this study and can be separated into the following categories: implicit feedback, explicit feedback, other repair, and self-repair. The purpose of this phenomenological study is to compare teacher and student preferences in oral error correction (explicit vs. implicit and self-repair vs. other repair) for two groups of level IV Spanish classes at a local high school. The following study will be an interview and observation study that is qualitative and it will employ purposive/homogenous sampling in order to figure out if student and teacher preferences in error correction match, both in their description in interviews, and in terms of how they are manifested in classroom behaviors. Interview data will be coded categorically along the spectrum of implicit to explicit error correction and self-repair to other repair and organized thematically between teacher and student answers. The team of researchers will determine if self-repairs, other repairs, implicit, and/or explicit feedback behaviors are present in the video clips by using a tally for each type of behavior to report it. Finally, student and teacher error correction preferences (according to interview data) will be compared to determine if students and teachers agree on useful error correction strategies. Teachers can better respond to the needs of their students through learning which error correction techniques are appropriate for students under particular circumstances.

Improving Student Experiences through Service-Based Learning

KRISTEN WRIGHT

Today, less than 60% of students who enroll in college will have earned a degree within four years (Tough, 2014). Of the estimated 21 million students enrolled in institutions of higher education, only 1.8 million received a bachelor's degree during the 2014-2015 academic year (NCES, 2014). While there are many factors that contribute to the persistence of a student to graduation, low-income and first generation students graduate at rates far lower then their higher income, non first generation peers. First generation students are twice as likely to drop out of college than students whose parents hold a bachelor's degree, and even more alarming, those first generation students who come from low income backgrounds are four times more likely to drop out of college than their peers (Yeh, 2010).

Student retention has become a topic of significant discussion in recent years with researchers identifying a number of high impact practices that contribute to student success, one such practice being service learning (Lockeman & Pelco, 2013). Previous research on the impact of service participation on the retention of undergraduate students suggests that engagement in service learning, a high impact practice characterized by faculty interaction, reflective learning, and community work, has a positive correlation with student retention (Lockeman & Pelco, 2013, Bringle & Hatcher, 2010). Students who participate in service learning programs show significant personal development, academic development, racial and cultural understanding, and a commitment to civic engagement (Yeh, 2010). According to theories on student retention, these factors foster engagement on campus and increase a student's desire to re enroll in the institution (Astin, 1984, Tinto, 1987).

Although new, the research on the linkage of service learning to retention is promising for prescribing a solution to college attrition rates (Bringle & Hatcher, 2010, Lockeman & Pelco, 2013). Few studies, however, have compared the benefits of service learning engagement between first generation students and non first generation students. The purpose of this qualitative study is to examine the ways that engagement in service learning during the first year might impact leadership development and intent to re-enroll for first generation students and non first generation college students, with the aim of exploring possible differences related to generational status.

Linton Hall, Virginia: A Community at a Crossroads

HEATHER R. M. KEENAN

This paper studies the Linton Hall community in Prince William County located in a suburban area of Northern Virginia. As is the case with many suburban areas, the population has become increasingly more diverse over the last two decades as immigration has increased and people have moved out of the District of Columbia, the nearby urban center. The community is also in a county with anti-illegal immigration legislation that resulted in uncertainty and distrust among residents. As a result of these changes, this community is at the crossroads between ethnic divisions and healthy, integrated diversity. Integrated suburban communities have the potential to be more stable economically than their diverse, segregated counterparts. These crossroads represent "a choice between the destructive process of resegregation and a far more successful outcome of lasting racial and economic diversity" (Frankenberg & Orfield, 2012, p. 223). The attempts by local policymakers to attract new businesses and community leaders' efforts to counteract the negative effects of the county's anti-illegal immigration policy are evidence of the area's potential to become an ideally diverse community. Unfortunately, the process for achieving such an ideal has not been fully studied or documented. This paper uses publicly available data and newspaper articles to describe the changes in Linton Hall during the last two decades in terms of the human ecology framework. Additionally, implications specific to the immigrant student population in the local public schools are discussed. The paper concludes with suggestions for local policymakers as well as topics for future research to support the community's positive progress toward stable integration.

Use Your Words: Debate Programs in South Sudan Secondary Education

TAMI F. CARSILLO

This presentation session is a structured inquiry into the development of South Sudan secondary education debate programs as part of civic education development in the conflict-affected state. This analysis supports that civic education development in conflict-affected societies struggle with facing not erasing the past in hopes for a more interactive, engaged, and informed citizenry and government. A challenge to South Sudan and its education system is how to support an individual's right to build a self-image with the country's developing national identity, and in a conflict-affected state, this challenge is occurring simultaneously. Language, history, religion, and gender are parts of every state, and as the newest state, South Sudan is trying to navigate these conflict identifiers, which must now serve as routes to unity, peace, equity and equality, with also navigating capacity development through limited infrastructure systems.

Understanding history and government empowers people to make their lives and communities more effective and there needs to be systems and structures in place to facilitate this empowerment. There are critical relationships between civic education and the social and economic infrastructure systems of South Sudan. People criticize government as them vs. us, yet we must realize that we are them as much as us. Therefore, the main questions for the presentation session are: (a) In South Sudan, what are the desired goals of debate, civic education, and civic engagement for an improved society? (b) How can debate programs be part of the peacebuilding process in the formal and informal education sectors? (c) In South Sudan, what are the roles of technology and infrastructure in debate programs as well as civic education?

Social Media and School Closure Policy

DONALD GARRETT

#CloseFCPS became a worldwide trending hashtag on Twitter in response to the school district's failure to close school due to snow. This correlational study examines actions by school officials and the news media to see if there was an influence on the number of tweets per minute with the hashtag.

MATHEMATICS AND IT

Securing The Internet of Things (IoT)

JEANNE M. STAFFORD

The convergence of interconnected devices, referred to as the Internet of Things (IoT), will not only pose security challenges to the industry, it will offer savvy cyber hackers opportunities to infiltrate our lives from virtually anywhere. Locking our homes doors and windows will not keep out those who can enter through our internet communication systems and take control of internetworked components that make up the IoT. This paper will define the IoT, the concepts behind the technology and the cyber security vulnerabilities it presents. Entrepreneurs are expecting IoT profits, but only while protecting their investments from cyber hackers. Cyber protections will help instill confidence, availability and integrity in this technology, from a network systems security perspective.

Analysis of Twitter Trends during the 2014 Scottish Referendum

MARCELLA MORRIS

On September 18, 2014, political life in Scotland changed. People took to the polls to share their voice to answer a 300-year old question—should Scotland become an independent nation. When considering the democratic force behind the political campaign leading to the referendum, the role of the individual voter stands out. When considering the role of the individual and how to best survey the sentiment on the ground in the age of technology, we are drawn to social media accounts, and Twitter in particular, as it is an open forum for self expression.

Twitter is a new source for social scientists to observe how individuals interact and participate in society and in this case, the democratic experiment that was the referendum on independence in Scotland. This paper dives into the challenges surrounding Twitter-based research and works to survey the ongoing conversation on the Twittersphere on September 17 (the day before the vote) and September 18 (the day of the vote) as the conversation unfolded and weighs in on if there was any ability to predict the results that were announced on September 19th.

Scotland stands alone in holding an independence referendum verified and supported by both sides of the political sphere, it is far from the only self-determination movement underway today. What we saw in Scotland, while not successful for those supporting independence was extremely successful from the standpoint of democracy and peace. This is an all too rare case in these types of political battles and the dynamics of the process at the individual level, accessible through Twitter, should be analyzed closely.

Data Mining and Photometric Redshift

PRAGYANSMITA NAYAK

Data Mining is extraction of information, also known as knowledge from vast dumps of raw data. Various statistical, visualization and machine learning techniques are employed to detect patterns in the form of mathematical equations, association rules, decision trees and other comprehensible forms for further analysis. In the field of astronomy, predicting the distance of the multitudes of sky objects is an important problem in order to better understand the universe structure and distribution of the objects. Spectroscopy measurement is an exact approach but it is time-consuming and thus, alternative approaches are actively being investigated. With the upcoming sky surveys that will investigate the deeper parts of the visible sky than has ever been done in the past, the viability of a faster and "general" solution is increasingly becoming more critical.

Attempts have been made to use regression, Artificial Neural Networks (ANN), decision trees among others to address this problem. However, the solutions have been limited in their predictive accuracy. Distance independent attributes such as color of the sky object in the image have been used. Additional similar distance-independent attributes need to be considered to improve the accuracy which are being investigated in the current study. Ensemble methods are being studied and implemented to determine the increase in accuracy compared to the estimates from existing methods.

Implementing the MR POTATOHEAD Framework – A Software Tool for Collaborative Land-Use Change Modeling

MIKE LIVERMORE

Agent-based land-use cover/change models (ABM/LUCC), which can be used for various types of complex human-environment interactions, recently have been gaining popularity. ABM/LUCC models combine a spatial representation of the landscape with key decision-makers (e.g. farmers and institutions) and an environment for interaction. There is inherent complexity in modeling human-environment interactions which need to be assessed at multiple spatial and time scales. Often multiple models are integrated, however, current methods of developing integrated models are cumbersome, and communicating design and results can be a great challenge. This would be aided by a common framework in which different models could be compared to and collaborated with each other. Attempting to address these concerns is the MR POTATOHEAD framework, which encapsulates many of the principal elements generally used in ABM/LUCC models, providing a common medium for comparison and collaboration. The MPH would easily allow multiple models to share both data and functions so that each designer can concentrate on their area of expertise. This paper presents a Java-based, implementation of the MR POTATOHEAD framework, giving modelers a user-friendly environment in which to build a wide range of collaborative ABM/LUCC models.

Exploring and Visualizing 1992 – 2008 Presidential Election Results of Ghana With R Package Micromap

FRANCIS N. OPOKU

Linked Micromap (LM) plots display statistical summaries and spatial location all together in one piece. Two packages in R: micromapST, micromap can be used to create linked micromap. Whereas micromapST works for the fifty states of USA plus Washington D.C, micromap can be used for all geographic regions with data well prepared. Even though the micromap package is

not "readymade" package for use with data on Ghana, extra work is done using other packages in the statistical software R to prepare and develop the data obtained from the electoral commission of Ghana and GADM spatial database in this paper. The R package micromap is used in this paper to visualize and explore a vast amount of statistically useful and educative information in the presidential election results of Ghana since the West African State returned to democratic rule in 1992. Using data from five presidential results, choropleth, conditioned choropleth maps, temporal choropleth maps, and linked micromap plots are generated for Ghana. These clearly presented plots are thus used in this paper to show voting trends and some peculiarities associated with these results which otherwise would be difficult to notice.

HISTORY

Memorial Handiworks and Post-War Southern Women

LAUREN CLARK

In the latter half of the 1860s, Mattanna Fairchild of Magnolia Vale plantation in Raymond, Mississippi created a large memorial hair wreath. The wreath was composed of the hair of several Confederate soldiers who fell during the Battle of Raymond that occurred partially on the property and was part of the lead up to Vicksburg. A large decorative piece, which continued to hang in the familial home until 2014, the wreath is densely laden with symbolism: realistic flowers are arranged in a horseshoe shape reminiscent of a funeral wreath around a large central cross while the Confederate flag rises on the top right, serving as a backdrop to the handwritten list of the names of the fallen. By collecting, preserving, and refashioning the hair of Confederate soldiers into a decorative piece of needlework, Fairchild participated in a larger social movement of the 1870s and 1880s – one expressed by the work of women to honor fallen men. Fairchild's work showcased the ideals of the Old South and her beloved Confederacy, the passing of which she mourned alongside the dead.

This short presentation will argue that memorial handiworks, such as Mattanna Fairchild's massive hair wreath, were part of the same movement among Southern women of the late nineteenth century that saw the erection of Confederate monuments and statues across the defeated South and even as far north as New York. While monuments were large and public, these private memento mori served the same purpose within the domestic confines of the post-war period. These works helped to construct social concepts of race and gender as they related to being "Southern" and aided in making those ideals more palatable to the victorious North, showcasing the gentility of white southerners and, in particular, the domestic piety of the elite Southern woman.

Revolutionary Sermons: A Textual Analysis

JORDAN BRATT

Pastors and preachers did not stay silent during the American Revolution. Their sermons voiced warnings, frustrations, encouragement, and guidance. Through their words, we can view a glimpse of the mind and resolution of the colonists. How did the colonists view England? What scriptures were used to justify the revolutionary conflict? How unique or similar were the sermons to each other? Traditional analog methods provide some insight on this topic. However, by applying digital methods a quantified comparison of the corpus of sermons can be attained. Through distant reading, or the aggregation and analysis of data from a large collection of written documents, researchers can draw comparisons otherwise not achievable within a reasonable amount of time. Text Mining, a form of distant reading, specifically identifies word counts and frequencies to allow the researcher to compare the texts on a micro level. Using a Text Mining program called Voyant, I was able to compare twenty-one sermons encompassing 188,223 words that span in time from 1750 to 1783. The original goal of this project was to identify the body of scriptures used by the preachers during the Revolutionary time period. However, through comparing word frequencies, other interesting trends were highlighted. The use of "war" or "wars" appears infrequently in the corpus identifying a lack of focus on that subject. Also, "king" was invoked more towards the beginning then the end of the time period. The output also highlighted different variables that need to be addressed such as the varying length of sermons and their uneven distribution across time. Although it provided some answers, Text Mining ultimately prompted more questions and opened additional avenues of research.

There Can Be Only One: Roman Conceptions of Twins in the Augustan Succession

SAUL CARDONA-LUCIANO

Often overlooked in discourse on the Augustan succession is the role of twinning imagery in the selection and development of potential successors. Scholars have noted the visual similarity between portraits of Augustus' grandsons, Gaius and Lucius, that seemingly glosses over an age difference of three years. The motivation to present his hoped-for successors as twins was intended to alleviate concerns over regal dynasty by co-opting the imagery of other twin pairs present in the Roman cultural psyche. These twin pairs most prominently included Castor and Pollux, the saviors of the Republic at Battle of Lake Regillus, and the city's mythical founders, Romulus and Remus. By casting his own successors as merely another pair in a long line of Roman twins, Augustus made autocratic succession more palatable to a notionally republican populace and aristocracy. The profusion of twinning imagery in Augustan art did not, however, imply dual succession; indeed, Roman conceptions of twins required the preeminence of one

twin over the other. In this respect, Castor eclipsed his brother Pollux in his role as a horseman at Regillus, and indeed they were both known collectively as the Castores. This legacy lived on in the subsequent creation of the founding myth, in which Romulus, through fratricide, eclipsed his brother Remus. Following this trend, certain key iconographic features in the portraiture and key markers in the career of Gaius designated him the favored successor over his younger brother, Lucius. Despite their untimely demise, Augustus reused this formula again in the adoption of Tiberius alongside Agrippa Postumus in 4 CE and in the designation of Tiberius' own successors, Drusus Minor and Germanicus. The convenient appropriation of myth and legend became dynastic ideology and ultimately shaped the course of adoption and succession in the early Empire.

Lost in a Moment: A Case Study in Defense of the Tale Type Index

EVAN PAIS

From the first publication of Antti Aarne's Verzeichnis der Märchentypen in 1910, folklorists have not tired of debating the virtues and pitfalls of the international folk tale classification system known as the Tale Type Index. There is much to be said for both sides of the debate, and my paper is an attempt to judge for myself the merits of this century-old model through a case study of a single tale type: ATU 681. Now known as "Relativity of Time," in previous editions this tale type was known as "King in the Bath" and "Years of Experience in a Moment." For this paper I have located twenty versions of this tale type, stretching from Japan to Iceland, from the 4th century CE into the 20th. Using tables to break down the components of these twenty versions, I have analyzed this mass of data with the intention of reaching some conclusion about the usefulness of the Index for modern folklorists. This paper contains both my process and my conclusions.

My presentation involves a Power-Point presentation, which I use to highlight some of my findings in a manner accessible to the audience. This involves tables, maps, and relevant pictures. Additionally, as my paper centers around a single folk tale "type," I briefly re-tell one of the versions I collected at the beginning of my presentation. This serves a dual purpose of introducing my audience to the essential structure of the tale type I discuss, and of bringing these tales into the oral storytelling context from which they originate.

Constraints to Internal Systemic Change through Civil Resistance in Unrecognized States: A Comparative Case Study

HILMI ULAS

Unrecognized breakaway states are those which have extra-legally seceded while also claiming territories from an internationally recognized State. My research focuses on the conditions, which both enable but - more often and more strongly - disable the power of social movements from manifesting and hence enacting change internally under the confines of unrecognition. This study will posit the hypothesis that unrecognition both directly and indirectly (through the obstruction of social movements) undermines efforts at a potential resolution of the ongoing conflicts, which afflict and plague unrecognized breakaway states.

Therefore, this research is comparative focusing on the effects - or lack thereof - of social movements in several unrecognized states including the Turkish Republic of Northern Cyprus, Nagorno-Karabakh Republic, and Somaliland, as well as Eritrea (an ex-unrecognized state) and Kosovo (a limitedly-recognized state). Subsequently, insight is gained into the conditions which enable or hamper social movements from becoming effective, with special emphasis on economic factors (such as the presence of black markets, organized crime, and corruption), social factors (isolation; increased criminality), and political factors (cronyism).

SCHOOL OF CONFLICT ANALYSIS AND RESOLUTION (S-CAR)/ POLICY

Benefits and Best Practices of Field-Based Courses in International Peace and Conflict

ALEX CROMWELL

For students in the international peace and conflict field, traveling to a conflict zone to hear from those who have lived through the violence, or are currently living with it, can be an extremely meaningful experience. This is because it exposes students to a wide array of opinions not available to them in their home country and the complexities of the conflict experienced by people who live on the ground. In this paper, I detail three types of courses where students studying international peace and conflict can have important learning experiences: courses in "post-conflict" zones, where violence has ended and various transitional justice mechanisms are being implemented, courses in zones of intractable conflict, where conflict has persisted for long

periods of time and has consumed the groups in conflict, and citizen diplomacy courses facilitating conflict prevention, where there are tensions between countries that could lead to future conflict. Studying abroad in one of these types of courses can be a valuable experience that prepares students for work in the field by exposing them to challenging situations, facilitating shifts in their consciousness and helping to develop agency for peacemaking, through transformative learning and the development of intercultural competencies. This involves cultivating knowledge, skills, attitudes, and behaviors that support these shifts. Additionally, before traveling to the region, training students in ethnographic methods, how to learn experientially, the elicitive model of conflict resolution training, and providing them with an intercultural toolkit will greatly prepare them to ensure that they get as much out of the experience as possible. To maximize what students gain out of field-based courses in conflict areas, it is also essential to develop robust reflection processes, and ways for students to engage in follow-on activities once they have returned to their home communities.

Eminent Domain Destroys a Community: Leveling East Arlington to Make Way for the Pentagon

NANCY PERRY

This study examines the eminent domain action in 1942 when the federal government took 411 acres of land, including an African American neighborhood, to construct the Pentagon building in Arlington County, Virginia. The Fifth Amendment of the U.S. Constitution acknowledges the right of the federal government to exercise eminent domain where needed for the common good, but requires that property owners be given just compensation. This study explores the issue of compensation: what the residents lost when they were forced to move, how that loss was compensated, and whether the compensation was 'just.' The study data includes interviews with former residents of the neighborhood, oral histories, land records, census data, photographs, and newspaper articles. The study concludes that the federal government compensated the residents for land and buildings, but was unable to compensate for a lost gemeinschaft community. For many residents, that community is mourned even seventy years later.

Decision Making on Obamacare

YEXIN MAO

This paper focuses on the decision making process of Obamacare, and impact of politics on the policy process. It analyzes how Obamacare was developed and negotiated among the Obama Administration, Congress, states and other interest groups such as the health care industry and small business organizations. Despite the passage of Obamacare, it still has been facing great

challenges from opponents to delay and repeal it even at the cost of the federal government shutdown in 2013. There are four important factors influencing the Obama administration's health care reform including interest groups, ideologies, President Obama's leadership, and the context of policy making. Conflicts of interests and ideologies matter most and have exacerbated partisan polarization, which has seriously affected decision making process and prevented Obamacare's development in the United States. The fate of Obamacare depends on whether political elites and different stakeholders can mitigate disagreements, cooperate with each other, and ultimately reach a consensus on health care reform in the near future.

The New Arab Social Imaginary: Looking at Tunisia's Case

SARAH J. M. KINCAID

Tunisia has exploded with graffiti and art since the revolution representing a paradigm shift in the country. Tunisians step up to the new figurative and literal public sphere—whether it's chatting freely about politics in coffee shops off the main drag Habib Bourguiba, their disagreeing with a comment on their Facebook feed, or displaying art in public not approved by the ministry of culture. The enforced cultural, political and civic silence of the Ben Ali regime has be broken. The 2011 uprisings that swept across the Middle East and North Africa have raised the questions: Is democracy on the rise in the region? What do the uprisings mean for the next five, ten and fifty years in the region? Building on Charles Taylor's idea of "social imaginaries" this paper makes the argument that the Jasmine Revolution represents a shift in the imaginary of the Tunisian public sphere that is the backdrop of new norms, institutions, and culture in both civic and political life. We explore the nature of civil society under Ben Ali and the emerging dynamics since the revolution that provide evidence for this historical shift, especially exploring the diversification of the public sphere and its ability to create a momentum for change, beyond the January 14th protests. In addition, we explore how the public sphere, traditionally understood as a fundamental component of democracy, also poses unique challenges to democracy, stability and development.

Liberating Practice in Critical Conflict Resolution

DEREK SWEETMAN

This work, developed with Michael English (also a PhD candidate at S-CAR, but unable to attend), seeks to develop new role schema to understand the potential for intervention in systems of violence, especially those exhibiting conflict reproduction, using the Occupy protests as a case. These schema result in a new way of viewing the field of conflict resolution and who can be said to contribute to it, while also broadening the range of practices that should be considered

to be part of intervention practice. Drawing from the insights of James Laue and Gerald Cormick on community intervention roles, we see the intervention project as occurring through at least one of many possible roles, each of which is laden with academic and ethical assumptions that may not be compatible. However, when viewed as a collection of practices (an apparatus), they can be seen to contribute resolving systemic contradictions that support and encourage conflict and oppression. This view of liberated practice is, at present, the only way available to conceptualize a practice of systemic transformation within conflict resolution and has strong ramifications for ongoing research and practice.

The Economics of the Internet Black Market

JULIA RENEE NORGAARD

We provide an extensive analysis of the Deep Web, using data from the Internet black market site, The Silk Road, which is an encrypted online marketplace that employs crypto currency and functions over the Tor network. Utilizing a modeling technique that is suggested by trade auction theory where parties, buyers and sellers, have transparent reputations, we investigate how this model functions if both parties have observable reputations. Further analysis of the seller's reputation gives us insights into the factors that determine the prices of goods and services in this black marketplace. Our data set is parsed from the Silk Road website and covers an 11 month time period, from November 2013 to October 2014. We use cannabis listings only. We demonstrate that, due to self-enforcement mechanisms and the influence of reputation, the online marketplace has been operating without governmental taxation or regulation and is functioning steadily. Using our findings as a prime example, we discuss the robustness of spontaneous order with respect to the Deep Web as an emergent marketplace.

A Conceptual Model for Reducing the Impact of Slums

RON MAHABIR (PRESENTER)
PEGGY AGOURIS

More than one billion people currently live in slums. Their growth is happening at unprecedented rates and leading to the massive rise of vulnerable communities. Slums are usually viewed as areas of extreme poverty and neglect and further, as a retroactive step to progress. Although numerous efforts have been made to manage the presence of slums, these approaches still continue to fail. These failures are in part due to unsustainability and lack of flexibility in many of these approaches, which cannot be transferred to other slum locations. This paper presents one approach for reducing the impact of slums using the World Wide Web

as a medium to provide economic opportunity to slum dwellers through connection to the rest of the world.

SCIENCE

Regression Model to Detect Flood Impact on Corn Yield using Remote Sensing

RANJAY MAN SHRESTHA

Flooding has many destructive attributes when it occurs in a particular area. It not only brings a direct impact on physical infrastructures such as houses, roads, buildings, etc., but also it triggers other disasters such as landslide. One of the major damages it causes is in agriculture, especially during the growing season. As farmers are highly depended on crop damage compensations from government agencies and/or insurance companies, it is extremely important to estimate these damages in a timely manner. The old, traditional method of visiting the field and estimating the damages can be highly costly and time consuming due to limited access on the field. Various remote sensing techniques and products have been utilized in the past to overcome these challenges. This research utilized MODIS weekly Normalize Difference Vegetation index (NDVI) product to detect and further quantify flood damages on Corn in the US. Using weighted average of pure corn pixels (>90%) masked by the LandSat Crop Data Layer data, country level flood loss assessment was achieved. Initial flood detection was based on time-series contrast and comparison of growing season's weekly NDVI between flood year and past 12 years average (2000 – 2012). With the highly significant R^2 value of 0.85, the regression analysis (30 cases) model showed extremely good linear relation between the NDVI and corn yield. Furthermore, small Leave-One-Out Cross Validation (LOOCV) error (0.48) along with smaller statistical error indicators, the accuracy of the model was further validated. Finally testing the predictability of the model with 10 new cases, the average relative error of the model was 4.47% only.

Molecular Identification of the Wood Thrush Diet and Validation of a Protocol for Studies of Avian Diets

DANA N. McCOSKEY

DNA barcoding markers and next-generation sequencing (NGS) show great promise in applications to food web studies. By extracting mixed community DNA from an animal's scat or stomach contents and then using polymerase chain reaction (PCR) and NGS with public reference databases, this method can identify prey species DNA while overcoming limitations of traditional foraging studies. For example, field observations are both time and labor intensive and biased by the detectability of focal species. Likewise, scat and stomach content analyses are labor intensive, require expert knowledge of prey morphology, and can be biased by differences in digestibility of prey. We tested the efficacy of these methods to quantify diet diversity and breadth for a declining neotropical migratory bird, the wood thrush (Hylocichla mustelina). We compared species detected in partially digested remains to those found with an NGS molecular method. We then compared molecular results from scat samples and stomach contents from the same individuals, to determine how much information was lost during digestion. The success of this approach strongly depends on data generated by universal molecular markers, the processing of samples, and if information is lost during digestion. Our data helped to validate a low impact molecular method that improved our understanding of the wood thrush's niche and its application to studies of other bird species.

Characterizing the Effect of Bortezomib on Rift Valley Fever Virus Multiplication

FORREST KECK

This thesis investigates the FDA-approved cancer drug Bortezomib, characterizing its use as a novel application in Bunyavirus antiviral therapy. Rift Valley Fever virus (RVFV) belongs to the family Bunyaviridae and is a known cause of epizootics and epidemics in Africa and the Middle East. With no FDA approved therapeutics available to treat RVFV infection, understanding the interactions between the virus and the infected host is crucial to developing novel therapeutic strategies. Here, we investigated the requirement of the ubiquitin-proteasome system (UPS) for the establishment of a productive RVFV infection. It was previously shown that the UPS plays a central role in RVFV multiplication involving degradation of PKR and p62 subunit of TFIIH. Using the FDA-approved proteasomal inhibitor Bortezomib, we observed robust inhibition of intracellular and extracellular viral loads. Bortezomib treatment did not affect the nuclear/cytoplasmic distribution of the non-structural protein NSs. However, the ability of NSs to form nuclear filaments was abolished as a result of Bortezomib treatment. In silico

ubiquitination prediction analysis predicted that known NSs interactors (SAP30, YY1, and mSin3A) have multiple putative ubiquitination sites, while NSs itself was not predicted to be ubiquitinated. Immunoprecipitation studies indicated a decrease in interaction between SAP30 – NSs, and mSin3A – NSs in the context of Bortezomib treatment. This decrease in association between SAP30 - NSs also correlated with a decrease in the ubiquitination status of SAP30 with Bortezomib treatment. Bortezomib treatment, however, resulted in increased ubiquitination of mSin3A, suggesting that Bortezomib dynamically affects the ubiquitination status of host proteins that interact with NSs. Finally, we observed that expression of interferon beta (IFN-β) was increased in Bortezomib treated cells which indicated that the cellular antiviral mechanism was revived as a result of treatment and may contribute to control of viral multiplication.

Hormonal Assessment of Morbidly Obese Cohort with Non-Alcoholic Fatty Liver Disease (NAFLD)

MASSIH ABAWI

Background and Aim: Recently, various studies have suggested a role for Vitamin D deficiency in the pathogenesis of NAFLD. However, neither the exact effects of Vitamin D, nor its molecular targets in the liver have been studied well. Our aim was to assess the role of Vitamin D and related hormones in morbidly obese patients with NAFLD.

Methods: Fasting serum samples, liver biopsies, clinical and laboratory data were collected from 185 obese patients with biopsy-proven NAFLD who underwent bariatric surgery. All liver biopsies were interpreted by a single hepatopathologist. Serum samples were ELISA-assayed for 25-(OH)-Vitamin D3 (Alpco, Salem, NH), for M30 (Peviva, Broma, Sweden), PTH levels (Alpco, Salem, NH) and Vitamin D binding protein levels (R&D Systems, Minneapolis, MN). ASBMR criteria for Vitamin D deficiency were used. Descriptive statistics and Mann-Whitney Utests were calculated. Correlations were assessed both by Pearson's coefficient and non-parametric rank test. Significance of trends was evaluated using Chi-square tests.

Results: A total of 185 biopsy-proven NAFLD patients (42.9% NASH, 32.2% with type 2 diabetes, age 47.7 +/-11 years, BMI 46.4 +/-11.5, AST 28.4 +/-43.8U/L, ALT 33.4 +/-25.2U/L, 26.5% advanced hepatic fibrosis as defined by fibrosis stage ≥ 2) were included. Vitamin D levels were found to negatively correlate with BMI (r=-0.284, p<0.0001) and the levels of PTH (r=-0.298, p<9.7e-5) and positively correlate with the presence of histologic NASH (r=0.26, p<0.0004) and higher stages of fibrosis (r=0.16, p<0.03). The levels of the apoptosis biomarker M30 also correlated with both the presence of histologic NASH (r=0.28, p<0.00016) and the presence of fibrosis (r=0.36, p<1.07e-6), but not with BMI. The levels of PTH were positively correlated with BMI (r=0.23, p<0.003) and negatively correlated with the levels of ALT (r=-0.18, p<0.025) and triglycerides (r=-0.213, p<0.01). The levels of the Vitamin D binding protein

showed a positive correlation with the levels of triglycerides (r=0.336, p<0.0012) and a negative correlation with the degree of histologic hepatocyte ballooning (r=-0.231, p<0.02) in the liver biopsies. in addition, both Vitamin D levels (p=0.045) and Vitamin D binding protein levels (p=0.019) were significantly lower in the non-Caucasian group (n=135) within the cohort.

Conclusions: The hormonal regulation of Vitamin D metabolism is substantially modified in very obese patients with NAFLD who are undergoing bariatric surgery. Further research is needed to elucidate the roles of individual components of the Vitamin D metabolic pathway and their molecular targets in morbidly obese patients with NAFLD.

POSTERS[2]

Comparison of Quality of Life Outcomes (QALY and Cost Utility) and Clinical Outcomes in Patients Undergoing Mitral Valve Repair and Replacement

MATHUR GANDHAM

I sought to examine the comparative improvement in health status and clinical outcomes in patients undergoing primary mitral valve repair versus replacement with mitral valve disease (mitral stenosis or mitral regurgitation). We prospectively followed 44 patients with mitral valve regurgitation and stenosis who underwent primary mitral valve repair (n = 15) and replacement (n = 29) between January and March 2013. Health status was evaluated at baseline and 1, 3, and 6 months after surgery with the validated short-form 36, Echo parameters, anticoagulation management, and performed QALY and cost utility analysis. ResQuality of life scores were significantly improved after both procedures, with better improvement achieved by mitral valve repair (P < .05). For both treatment groups, scores for most of the short-form 36 domains were depressed at 1 month; however, after 3 and 6-month lags, dramatic improvements were achieved in most of the domains. For patients, who underwent repair showed significant improvement in 3 and 6-month. Clinical parameters like Ejection Fraction showed improvement in both groups with minimal difference. The adverse drug reactions (average=2.3) observed in replacement due to lifetime anticoagulation therapy are found to decrease quality of life scores. Utility which is obtained from quality of life scores were also showed to be better in patients who underwent mitral valve repair and mitral valve replacement. Finally, the cost utility is less

---

[2] Posters are listed in the order they were described in the schedule. Poster sessions were on display throughout the conference but special time was given to their viewing during lunch.

for mitral valve repair when compared with mitral valve replacement. Our study suggests that after mitral valve surgery, there is significant improvement in health status and QALY, especially in patients undergoing mitral valve repair. The cost required for obtaining one Quality adjusted life year with a better utility is less for mitral valve repair when compared with mitral valve replacement.

Structural and Functional Impact of Amino Acid Substitution on Calmodulin Binding in Cardiac Myocytes

MATTHEW McCOY

Calmodulin (CALM) is an important protein involved in numerous signaling processes, acting through induced conformational changes in response to local calcium concentration. In the cardiac myocyte, CALM binds to several important components involved in excitation, in particular L-type Calcium Channels (LTCC), Cardiac Ryanodine Receptors (RYR2), and Calcium/Calmodulin-dependent protein Kinase II (CaMKII). CALM plays a role in LTCC and RYR2 channel dynamics through direct binding interactions and through CaMKII-dependent phosphorylation. Recent studies into the impact of specific single nucleotide polymorphisms (SNPs) in CALM have been linked to specific changes in the behavior of LTCC's and RyR2's and also to various cardiac disease states (e.g. Long QT Syndrome and Catecholaminergic Polymorphic Ventricular Tachycardia). In addition, additional CALM SNPs have been observed in publicly available genomic databases based upon genomic sequencing of the general human population and these SNPs that have not yet been functionally classified. Using a computational mutagenesis approach based on Delaunay tessellation and statistical geometry, the impact of specific SNPs on the structural stability of CALM-binding interactions has been predicted. These predictions indicate the likelihood that a specific SNP mutation alters CALM structure and thereby its function. Results indicate certain SNP mutations have a differential impact on CALM binding stability to its various targets. Deeper analysis of CALM structure suggests the possible underlying mechanism by which these mutations can cause cardiac disease and may explain why certain mutations correlate with a particular disease state.

The Impact of Residency Programs on Clinical Decision-Making and Leadership Skills among New Saudi Graduate Nurses

REEM NASSAR AL-DOSSARY

Health care institutions have adopted residency programs to help new graduate nurses to become fully competent and transition from student nurses to independent practicing nurses and bedside leaders. Nurse residency programs are reported to have proven beneficial and positive effects on new graduate nurses. The purpose of this exploratory, descriptive study was to assess the impact of residency programs on the clinical decision-making and leadership skills of new Saudi graduate nurses who had completed a residency program, and new Saudi graduate nurses who did not participate in residency programs.

A convenience sample of n = 98 new graduate nurses was collected from three hospitals in Saudi Arabia. The findings revealed a significant difference between the residency program group and the non-residency program group in clinical decision-making (t = 23.25, p = 0.000) and leadership skills (t = 10.48, p = 0.000). The clinical decision-making regression model explained 86.9% of the variance in total clinical decision making by the differences in age, overall GPA, and enrollment in a residency program. In addition, the clinical leadership skills regression model explained 60.6% of variance in total clinical leadership skills by the differences in age, overall GPA, total clinical decision-making scores, and enrollment in a residency program.

This study is one of the first such studies that examined the impact of residency programs on clinical decision-making and leadership skills of new Saudi graduate nurses who completed a residency program. The findings of this study indicate that there is a need to implement more residency programs in hospitals of Saudi Arabia. It is imperative that nurse managers and policy makers in Saudi Arabia consider these findings to improve nurses' clinical decision-making and leadership skills, which will in turn improve patient care.

Public Health Accreditation

ZOYA BUTT

This poster highlights the work that I conducted over the summer during my practicum experience with the Fairfax County Health Department in the office of Strategic Planning. Fairfax County Health Department is in the early stages of undergoing accreditation by the Public Health Accreditation Board (PHAB) and requires that Health Departments meet a set of Standards and Measures in order to qualify for Accreditation. The Health department proves that they meet these requirements by showing evidence of existing programs via documentation and

evidence that portray the department's dedication to improving the health of its residents and promotion of healthy communities. The poster outlines how I helped facilitate the process through meeting with various heads of the department in order to help gather evidence for accreditation.

Audiences of Today, Donor Base of Tomorrow

(VANESSA) YIJIN LIU

Fundraising, in essence, is relationship building. In order to lead audience members to the donor level, arts organizations should bring potential donors into the "family," develop their interest, and get them involved. In recent years, the public's interest in full-season subscriptions has waned due to the fact that people have become more spontaneous in choosing their entertainment options and have been less likely to commit months in advance for specific dates, or for an entire series of performances. Therefore as an alternative, membership plans have sprung up in response to this cultural shift. The membership concept gives people a sense of belonging and provides them with a range of benefits without requiring commitment to specific programming or frequency of attendance. Flexibility and involvement make membership distinct from other forms of marketing. However, one of the challenges that arts organizations face while they seek donations from current audience members is to identify which consumers are likely to become donors in the future. Based on customer relationship management literature, models have been developed to allow organizations to predict prospective donor involvement. This research uses Steppenwolf Theatre Company as a case study to examine factors that influence donation willingness by dint of the following three models: satisfaction-profit chain, ACSI Model, and RFM value model.

What Drives Legal Decisions? Prefrontal Cortex and Temporal Pole Connectivity in Third-Party Punishment: Functional MRI and Granger Causality Mapping Evidence

GABRIELE BELLUCCI (PRESENTER)
SERGEY CHERNYAK
MORRIS HOFFMAN
GOPIKRISHNA DESHPANDE
OLGA DAL MONTE
ANJANI KUMAR
KRISTINE M. KNUTSON
JORDAN GRAFMAN
FRANK KRUEGER

Third-party punishment (TPP) for norm violations is an essential deterrent in large-scale human societies, and builds on two essential domain-general cognitive functions: evaluating legal responsibility and determining appropriate punishment. Despite converging evidence that TPP is mediated by a specific set of brain regions, little is known about the effective connectivity of the underlying neural network. Applying parametric fMRI in conjunction with multivariate Granger Causality Mapping (GCM), we asked healthy participants to estimate how much punishment a hypothetical perpetrator deserved for intentionally committing criminal offenses varying in levels of harm. Our fMRI results replicated the mapping of TPP-relevant brain regions including the mentalizing network for evaluating legal responsibility and the central-executive network for determining appropriate punishment. Our parametric fMRI analysis demonstrated that activation of the dorsomedial PFC (dmPFC) was associated with the degree of punishment. Our GCM results showed that the medial prefrontal cortex (mPFC) emerged as the driver of the TPP network. The dmPFC uniquely projected outputs to all other brain regions and reciprocally connected to the ventromedial PFC (vmPFC), which uniquely received inputs from all other brain regions. The dmPFC-vmPFC circuit serves as a hub that integrates information across TPP-related brain regions to evaluate legal responsibility and to determine the appropriate degree of punishment. These results advance our understanding of the organizational elements of the TPP network and provide better insights into the mental states of judges and jurors tasked with blaming and punishing legal wrongs.

The Design and Synthesis of Sulfonamide Analogues as Inhibitors of the Mitochondrial Citrate Transport Protein

KYU AH KIM (PRESENTER)
MARIA LAURA AVANTAGGIATI
MIKELL PAIGE

The development of potent candidates for the treatment of cancer is an urgent public health priority. The mitochondrial citrate transporter gene levels are increased in human cancers and its inhibition results in antitumor activity. Therefore, the mitochondrial citrate transport protein is a potential therapeutic target in cancer. In order to develop inhibitors of the mitochondrial citrate transport protein, a series of sulfonamide-based analogues were designed and synthesized. In particular, one of the analogues showed higher potency in inhibiting the mitochondrial citrate transport protein than the previously identified compound ZINC 792949.

Analyzing the U.S State Department's Utilization of Social Media for International Education Awareness in West Africa

AMY ANSONG

The use of the mobile phone has risen dramatically, and Africa has the second leading mobile market in the world. While mobile phone usage has increased, so too has the use of social media. Twitter, Facebook, Instagram, and YouTube are used by millions worldwide to interact and share information with friends and family on a daily basis. The mobile phone, together with the increased access to the internet, makes it easy to receive and share information via social media platforms.

U.S government agencies have taken notice of the effectiveness of social media and have started to use it to reach target audiences. The U.S Department of State, through EducationUSA, is using social media to connect with youth, educating them about the educational opportunities in the United States, and encouraging them to study abroad. With over 170 advising centers throughout the world, EducationUSA strives to reach students and provide vast amount of resources to students in order to help them make clear decisions about studying abroad.

In West Africa, many of the EducationUSA centers are in the country's capital. Therefore, students who live in rural areas do not have the immediate means to access the centers to retrieve the information they need. By utilizing social media, the U.S State Department is able to reach students in remote areas, and keep interested parties up to date, in real time, regarding educational information and opportunities abroad.

The purpose of this study is to analyze the social media platforms being utilized by the State Department in West African countries in order to examine their outreach and the information they are sharing with students. This study examines the ways in which the State Department is teaching West Africans about America, American culture and education, through the use of social media.

~BEST POSTER~
A Narrative History of International and Multicultural Student Engagement through the Cosmopolitan Clubs

SHAUN MICHAEL MARSH

The Corda Fratres Association of Cosmopolitan Clubs was the first extensive organization across universities to try to support the many overlooked needs of international students and create an overall sense of belonging and critical international learning experience for both American and international students. In spite of, and at times affected by race and gender based discriminatory practices in the early 1900s, Cosmopolitan Clubs served as a cross-cultural bridge for students, welcoming people of all backgrounds at most of the schools where the organization was located. Also, it often took the responsibility of acclimating international students to their new environs before any official international offices or representatives existed on American campuses. Unique to Cosmopolitan Clubs, they were student led and they came close to developing a cohesive international student movement for a short time before World War I. The purpose of this presentation is to provide a holistic and objective examination of the early Cosmopolitan Clubs and their collective efforts based on a comprehensive historical examination of primary sources from eleven American university archives. This study also reveals how their founding and development as student-led organizations inspired or evolved into other organizations, and had aspects that are applicable to current challenges faced by university administrators and international students.

Grocery Shopping Destination Choice and Obesity: an Empirical Study of Urban Population in Bangkok, Thailand

TINAPA HIMATHONGKAM

The food retail environment is changing in Thailand. Since the late 1990s, Western-style supermarkets are quickly replacing traditional wet markets, a revolution that alters the availability of foods, prices, consumer behavior, and dietary patterns. At the same time, the country has been witnessing the rise of widespread non-communicable diseases (NCDs). Using a sample from the urban population in Bangkok where the supermarket revolution has been most pronounced, this study explores the influence of the different types of grocery store outlets and individuals' purchasing behavior on their diet quality and weight status. A sample of 248 working individuals in Bangkok completed a survey questionnaire on grocery shopping behavior and received a body composition analysis using bioelectrical impedance method. Geographical Information System provides visualization of the Bangkok retail landscape showing spatial patterns of modern and traditional grocery outlets. The Nearest Neighbor Distance (NND) analysis shows significant clustering for traditional markets ($p<0.0000$) and for modern retailers as a whole ($p<0.0000$) but not when the three largest chains, Tesco Lotus ($p = 0.06$), Big C ($p = 0.88$), and Tops ($p = 0.81$), are looked at separately. Results from an ordinary least squares analysis show statistical significance between frequent visits to modern grocery outlets and an increased consumption frequency of Western snacks ($p = 0.17$) and of sugary drinks ($p = 0.17$), controlling for age, sex, income, and education. I did not find statistical significance between five obesity measures (body mass index, percent body fat, waist circumference, visceral fat, and waist-hip ratio) and visit frequency to modern grocery retailers. The findings from this study suggest that modern grocery retailers are influencing nutrition transition in Bangkok and that the health implications must be further investigated.

Arnold Schoenberg, De Profundis, Op. 50B: A Preparation and Performance Guide using a Flipped Rehearsal Model and Original Digital Editions in Finale® and Smartmusic®

MARY-HANNAH KLONTZ

This research provides a guide to understanding, preparing and performing Arnold Schoenberg's final opus: De Profundis, Op. 50b, (1950) within the context of the Hebrew chant that inspired it and Schoenberg's other religious works. Theoretical and contextual analysis of this masterwork reveals significant discoveries relevant to an informed and accurate performance. De Profundis, Op. 50b, is a serial *a cappella* composition scored for six-part mixed chorus in Hebrew with great rhythmic and melodic independence in the vocal lines, including soprano and baritone solo

and choral Sprechstimme. Scores were created in Finale® and SmartMusic® software after thorough comparison of the manuscript to editions in print. Singers prepared for the lecture recital using a flipped rehearsal involving digital media. Assessments from SmartMusic® guided the rehearsal process. The flipped learning model focuses on individualized instruction through technology and the Internet, making Finale® and SmartMusic® ideal tools for this type of instruction. Creating the Finale file brought motivic elements to light graphically and aurally, focusing attention on every pitch, rhythm and expression marking. As a result, errors and omissions were found in the only American edition in print, which is a transcription of the original 1953 Israeli Music Publications edition. Until now, the only accurate rendition of the manuscript was the critical edition in the collected works of Schoenberg, an expensive volume intended for scholarly study rather than a performance score. As a result, the ending of most recordings of De Profundis is performed at a much slower tempo than Schoenberg intended. The tempo change occurs at the final verse; "It is He who will redeem Israel from all their iniquities." Rather than a slow hymn, the ending is a triumphant march.

Culture Shock amongst International Students in the U.S.

ANTHONY RAY

This pilot study was conducted to better understand how Korean university students cope with the stresses of American culture while studying in the National Capital Region of the United States. The study consisted of three different data collection techniques as a method of triangulation, and as an attempt to encourage interaction with participants more so than the traditional interview. The first part consisted of a questionnaire related to their friends in the U.S., while the second was in the form of a traditional interview. The third method involved asking participants to draw their own Acculturation Model based on Brown's (1987) four stages of Acculturation, and then explain what happened to them in each stage along with a corresponding timetable. The most notable theme that developed was that the student with the fewest non-Korean friends expressed the highest levels of homesickness, whereas the student with the most diverse group of friends exhibited the most stability. Other notable themes that developed were expressions of disappointment from all that participated in their English language development. All three students interviewed had come to the United States primarily to study English and claimed to be at the beginning level at the time of arrival. Yet, all three could easily conduct the interview and deal with their everyday surroundings in the U.S., but each described themselves as unhappy at their current English language ability level. Another theme mentioned by all three participants involved misunderstanding and frustration over tipping at restaurants. In addition, all three students felt the need to work illegally while living here even though they admitted that it interfered with their studies.