

MICHIGAN AGEP ALLIANCE FALL CONFERENCE

Kellogg Hotel & Conference Center
Michigan State University, East Lansing, Michigan
October 22, 2016

Student Abstracts CrossTalks & Posters

CrossTalks: 16 Student Oral Presentations

8:30 AM – 10:30 AM

Room 104 AB with Facilitator: Dr. Olga Santiago

Room 105 AB with Facilitator: Dr. Juan David Coronado

Poster Session: 22 Poster Presentations

1:45 PM - 2:45 PM

Big Ten Room BC

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Student Oral Presentation Abstracts Room 104 AB

David Torres

Michigan State University

Vanadium dioxide (VO₂) Based Micro Mirrors

We present the fabrication of the first microelectromechanical systems (MEMS) mirror devices with integrated vanadium dioxide (VO₂). VO₂ is a smart material that shows a solid-to-solid phase transition at temperatures in the vicinity of 68 °C that spans about 10 °C. During transition, the optical, electrical, and mechanical properties of the VO₂ change drastically. The change in the mechanical properties across the transition has been used to generate movement of the micro device. MEMS mirrors are microstructures with a reflective layer used to redirect incident light. These devices have been demonstrated to be useful components for various applications including: optical displays, spectroscopy, medical imaging, microscopy and others. The device consists of four actuators that control the movement of a platform with a reflective layer, where movement of individual actuators would tilt the platform (tilt movement) and synchronous movement of the actuators would increase/decrease the elevation of the platform (piston movement). The present VO₂-based MEMS mirror device is operated by sending an electrical signal through integrated resistive heaters (Joule heating), and its behavior is characterized across the phase transition of VO₂. These results allow for a model that can be used to design and control VO₂-based mirrors.

Deanna Cabada

Loyola University of Chicago

Do Women Leaders Promote Effective Sustainability Strategies? Gender, Leadership, and Sustainability in U.S. Health Care Corporations

This study investigates U.S. health care companies to explore whether having more women in corporate governance correlates with these firms' sustainability engagement. The research examines how Newsweek's 2016 Green Rankings position n=33 firms within three health care sectors and explores their corporate governance profile using data from the companies' corporate sustainability reports, websites, and other business statistics. We assess whether companies ranked highly by Newsweek are more likely to have women on boards of directors, board-level sustainability committees, women chairs of those committees, women as chief executives and other C-suite executives, and chief sustainability officers, compared to firms ranked lower by Newsweek. Results indicate an uneven commitment to sustainability issues across sectors, plus a lack of top level women executives in most of these health care companies. Implications of these results for the health care industry are discussed.

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Cameron Herman
Michigan State University

Exploring Urban Youths' Perceptions of a Recreation Center in Atlanta, Georgia

Declining economic support from federal and state governmental systems has reduced the availability of recreation centers in many cities. Many scholars and public officials view recreation centers as critical sites of supplemental development for youth, particularly in urban environments where resources and opportunities are limited. Under the 'Centers of Hope' initiative, the municipal government of Atlanta, Georgia, has reopened and reinvested in its recreation center facilities to provide a safe place for young people during after-school hours. However, the value of this initiative to the youth it intends to serve is unclear; the perspectives of young people themselves are often absent from the discussion.

This presentation draws on early findings from an ongoing research project which explores urban youths' perceptions of a municipally-funded recreation center in Atlanta, Georgia, to understand the role of this institution in their lives and ecological contexts. Semi-structured interviews with youth (ages 13 – 20) reveal that the recreation center operates as a safe-haven from, and alternative to, the 'streets.' Additionally, it's a place where many have cultivated supportive relationships with adults who they feel care about them. Interview data further illuminates structural and interpersonal factors mediating youths' access to the recreation center in ways that potentially limit the reach of the city's youth development policy initiative. These findings may indicate that social institutions designed to promote youth development can also operate in ways that re-marginalize urban youth, a social group who already exist at the periphery of city life.

Joelyn de Lima
Michigan State University

Context Matters....and Influences Student Reasoning

Applying knowledge communicated in one context to a different one is a central feature of learning. Knowledge transfer can be weakened by human biases. Similarly, minor changes in question context have also been shown to influence undergraduate student reasoning. We tested whether contextual features such as taxon and trait type influenced student reasoning about natural selection, and whether a semester of instruction could reduce contextual influences. We expected that students would construct responses that exhibited scientific reasoning to a greater extent when asked questions about a non-human animal (cheetah), and a structural trait.

Students in a large (n=160) introductory biology course were asked how a biologist would explain the evolution of traits in humans and in cheetahs. Structural traits (heel/leg bones) were contrasted with functional traits (abilities to walk upright/run fast); and these were contrasted within each taxon. Evograder (an online assessment tool) scored students' responses for the presence of 6 key concepts and 3 naïve concepts. After analysis, we found that students reason differently about humans and non-human animals, and about structural and functional traits. They are more likely to generate responses that have exclusively key concepts when the question is about cheetah and about structural traits. We also observed that students' use of scientific concepts increased and naïve concepts decreased following a semester of active, learner-centered instruction. Our findings suggest that certain features of instructional design have potential to promote transfer and reduce contextual biases associated with learning about natural selection.

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Isola Brown
Michigan State University

Regulation of the Antioxidant Glutathione by Enteric Glia During Inflammation

Enteric glia are a unique type of peripheral neuroglia that surround and support neurons in the enteric nervous system, which controls gastrointestinal function. Enteric glia serve a dichotomous protective/ pathogenic role where activated glia contribute to neurodegeneration via mechanisms involving oxidative stress (Brown et. al, 2015). Conversely, the ablation of glia leads to neurodegeneration and altered gastrointestinal (GI) motility patterns (Aubé et. al, 2006; Abdo et. al, 2010). This suggests that a loss of glial neuroprotective factors such as reduced glutathione (GSH) may contribute to neurodegeneration in disease. Here, we investigate the role of glial GSH in GI pathology. Specifically, we tested the hypotheses that glial GSH content is dysregulated during GI inflammation and that inhibition of glial GSH production can contribute to neurodegeneration. We measured neuronal and glial content of reduced/oxidized glutathione (GSH/GSSG) using antibodies against glutaraldehyde-linked and free GSH/GSSG. We measured neuronal survival by immunohistochemistry and inhibited GSH synthesis using Buthionine Sulfoximine (BSO), an inhibitor of the GSH synthesis enzyme glutamyl-cysteine ligase. We induced inflammation in vivo using 2,4-dinitrobenzene sulfonic acid (DNBS) and in situ using the P2X7 receptor (P2X7R) agonist BzATP. All experiments used male C57Bl/6 mice, aged 8-10 weeks. Data was analyzed using a Student's t-test or one-way ANOVA as appropriate.

Total glial glutaraldehyde-linked GSH/GSSG content was not altered following in vivo DNBS colitis ($p=0.81$). Free neuronal oxidized glutathione (GSSG) was increased during DNBS colitis ($p<0.001$) with no corresponding change in neuronal reduced glutathione (GSH), thus increasing the ratio of oxidized/reduced glutathione (GSSG/GSH) ($p<0.05$). Surprisingly, the ratio of neuronal oxidized/reduced glutathione did not increase during an in situ model of neuroinflammation with the P2X7R agonist BzATP. In situ inhibition of endogenous GSH synthesis decreased myenteric plexus neuronal density ($p<0.01$) but did not potentiate P2X7R mediated neuron loss. Our data suggests a role for glial GSH where glia produce neuroprotective GSH in response to increased neuronal oxidative stress during GI pathophysiology. Inhibition of this protective capacity of glia with BSO makes enteric neurons more susceptible to neurodegeneration and may be a potential mechanism explaining the susceptibility of specific neuronal populations to oxidative stress and neurodegeneration during inflammation.

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Qiana Green

Michigan State University

(Re)Learning what it means to Be: Understanding how African American Graduate Student Women Make Meaning through Study Abroad

Previous studies have illuminated some of the experiences of Black women who study abroad (Chapman, 2007; Henry, 2014; Sol, 2014; Willis, 2012), but gaps in the literature exist relative to sampling and methods. First, previous studies only examined undergraduate women's experiences. Undergraduate meaning making of study abroad focuses on self-identity, personal desires, and experience (Dirkx, Spohr, Tepper, & Tons, 2009). For graduate students, "the sense-making process reflects a complex relationship between academic or professional goals and self-formative processes that seem inherent to adult learners" (Dirkx et al., 2009). Second, previous studies have utilized semi-structured interviews and surveys. Examining African American graduate student women's meaning making of study abroad through dialogue with one another requires more in depth inquiry.

This dissertation is guided by the following primary research question: How do graduate-level self-identified African American women make meaning of study abroad? I utilized sista circle methodology (Johnson, 2015) for this dissertation. Sista circles are simultaneously a qualitative research methodology and provide a supportive space for Black women (Johnson, 2015). Participants consisted of 23 African American women currently enrolled in a graduate program in the United States and who studied abroad during their current graduate program.

Preliminary results indicate a nuanced understanding of lived experience and social positionality arises from African American graduate students as a result of their study abroad experiences. Through sista circles, participants co-constructed a meaning of Blackwomanhood that moves beyond the national container (Shahjahan & Kezar, 2013) and complicates how they previously understood their social positionality.

Darya Owens

Wayne State University

The Process of Teachers Professional Knowledge

A research collective enlist teachers' responses to opinions of instructional practices. In observations of teachers' instructional practices, investigations reveal their role and impact within urban educational programs. Researchers contest that there are tensions, negotiations and articulations of various innovations and research methods that seeks the importance of examining individualized instruction as a process designed by teachers who take time to address the needs of students using integrated methods of scripted lessons and trajectory towards competency. Enacting applications of educational resources; teachers' professional knowledge is demonstrated. The purpose of this examination is to continue discussion of teachers' professional knowledge within the context of urban educational programs. Qualitative research focused on teachers' perspectives of teaching and learning and how individualized instruction is inseparable from urban educational programs. Qualitative work converges upon questions and approaches that are shared as teachers demonstrate individualized instruction. The outcome of such is teachers' demonstration of professional and personal development within the systems of urban educational programs. Additionally there are discussions of teachers exercising their own judgment to integrate methods of scripted lessons and individualized instruction.

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Duduzile Mashinini
Western Michigan University

Philosophical Immunization Exemption Rates Among Kindergartens– The Effect of Michigan’s 2015 Nonmedical Exemption Law

The state of Michigan has had one of the highest vaccine exemption rates in the nation, and in recent years has experienced re-emergence of vaccine preventable diseases (VPD). These negative VPD trends prompted Michigan health officials to enact a policy in 2014 making it more difficult for parents to obtain a non-medical/philosophical vaccination exemption from mandatory school entry starting with the 2015 school year. This research explored what factors were associated with non-medical/philosophical exemption rates at the kindergarten level as a result of Michigan’s new immunization exemption law. Using preliminary exemption data obtained from Michigan’s Department of Health and Human Services, this research examined philosophical exemption rates of the 1,998 public/private schools in the state before and after the law was implemented in 2015. Results from this study indicated that the new law was successful in decreasing philosophical exemption rates statewide and further analysis indicated that high philosophical exemption rates were associated with rural private schools as well as low Free and Reduced School Lunch (FRSL) rates among public schools.

Arissa Koines
Loyola University of Chicago

First-generation, African American Student Response to Academic and Social Support Services

The population in my study is African American, first generation students at Loyola University of Chicago. The key concepts of my research question is to analyze how this population of students have utilized the academic and social support services provided by the university and how it has affected their experiences on campus. Furthermore, the research question aims to understand how students make sense of, and respond to academic and social support services. This area of research would be interesting to faculty and staff at institutions of higher education with information regarding methods to help this marginalized population. By examining social and academic support available for these students, perhaps methods, tools, and programs can be adopted by universities in order to increase the matriculation and retention of African American, first-generation college students. Further, sociologists may be interested in this topic of study because African American, first-generation students face a matrix of oppressions racially and socioeconomically which might affect their retention and graduation rates in higher education. The data collection of this project involves qualitative research in order to conduct in-depth interviews of this population.

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Student Oral Presentation Abstracts

Room 105 AB

Laura Prieto

Loyola University Chicago

"All": The Virtual Dance Ensemble and Artists with Parkinson's Project

"All" is a practice-based art-making endeavor that explores movement improvisation and embodied storytelling for the creation of an original dance film. Our creative practice lies within the field of performative practice based research which draws on subjective, interdisciplinary, and emerging research methodologies within a performative paradigm. The project addresses the question of sharing and reflecting on personal narratives through movement, as well as contemporary design principles, and the reading of choreography as "text". "All" is part of the Virtual Dance Ensemble, a video project aimed to transform the idea of community by bringing individuals from vastly different backgrounds together through the joy of movement. The film will be produced by the filmmakers of the Virtual Dance Ensemble. The ensemble of dancers, some of whom are living with Parkinson's disease, will be filmed performing movement developed throughout a dance class held once a week for six weeks at Loyola University of Chicago. The focus of the class is on improvisation and embodied storytelling. "All" also includes an investigation into how technology allows dance artists to present work in non-traditional "theater" spaces. The work explores the notion of collaboration including crowd sourcing in the creative process. We hope to better understand how the creative process and the production of a work of art i.e. the dance film, can transform the idea of community among dance artists from diverse backgrounds.

Carmelita Foster

Western Michigan University

Measuring Activation in Diverse, Depressed Adolescents

Behavioral Activation is a contemporary behavioral therapy designed to activate clients by scheduling activities that are functional and informed by the client's life values (Kanter, Busch, & Rusch, 2009). Research evidence suggests that Behavioral Activation is a promising treatment for depression in adolescents; however, there is a paucity of research on whether or not Behavioral Activation actually increases activation levels. This study utilized a single-subject, A/B (stepped care) design, and measured the effectiveness of Behavioral Activation with 13 depressed adolescents between the ages of 14 and 18. All participants received varying amounts of MIA (Phase A) or VBBA (Phase B) based on their scores on the Behavioral Activation for Depression – Short Form (BADSF) rating scale. 88% of the participants who entered MIA met clinically significant change on the CDRS-R. After correcting for baseline trend during MIA, 3/7 participants showed statistically significant change or trends towards change on the BDI-PC. 6/7 participants demonstrated an RCI on the BADSF from A1 to A2. The weighted average across the sample showed statistically significant change $p=.01$, when correcting for baseline. 3/7 participants showed an increase in activation according to the Ecological Momentary Assessment data. Daily Activity Report data were scarce, but available data suggest that one participant had a significant increase in activation during VBBA. Only two participants showed a notable change in effort exertion from A1 to A2; one participant selected more hard choices at A2 and the other selected less. Results, consistent with previous research, suggest a need for more accurate measures of activation.

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Ninotchka Delvalle
Michigan State University

Tachykinin Activation on Enteric Glia: A Novel Mechanism of Enteric Nervous System Dysfunction in Irritable Bowel Syndrome

The Enteric Nervous System (ENS) is the major neural regulator of the gastrointestinal (GI) tract. Enteric circuits involve precise interactions between neurons and glia and abnormal ENS activity is considered a key contributor to gut motility disorders like irritable bowel syndrome (IBS). However, the role of neuron-glia interactions in functional GI motility disorders is not understood. Tachykinins are important excitatory neurotransmitters in the ENS that contribute to IBS pathophysiology. In the spinal cord, substance P (SP) and neurokinin A (NKA) release by hyperactive neurons drives reactive gliosis. We hypothesize that the activation of enteric glia by tachykinins plays an important role in neuroinflammation during IBS. We tested our hypothesis using immunohistochemistry (IHC) and calcium imaging recordings in tissue from 5-8 week old C57BL/6 male mice. Our results show that both NKA and SP are present in varicosities that surround enteric glia in the myenteric plexus. We found that this population of glial cells primarily express neurokinin-2 receptors (NK2R) (n=3 animals) which preferentially bind NKA over SP. NK1R labeling in the myenteric plexus was primarily neuronal. However, we could not exclude the possibility of expression on glia. We did not find evidence of NK3R expression in the myenteric plexus. We tested the breadth of responsiveness of myenteric glia to tachykinins such as SP and NKA in whole-mount preparations loaded with the calcium indicator dye Fluo-4. Our results show that enteric glia produce robust calcium transients in response to stimulation with NKA but not to SP (n=62 glial cells from 3 animals). To determine if tachykinin receptor activation contributes to neurodegeneration during inflammation, we stimulated enteric glia with either SP or NKA and measured neuronal packing density within myenteric ganglia. Our results show that treatment with NKA significantly reduces neuronal survival ($p=0.0416$, n=4 animals) while treatment with SP had no effect ($p=0.7171$, n=3 animals). In conclusion, our results provide strong evidence that the activation of glial NK2Rs by NKA is a novel mechanism of neuroinflammation in the ENS.

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Heather Mooney
Wayne State University

*From "Troubled Teen" to "Reformed Adult":
The Social Construction of Rehabilitation*

While low income and students of color disproportionately get caught in the school to prison pipeline, higher income and majority white students are funneled into the privatized and unregulated "troubled teen" industry. This industry claims to reform deviant adolescents and loosely consists of various total institutions like therapeutic boarding schools, boot camps, wilderness therapy programs and last chance ranches. Despite a clear legacy in the U.S. of sending children away for centuries, research is limited in establishing what constitutes residential treatment or other programs in the industry (Brooks 1972; Friedman et al. 2006; Lee 2008; GAO Report 2007; Leichtman 2006; Miller 1991; Szalavitz 2006; Wagner 2008; Zahn 2009). This work explores former middle to upper class at risk youth's experiences of the privatized "troubled teen" industry, including how they were shaped by a total institution to uncover meanings and identities formed by these "rehabilitated" adults. This case study of a West Coast therapeutic boarding school, relies on life stories and survey data from a purposeful sample of students that successfully graduated from the program. I use an organizational perspective to frame student's experiences of rehabilitation examining class-based, race based and gendered natures of these social structures. This work seeks to illuminate how adults, former "problem youth", perceived their deviance, experienced a total institution including their understanding of rehabilitation.

John Tran
Michigan State University

Making Plants More Suited for Bioenergy

Plants are a major source of biomass used in producing biofuels. The plant cell wall contains sugars that are required for ethanol conversion. However, the recalcitrant nature of lignin, a major component of vascular plant cell walls, negatively impacts the yield of sugars during the breakdown of plant biomass. Lignin reduces the effectiveness of hydrolytic enzymes used during factory processing in commercial biofuel processes thus resulting in less glucose is isolated produced from plant biomass. Yet, complete removal of lignin from plants is not possible because it is critical to plant development. The presence of lignin in plant stems enables many of its critical functions such as water transport through the vascular system and upright growth. Lignin is composed of monolignols. Monolignols are diverse and the composition for the types of monolignols varies among plant species. Monolignols are that are synthesized in the cytosol and later moved to the cell wall where they undergo oxidation to form a random polymer known as lignin. The mechanisms by which monolignols are transported to the plant cell wall are largely unknown. Several hypotheses for the monolignol translocation mechanism exist have been proposed with including the existence of a specific transporter mechanism being among them. Supporting evidence for this mechanism for monolignol transport exists as evidence for a coumaryl alcohol transporter has been demonstrated found in Arabidopsis. The aim of my project is to identify proteins that may be translocating the more abundant monolignols namely, coniferyl alcohol and sinapyl alcohol. In my project, I am interested in identifying transporter(s) for sinapyl and coniferyl alcohol, both of which are highly abundant in dicot plants compared to coumaryl alcohol. I am using gene expression profiling datasets to identify transporter candidates, which I will then test using a mass spectrometry binding assay that I am currently developing.

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Christopher Rhoades
Michigan State University

*A Genetic Approach to Characterize the
Novel Second Messenger cyclic-GMP-AMP Dependent Regulation of Chemotaxis in Vibrio cholerae*

Vibrio cholerae, a pathogenic Gram-negative bacterium responsible for the disease cholera, utilizes a complex regulatory network to regulate virulence factor expression and pathogenicity. The latest *V. cholerae* biotype, El Tor, has supplanted Classical *V. cholerae* strains notably due to the acquisition of two novel gene islands, VSP-1 and VSP-2. These novel El Tor gene islands encode additional proteins necessary for biofilm formation and chemotaxis, of which both have been linked to the increased survivability of the bacterium within the gut of a human host. While the majority of genes in these islands remain to be characterized, the gene VC1079 encodes for a dinucleotide cyclase, DncV, whose predominant product is the hybrid cyclic nucleotide, cyclic-GMP-AMP (cGAMP). cGAMP is the newest described bacterial second messenger whose function has just begun to be explored. However, it has been shown that increased intracellular concentrations of cGAMP down regulate the chemotaxis genes in El Tor. Within a host, reduced chemotaxis is critical to El Tor's pathogenicity but the molecular mechanisms involved in this cGAMP-mediated repression are unknown. We will determine this molecular pathway by inducing strong selective pressures for the evolution of chemotaxis mutants that resist cGAMP induced chemotactic inhibition. Whole genome sequencing of suppressors will reveal genes involved in cGAMP mediated chemotactic repression. Chemotactic regulation is vital to *V. cholerae* pathogenicity and knowledge gained from this research will provide clues to understanding the enhanced pathogenic capacity of the El Tor biotype and cGAMP's role in virulence.

David Walton
Michigan State University

*The Heroic Black Student:
High School Student Activism and African Diasporic Identity Construction in Post-rebellion Detroit*

The presentation chronicles the activism of a group of African American Detroit high school students between 1969-1971 who in using Malcolm X's 'Back to Africa' construct endeavored to create a new transnational African diasporic identity that they referred to as the "Heroic Black Student", formally named the Black Student Union Front (BSUF). Influenced by Ruth Simms Hamilton's characterization of "cultural workers," the chapter reveals how these high school students defined and interpreted issues and agenda setting by critically examining how they sought to address the plight and ameliorate the status of African descendants. Malcolm's 'Back to Africa' construct best suited the students' aims, goals, and purposes for looking toward Africa in the first place; which was to create an organic, yet diasporic revolutionary identity. Pressing questions that are central to this chapter include: What role did these students' conceptualization of the "African present" play in the emergence and development of their transnational African diasporic identity? How did the students conceptualize "black" and "blackness," globally, and what are their deeper meanings? How did these students formulate and construct their political identities and then use those identities in the broader and global black freedom struggle? Drawing from the BSUF's newsletter content around five topics – Pan-Africanism and Internationalism, Anti-imperialism, Anti-police brutality and security apparatuses, Proper (Liberatory) Education rooted in Pan-Africanism and Diaspority, and Community Control and Institution Building; this study is a historical study of the diasporic identity or identities that the African American Detroit high school students sought to create in the context of racialized anti-imperialist struggles in racialized societies.

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Student Poster Presentation Abstracts Big Ten BC

Alex Leon

Loyola University of Chicago

Association between Coping Mechanisms and Depressive Symptoms among Latino Children

Latino children face numerous stressors that threaten their health and well-being, leading to a higher risk for depression in comparison to other ethnic groups (Taylor & Updegraff, 2007). The way an individual copes with stress greatly influences the severity and duration of depressive symptoms (Abela, Hankin, Sheshko, Fishman, & Stolow 2012). This study examined the relationship between coping mechanisms that were reported and depressive symptoms in a sample of 104 children (60.6% girls; average age= 8.39; 96.2% Latino) and their primary caregivers (97.1% female; average age=37.13; 99% Latino). Children's coping mechanisms and depressive symptoms were reported by primary caregivers. Problem-solving, cognitive restructuring and distraction were the three coping mechanisms analyzed in this study. Results revealed that all three coping mechanisms were negatively associated with depressive symptoms when examining primary caregiver's reports on the child's coping. However, when it came to the child's reports, there were no significant correlations between the coping mechanisms endorsed and depressive symptoms. Results are discussed with regard to the implications of this research for the promotion of coping skills with Latino children who are at risk for depression.

Aliyah Beavers

Michigan State University

Black Women Faculty in Predominantly White Spaces: An Analysis from Critical Race Theory and Black Feminist Thought Perspectives

Research on women of color in the academy continues to be a growing topic. There is a fair amount of literature that reflects Black women faculty experiences on predominantly White campuses however there is a smaller amount that incorporates Critical Race Theory and/or Black Feminist Thought. This literature gap suggests there may be a lack of understanding about the role Critical Race Theory and/or Black Feminist Thought plays in defining, explaining, and interpreting the experiences of Black women faculty. Black women in the academy are faced with political and institutional barriers as well as microaggressions, macroaggressions, racism, and discrimination which can impede their ability to gain tenure and be retained as faculty members. This narrative analysis is based on current information regarding this topic as well as the stories of two Black women faculty at predominantly White institutions.

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Ashley Sanderlin
Michigan State University

Non-Pharmacological Interventions for Fatigue in Chronic Kidney Disease: A Review

Background: Obesity has been linked to lower brain volumes, cognitive deficits and the future development of dementia in middle age adults with normal cognition. Yet, the relationship of obesity and brain volume in MCI is not well known. Mild cognitive impairment is an intermediate stage between normal cognition and dementia. This study investigated the effect of BMI on regional brain volumes in MCI, and the relationship of brain volume with age and cognitive scores. **Methods:** We analyzed baseline neuroimaging, behavioral and clinical data from MCI subjects in the Alzheimer's disease Neuroimaging Initiative (ADNI) dataset (Phases-1/Go/2). The ADNI data contained over 100 regional brain volumes from MCI subjects. A total of Thirty-six cortical and subcortical regional brain volumes were selected due to previously reported relationships with either BMI or MCI, averaged between hemispheres and corrected by the total intracranial volume. A multivariate analysis of variance model compared brain volumes across three BMI groups: normal weight (NW), overweight (OW) and obese (OB). We also examined the relationship between BMI and cognitive (MMSE), functional (CDR-sum of boxes (SB)) and behavioral scores (Geriatric Depression Scale (GDS)). **Results:** The MCI sample consisted of 635 subjects; 216(34%) NW, 282(44%) OW and 137(22%) OB. The mean BMI was 27.1kg/m², age 71.9 years, education 15.9 years, and 43% were female. Obese subjects were significantly younger than NW, with lower educational attainment and a higher mean GDS score. There was a main effect of BMI on brain volume in 14 regions from frontal, cingulum, occipital, parietal and temporal regions as well as the hippocampus and amygdala. Surprisingly, regional brain volumes were significantly lower in NW subjects for all comparisons. A follow-up correlation analysis confirmed a positive association of BMI with brain volume while age was negatively associated with volume in each region. Neither MMSE nor CDR-SB differed by BMI, however all 14 significant region volumes were positively correlated with the MMSE and 12 out of 14 were negatively correlated with the CDR-SB. **Conclusions:** In this study, NW MCI subjects were unexpectedly older with lower regional brain volumes compared to OW/OB subjects. This study may provide neurological evidence for recent longitudinal studies that have demonstrated a protective effect of an OW BMI on MCI and increased likelihood of NW conversion to dementia. Understanding the interactions of weight, age and cognition may be important in assessing neurologic vulnerability and dementia risk in individuals with MCI.

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Bincy Joshwa
Wayne State University

Non-Pharmacological Interventions for Fatigue in Chronic Kidney Disease: A Review

Chronic Kidney Disease (CKD) is characterized by a gradual loss of kidney function over time. Fatigue is a common, unpleasant symptom that occurs with CKD, particularly for patients in the late stages of the disease (Stage 4 and 5). The prevalence of fatigue ranges from 42-92% of patients with Stage 4 and 5 CKD. Reduced quality of life and premature death have been reported in CKD patients reporting fatigue. Since medicines improving fatigue are not free from side effects, there is a need to focus on non-pharmacological therapies that help in reducing fatigue in CKD patients.

Purpose: To present a review and summary of non-pharmacological interventions used to reduce fatigue in patients with CKD.

Seven electronic databases were searched- CINAHL, MEDLINE, PubMed, Health and Psychosocial Instruments, PsycARTICLES, PsycINFO and Abstracts in Social Gerontology from January 2004 until October 2015. Keywords were intervention, fatigue, kidney, and non-pharmacological. Inclusion criteria were studies that were randomized controlled trials (RCT) or used quasi-experimental design, used non-pharmacological interventions; interventions were tested in patients with CKD, had fatigue as a primary outcome, and were published peer-reviewed articles written in English. Initially 141 articles were retrieved based on their titles/ abstracts; 22 articles were considered; nine met the inclusion criteria. After reviewing reference lists, three more articles were identified. Two were excluded; one was a duplicate and one did not meet inclusion criteria. A total of 10 articles comprised the review sample.

Results: None of the studies were conducted in the United States. Nine studies included patients with Stage 5 CKD, on hemodialysis, and one involved patients with Stage 1-4 CKD. No studies examined fatigue in patients on Peritoneal Dialysis. Eight of the studies were RCTs, two were quasi experimental. Five studies used the Piper Fatigue Scale. Acupressure was used in four studies, while four studies used exercise (leg ergometry exercise, leg exercises, qigong training, physical and mental exercises) and two used educational interventions. Along with acupressure, massage was included in two studies, and one used Transcutaneous Electrical Nerve Stimulation as an adjunct. Significant results were found in all 10 studies, demonstrating that non-pharmacological interventions can significantly reduce fatigue in patients with CKD.

Fatigue is understudied in patients with CKD, especially those in Stage 4 or on peritoneal dialysis. The few studies conducted provide beginning evidence that non-pharmacological interventions can significantly reduce fatigue in patients on hemodialysis. However, these studies need to provide adequate procedural description that can be helpful in replicating such studies.

Implications: Nursing assessment for the presence of fatigue needs to be stressed upon in CKD patients. Interventional studies focusing on non-pharmacological strategies need to be tested in larger populations as significant results have been shown when these strategies were implemented in controlled conditions. These strategies could be adopted for fatigued patients suffering from chronic illnesses like CKD.

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Carl Fields

Michigan State University

On Variations of Massive Stars with MESA

We explore the variation in single star $15\text{--}30 M_{\odot}$, non-rotating, solar metallicity, pre-supernova MESA models due to changes in the number of isotopes in a fully-coupled nuclear reaction network and adjustments in the mass resolution. We quantitatively detail the range of core masses at various stages of evolution, mass locations of the main nuclear burning shells, electron fraction profiles, mass fraction profiles, burning and stellar lifetimes, and compactness parameter at core-collapse for models with and without mass loss. Choice of mass resolution dominates the variations in the structure of the intermediate convection zone and secondary convection zone during core and shell hydrogen burning respectively, where we find a minimum mass resolution of $\approx 0.01 M_{\odot}$ is necessary to achieve convergence in the helium core mass at the $\approx 5\%$ level. On the other hand, at the onset of core-collapse we find $\approx 30\%$ variations in the central electron fraction and mass locations of the main nuclear burning shells, a minimum of ≈ 127 isotopes is needed to attain convergence of these values at the $\approx 10\%$ level.

Catherine Montgomery

Loyola University of Chicago

The Effect of Family Structure on the Relationship of Parental Support and Involvement and Sense of Belonging in School in African American Male Adolescents

The purpose of the current study is to examine the effect of family structure as a moderator of the relationship between parental support and involvement on sense of belonging in the school setting in African American male adolescents. It is expected that the association of parental support and involvement to sense of belonging in school will be stronger for African American boys living with both parents than those living in a single-parent household. Participants will include 234 African American male adolescents (mean age = 15.21, SD = 1.08). Participants completed the Psychological Sense of School Membership Scale (Goodenow, 1993), The Inventory of Parent and Peer Attachment (Greenberg & Armsden, 1987), the Parent Involvement in School measure (Tolan et al., 2006), and a demographic form.

As expected, hierarchical regression analyses demonstrated that parental support ($\beta = .17$, $p = .001$) and parental involvement in school ($\beta = .569$, $p < .001$) were significantly associated with boys' sense of belonging in school. Analyses also showed that, inconsistent with predictions, family structure did not moderate the association of parental support or parental involvement to sense of belonging in school. Findings from the current study could lead to an enhancement or creation of programs for the support of students as well as their families to produce a greater sense of belonging in school.

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Chartanay Bonner
Michigan Technological University

Effects of Metal Ions on the Antimicrobial Properties of Silver Nanoparticles

Engineered silver nanoparticles (Ag NPs) possess antimicrobial properties toward several strains of antibiotic-resistance bacteria. The increased manufacture and use of Ag NPs has led to their increased presence in the environment as pollutants. The interaction of Ag NPs with other pollutants influences their surface properties, aggregation state, stability and consequently, their toxic response toward microbial pathogens. This project investigates the potential synergetic effects of Ag NPs, heavy metal ions (Cd^{2+} , Hg^{2+} , and Pb^{2+}), and humic acid (HA) as antimicrobial agents toward bacterial strains. The influence of heavy metal ions adsorbed on synthesized 3nm Ag NPs surface and Ag ions in the presence of gram positive *S. aureus* and gram negative *E. coli* was analyzed. Ag NPs were characterized by Transmission electron microscopy (TEM) and Uv-Vis spectroscopy to support size and stability of NPs. Optical Density absorbance was analyzed to determine the toxicity response toward bacterial strains. The presence of Ag NPs, HA, and heavy metals displayed varying toxicity response to each bacterial strain. Hg^{2+} displayed the highest toxicity over time. The presence of Ag NPs promoted the toxicity response of Cd^{2+} and Pb^{2+} toward bacterial stains. The study suggests that the mixture of contaminants increase toxicity toward microorganisms present in the environment.

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Christina Nazar
Michigan State University

Youth Co-Authored Multimodal Case Studies of Engineering Work Over Time

This paper co-authored with 3 (African American/Latin@) researcher-makers from an equity oriented makerspace at the Boys and Girls Club, reports on a youth participatory action research study (Cammarota & Fine, 2008) developed over two years, where youth developed multimodal cases using online digital media tools to discuss critical understandings of science & engineering learning in school and out-of-school settings based on inventions they created (duct-tape thermometer tie/anti-bully phone app/solar panel fan-hat) when engineering for sustainable communities. The multimodal artifacts produced included, but were not limited to videos, audio recordings, pictures, text, and applications for cell phones. These understandings supported meaningful experiences, counter narratives (Solorzano & Yosso, 2002) and expansive learning (Engestrom & Sannino, 2010) outcomes through the scope of their engineering design.

We argue that youth, through using multimodal artifacts, articulated a range of counter narratives, specifically by challenging dominant ideologies pertaining to science and engineering work and legitimized their participation in science through the multimodal cases (who has access to/who can do science/engineering, what can be done and for whom). Also, participation in science and engineering for sustainable communities lead to expansive learning by tying personal, familial and broader community concerns into identifying problems and designing solutions in the creation of their inventions. These expansive learning outcomes were ongoing, over space and time and often multi-layered in ways the youth decided to choose specific multimodalities to explain their community-based engineering learning.

Data include: multimodal artifacts produced for online cases, field notes from yearlong co-participation with youth (225 hours), and group & individual interviews (40 hours). Analysis involved movement between a grounded approach in dialog with youth and expansive learning framework (Engestrom & Sannino, 2010)

Connie Rojas
Michigan State University

Uncovering the Functional Potential of Body-Site Specific Microbiomes in Spotted Hyenas

Animals are home to microbial communities containing thousands of species, and these associations between animals and their symbiotic microbes are often not random. Instead, specific types of microbes colonize and persist in specific body sites, and significantly impact host health, reproduction, and behavior. Here we explore the functional role of body site-specific microbiomes in a highly social large carnivore, the spotted hyena (*Crocuta crocuta*). Spotted hyenas live in large, complex groups that are female-dominated and structured by linear dominance hierarchies. As a model system for the study of complex social behavior, hyenas also provide an opportunity to study how behavior influences microbiomes and vice versa. We will use next-generation sequencing to characterize the hyena microbiome (e.g. composition, structure, diversity, and metabolic potential) across multiple body sites (nares, ears, prepuce, mouth, anus, and scent pouch) in male and female juvenile hyenas that span the spectrum of social ranks within a single social group. This will be the first body site-specific study of the microbiome in any large carnivore, and also the first to address microbiome function in the context of social behavior.

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Courtney Bryant
Michigan State University

How to Present Failure: Attributions for Minority and Women Leaders

Many studies have shown that the attributions of failure for men and women leaders are different in the context of failure (i.e. Men are unlucky, women are incompetent). To extend this literature, we explore race as another possible stigmatizing characteristic in the workplace that may affect how observers judge failure. Additionally, we tested impression management strategies to see how one could best present a failure during the hiring process. Results showed that race had a main effect on evaluations and the interaction between race, gender, and impression management strategy also affected evaluations. Future directions for follow-up studies will be discussed along with implications for this line of research.

Daniel Claiborne
Michigan State University

Examining Allergic Responses in C57BL/6 mice with a Humanized Microbiome

Microbial communities within the human body play essential roles from protection to digestion. The immune system is educated early during development based on the presence of commensal microbes while certain pathogens can trigger adverse responses. This study examines the hypothesis that the composition of the early gut microbiome in infants from the Isle of Wight can trigger or prevent allergenic responses (eczema, asthma). Preliminary studies suggest that children with high abundance of Enterobacteriaceae in gut microbial communities develop eczema, an early correlate of asthma. In contrast, high presence of Bacteroidaceae had a protective effect against eczema. The goal of this study is to recreate what has been observed in the infants in a murine model by manipulating microbial communities in the gut of C57BL/6 mice to generate a humanized microbiome. Mice will then be infected with the pathogen *Campylobacter jejuni* to induce a Th2 immune response. We expect infected mice with a human microbiome to be more susceptible to an allergenic response upon sensitization with house dust mite (HDM). Respiratory functions will be observed for an asthmatic response after sensitization and challenge with HDM. After euthanasia, the lung tissue and the G.I. tract will be excised for further analysis (i.e. PCR, tissue fixation). If successful, this model would provide insight into how the microbiome may play a role in the immune system's response to allergen exposure.

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Dukernse Augustin
Michigan State University

Does Depression Trigger Alcohol Onset Among 18-23 Year Olds?

Drinking of alcoholic beverages and depression are two of the behavioral and mental health challenges that face young people in the United States (US). Given that drinking and depression often co-occur, this research project seeks to answer an important research question about mental health in young people: 1. Does depression increase the risk of starting to drink alcohol? 2. Does the estimated risk relationship vary with age of first drink?

The population under study consists of 18-to-23-year-old newly incident drinkers who consumed their first full drinking within a year prior to the assessment identified from the US National Survey on Drug use & Health (NSDUH), 2004-2014. A case-crossover study design was used to compare the risk of the onset of major depressive episode (MDE) during the hazard interval, defined as the year prior to the onset of drinking, and the risk of MDE onset during the control interval, defined as the year prior to the hazard interval.

A total of 109 individuals were identified during the hazard interval and 89 were identified during the control interval, which generates an estimated relative risk of 1.2 (95% CI= 0.9, 1.6). Similarly, estimated relative risks are null for all age groups studied (OR=1.0 to 3.0, p=0.099-0.886).

In this study, we did not find evidence that depression triggers alcohol onset among young adults 18 to 23 years of age in the US.

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Elizabeth Gil

Michigan State University

Engaging Latino Immigrant Families' Community Cultural Wealth through Their Participation in a Community-Based Program

By understanding their constituents and identifying collective approaches that engage traditionally marginalized families, community-based initiatives have connected with Latino immigrant families in ways that empower them to improve educational outcomes for their children (Orr & Rogers, 2010). These initiatives provide spaces that foster networks to counter the power imbalance that parents may experience in schools (Dyrness, 2007; Hong, 2011; Noguera, 2004). Immigrant parents bring to these initiatives experiences from their native countries, thereby constructing new resources, which they can then apply to their children's schooling and education (Civil, Planas, & Quintos, 2012). Using 18 interviews of key program stakeholders, observations of the program, and program documents, this qualitative case study seeks to understand the experiences of parents participating in a community-based technology program geared toward Latino immigrant families with school-aged children. This study applies the community cultural wealth (Yosso, 2005) theoretical framework to understand how the program recognized the existence of and fostered the development of forms of capital often unacknowledged in school settings, and how these forms of capital impacted school-family relations. Preliminary findings indicate that participation in the program strengthened both social and familial capital, increasing participants' awareness of local resources and deepening relationships among members of the community, for both the adult participants and program volunteers. Linguistic capital was acknowledged through using participants' native language as the language of instruction and through the presence of Spanish-speaking and bilingual role models. The content and skills learned in the program also resulted in parents' increased understanding of academic expectations placed on students, and increased ability to communicate with school personnel. With over 12 million Latino children in the United States already in the K-12 public schools pipeline (Hernandez, Murakami, Cerna, Medina, & Martinez, 2013), it is essential that educational leaders and policymakers recognize parents as stakeholders with agency and understand what structures and approaches are most effective in working with Latino families. The findings from this study can inform educational leaders regarding incorporating effective outreach toward Latino families as part of a systematic and sustained commitment through the district's parental involvement initiatives, and other institutional structures. Study findings may also offer insights regarding collaboration with community-based programs and organizations in order to tap into their expertise and to take a holistic approach toward the education of the children served by the district.

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Eric Glass

Michigan State University

Risk of Becoming a Young Smoker in the United States: Does It Change Across Three Time Periods in Relation to the Synar Amendment?

In 1992, the Synar amendment was enacted in order to curtail youth tobacco smoking. The aim of this study is to estimate age-specific risk of tobacco smoking onset among adolescents and young adults during three time periods: pre-Synar (1979-1991), Synar (1992-2001), and post-Synar (2002-2014).

The population under study consists of 12-to-21-year-old non-institutionalized individuals living in the United States (US). The study design is cross-sectional surveys conducted from 1979-2014. Sample sizes varied from ~2000 to >25,000. Analysis-weighted annual incidence estimates and their 95% confidence intervals are generated using Stata software for the three time periods. Meta-analysis was used to summarize year-specific estimates during each of the three time periods.

Annual incidences of tobacco smoking were similar between the pre-Synar and Synar periods. Substantially lower adolescent incidence of tobacco smoking was seen during the post-Synar period compared to the pre-Synar and Synar periods. (i.e, meta-analytic summary estimate=1.3% [95% CI= 1.0%, 1.6%] at age 12 during post-Synar period compared to 8.3% [95% CI= 6.0%, 11.3%] for pre-Synar period and 5.4% [95% CI= 3.9%, 7.5%] for Synar period).

Estimated incidences of tobacco smoking show a shift of peak onset towards older age over the three study periods and a sizable drop of early-adolescent risk of smoking onset during the post-Synar period. Future studies are needed to probe the role of other co-occurring factors that may contribute to the shift of the onset curves (e.g., taxation).

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Ha Tran

Loyola University of Chicago

Classroom-based Discussion in Middle School and Bilinguals' Language and Literacy Development

Literacy levels during childhood are a key determinant of various aspects of success later in life. Children who grow up speaking only English (EO) have consistently scored better on standardized exams compared to their bilingual counterparts. This project looked into what key factors of teacher talk are related to students' reading comprehension over the course of the sixth grade school year. Specifically, we code teacher talk in middle school classrooms for the different types of discussion methods during literacy instruction. 15 sixth grade classrooms (n = 210, mean age = 11.7) and their teachers (n = 15, mean age = 37.42) participated in this study. Video and audio recordings of middle school teachers in their English and Language Arts class were taken at four time points during the school year, transcribed, and then coded for different types of discussion methods. Reading comprehension assessments were also administered to students in the same classrooms at the beginning and end of the school year. Analyses examined the relation between the various types of questions and discussion methods used by the teachers and the students' reading comprehension growth and to be able to use that information to predict further growth. We found that asking authentic questions in classroom settings had a strong positive correlation with student reading comprehension growth.

Jordan Garcia

Beloit College

Quantifying Toe Pad Morphology in Hemidactylus Geckos

Geckos are one of the most widely distributed lizard families on the planet, as they are found on six of the seven continents. The biomechanics of their toe pad adhesion are becoming increasingly well studied; however, the evolutionary dynamics of this trait are less understood. Hemidactylus geckos are found all over the world. Comparing closely related species in such a genus characterized by range expansion and adaptive radiation offers an excellent opportunity to examine this trait evolution. To date, the extent of toe morphological consideration beyond biomechanics has been the observation of visibly noticeable differences. Geometric morphometrics can detect minute differences and quantify these observations. We used tpsDig2 geometric morphometrics software to analyze photos of gecko toe pads sampled from live and preserved specimens. We digitized 11 landmarks on homologous areas of the fourth proximal toe of 34 species in the Hemidactylus genus. Floating semi-landmarks were used to detail shape differences between species. We hypothesized that those species found in the arid clade will have distinct morphology that is adapted to the less arboreal environment. Higham et al. (2015) report that adhesive pads are disadvantageous when running on smooth surfaces. We predicted that their toes will be longer and have less adhesive area than those species found in forest ecosystems, thus enhancing predator evasion in flat terrestrial environments. Results indicated that there was no correlation between the environment groups and morphology. There was considerable variation in lamella shape and position, as well as the amount of adhesive area on the toe across species. Further analysis was needed, and lamella data were removed across all species. Analyzing morphological differences and relating these traits to habitat use would provide a structure for understanding the evolutionary trajectory of morphology in geckos.

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JustOne Crosby
Western Michigan University

Flexible Lithium–Sulfur Battery: Half and Full Cell System

Growth in flexible electronic markets have increased the demand for flexible energy storage outputs. This has required development of batteries with elastic qualities. Conventionally, lithium–ion batteries are used to power rollup displays, smart electronics, and wearable devices. Batteries such as these typically house a flammable electrolyte, while being expensive and having low capacity. Lithium–sulfur (Li-S) batteries, which use safe and cost-effective materials, exhibit five times greater capacity than conventional Li-ion batteries. The purpose of this research is to combine the Li-S battery system with a versatile packaging, to promote a new innovative approach to portable electronics—flexibility. Electronics with flexible Li-S batteries would be lighter, safer, and run longer. Herein, a Li-S battery is fabricated using carbon cloth as a host for sulfur cathode, polysulfide dissolved in electrolyte fluid, and lithium as the anode. This battery demonstrates stable capacity and efficient charge/discharge cycles.

Kyion Roebuck
Wayne State University

An Investigation into the Relationship between Female Song and Parental in House Wrens (Troglodytes aedon)

Bird song was once considered a sexually-selected indicator trait unique to males, but recent evidence suggests that not only are some females able to produce song, the presence of female song is more common than not. To determine its presence, and if the rate of song production and complexity influenced parental care in males and females, we monitored house wrens (*Troglodytes aedon*), small, monomorphic, migratory songbirds that produce highly complex songs from large song repertoires, across their breeding season which ranged from mid-April to mid-August 2016. Across four preserves in Kalamazoo, MI, Chipman, Asylum, Keka and Parkview, 108 nest boxes were placed and checked every three days for activity. Breeding stage was classified as nest building, egg laying, incubation, early provisioning (3-5 days post-hatch) and late provisioning (8-10 days post-hatch), and for one day during each stage, each mated pair was recorded with a SongMeter 2 from sunrise until for hours post sunrise. They were observed for one hour during this four-hour period, and depending on stage, nest box visits, incubation rate or provisioning rate were determined. Preliminary data indicate that nearly all females within our population produce song. Analysis of song files are still underway, and once completed, song rate, song complexity and song repertoire within breeding stage and across breeding season will be compared to parental care.

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Melissa Vasquez
Loyola University of Chicago

Language Minority Students' Vocabulary Development and their Exposure to their Peer's High Quality Vocabulary

The objective of the proposed study was to examine the influence of their peer's use of high quality vocabulary on the vocabulary development of Latino language minority sixth grade students whose primary home language is not Spanish. The language minority students' vocabulary skills were assessed through a vocabulary subtest administered at two different points of the school year and peer talk was evaluated based on vocabulary diversity using classroom transcripts. The language minority students' vocabulary development was positively associated with the quality of peer talk. The results suggest that if there is vocabulary diversity in peer talk, language minority students' vocabulary is expected to grow, thus increasing their chance for academic success.

Monica Barreto
Western Michigan University

Acceptance and Commitment Therapy: Focused Brief Intervention for Health-Related Behavioral Change

Substance misuse, physical inactivity, and unhealthy eating and sleeping habits are important health-related behaviors for current life satisfaction and forestalling chronic health conditions. This study examined the plausibility of offering a 1-session (60 minute) acceptance and commitment therapy (ACT) intervention for college students seeking health-related behavior change. In this study, the 40 participants who received the ACT session reported a statistically significant increase in their confidence in making the desired health-related behavior change immediately following the session, $M = 8.35 (1.08)$, $t(39) = -5.70$, $p < .001$. Moreover, the 39 participants who completed the 30-day follow-up period reported statistically significant changes in the health-related behavior targeted for change in the ACT session, $t(38) = -5.36$, $p < .001$. Other non-targeted health-related behaviors showed no statistically significant change. These data suggested that a single session of focused ACT may be useful in promoting health-related behavior change.

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Princess Williams

Wayne State University

All Politics are Regional: Space, Time, Movement and Black Political Behavior

Political science has often assumed that African Americans' political opinions are quite homogenous, perhaps because of their overwhelming preference for the Democratic Party and its presidential candidates over the past half century. Recent work, however, has shown a great deal of variation in the policy preferences and ideological commitments of African Americans in this country. What explains this variation? I hypothesize that living under varying regional political subcultures creates variation in African American public opinion. I explore the impact of residing under differing regional political sub-cultures on the political attitudes of African American Americans living in the U.S South and Non-South. I argue that after the occurrence of the "Great Migration", African Americans in non-southern regions had to decide whether to embrace or reject more diverse and heterogeneous political cultures in their non-southern region of residence. Processes of regional political cultural adaptation and political cultural rejection can offer a possible explanation for the regional division in African American public opinion on the political preferences in this study. Initial analysis of the 2012 General Social Survey (GSS) indicates that residing in the South opposed to the Non-South has an effect on the political preferences of both Whites and Black Americans, all else equal. The results indicate that the South is cultured in such a way that makes Black Americans and White Americans in South more inclined to support government laissez-faire policies. This work highlights the need for the careful measurement and analysis of the region variable in survey analysis, the exploration of regional political cultures, and the measurement of sub-national political identities.

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Shealyn Blanchard

Western Michigan University

Re-Examining Racial Identity and Academic Self-Concept on Predicting GPA among African American Undergraduate Students

The purpose of this study was to explore the nature of racial identity and academic self-concept on predicting GPA among African American undergraduates. Previous studies (e.g., Awad, 2007; Cokley, 2000, 2002; Cokley & Chapman, 2008) have found that academic self-concept strongly predicted GPA. However, some of these studies have used only the total score of the Academic Self-Concept Scale (ASCS; Reynolds et al., 1980), individual subscales of a racial identity measures, and self-report GPA. This study serves as a replication and extension of previous research to examine all subscales of racial identity measured by the Cross Racial Identity Scale (CRIS; Vandiver et al., 2000), majority of the subscales of the ASCS, and the use of both self-report and official GPAs.

The sample was 273 African American undergraduates at a pre-dominantly White university in the Midwest. Participants completed a survey packet containing a background sheet, the ASCS (Reynolds et al., 1980) and the CRIS (Vandiver et al., 2000). GPA was gathered on the background sheet and permission was obtained for the official GPA.

The findings suggested that this sample of African American students reported a higher GPA than their actual GPAs. Although class level had a small effect on GPA, freshmen compared to sophomores reported higher GPAs. Two hierarchical regressions were used for the analyses, with class level, racial identity, and academic self-concept as predictors and the two GPAs as the outcome measures. The findings were that racial identity did not predict either GPA, but academic self-concept predicted both GPAs.

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WHAT IS MICHIGAN AGEP ALLIANCE (MAA)?



The Michigan Alliance for Graduate Education and the Professoriate (AGEP) seeks to join together universities and colleges in the common mission of increasing the number of underrepresented minority students earning PhDs and positioning minority students to become leaders in the social, behavioral, and economic sciences fields (SBE), science, technology, engineering and mathematics (STEM) fields.

Each AGEP alliance employs creative administrative strategies, develops infrastructure, and engages in substantive partnerships with non-doctoral granting institutions (many minority-serving institutions to enhance recruitment, retention, and advancement).

Five major research universities in this alliance include the graduate schools at the University of Michigan, Michigan State University, Michigan Technological University, Wayne State University, and Western Michigan University.

For more information, visit us at:

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Michigan AGEP Fall Conference website: www.grad.msu.edu/agep/conference

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