

Alliance for Graduate Education and the Professoriate

# Science Today Bulletin





The Alliances for Graduate Education and the Professoriate (AGEP) at Michigan State University (MSU) is a National Science Foundation program that supports recruitment, retention, and graduation of U. S. students in doctoral programs of the natural and social sciences, mathematics, and engineering. The focus of AGEP places special emphasis on a fully inclusive recruitment and development of students from U.S. population groups historically underrepresented in fields of the sciences, technology, engineering and mathematics (STEM); and the social, behavioral, and economic (SBE) sciences.

A goal of AGEP is to promote changes that transform U. S. universities to embrace the responsibility of substantially increasing the number of underrepresented U. S. minorities who will enter the professoriate in STEM and SBE disciplines. Graduate students and faculty who participate in building the AGEP Community at MSU will provide a key to changing the culture of U. S. colleges and universities to embrace building world-class STEM and SBE faculties who fully reflect the diversity in race, gender, culture and intellectual talent of the U.S. population. We have a series of events throughout the year, including monthly community meetings, Faculty Partnership Visits, a Spring Conference, and student outreach. You can follow us on [Linkedin.com](https://www.linkedin.com/company/agep-msu) and [Facebook](https://www.facebook.com/agepmsu) and request to be added to our ANGEL group by emailing us at [msuagep@grd.msu.edu](mailto:msuagep@grd.msu.edu).



Alliance for Graduate Education and the Professoriate

# Science Today Bulletin



## Letter From the Editors

Dear AGEP 'Science Today' Bulletin Readers,

Welcome to the inaugural edition of the Michigan State University Alliance for Graduate Education and the Professoriate "Science Today" Bulletin! The purpose of this peer-reviewed scholarly publication is to highlight rigorous, innovative scholarly research conducted by members of the Michigan State University AGEP community. We are proud to present this diverse combination of interdisciplinary scholarship by graduate students, from Education to Zoology, who conduct research that contribute to the betterment of our society. We would like to extend our sincerest gratitude to the Michigan State University Graduate School, the MSU AGEP community, and in particular, the graduate students who chose to share their research with us. This project could not have happened without the support that we received from each of you.

Sincerely,

Nkiru Nnawulezi  
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Ashley Hannah  
*Assistant Editor*

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## The Youth Level of Service/Case Management Inventory: Examining Race/Ethnicity

Ashlee Barnes, B.A.

William Davidson II, Ph.D.

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**Key Words:** *risk assessment, juvenile recidivism, race, ethnicity, YLS/CMI*

*Objectives:* This study aims to investigate if the Youth Level of Service/Case Management Inventory (YLS/CMI) can predict recidivism equally across race/ethnicity by answering the following research question: Does the YLS/CMI predict recidivism equally for White and Non-White juvenile offenders?

*Summary/Research Implications:* Approximately eight percent of juvenile offenders are responsible for the majority of new crimes committed (Onifade, Davidson, & Campbell, 2009). Consequently, risk assessment scales help the juvenile justice system identify youth at highest risk of re-offending (recidivism). Another concern is the overrepresentation of minority offenders. Minority youth aged 10-17 comprised 23% of the U.S. population, yet they constituted 52% of incarcerated youth (McGhee & White, 2010). Some researchers have suggested that risk assessment scales be used as a strategy to promote equal treatment across offenders, in turn reducing racial disparities (Schwalbe, Fraser, Day, & Cooley, 2006). However, this recommendation assumes that risk assessment measures are unbiased, and equally predict juvenile recidivism across race/ethnic groups. Studies have examined the predictive validity of risk assessment measures (e.g., Onifade et al., 2009; Schmidt, Hoge, & Gomes, 2005). In some studies, these instruments have been found to predict recidivism differently across racial groups (e.g., Vincent, Chapman, & Cook, 2011).

*Research Progress:* This quantitative research project examined differences of recidivism across a widely used risk assessment, The Youth Level of Service/Case Management Inventory (YLS/CMI). This 42-item instrument examines eight criminal risk domains that predict juvenile re-offending. Domains include: Prior Offenses, Education, Peers, Attitudes, Behavior, Substance Abuse, Leisure Activity and Family. Each item is scored dichotomously (yes or no) indicating whether or not risk is present. The items are totaled and the composite score is translated into a

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level of risk: low, moderate, high, and very high (Flores, Travis, & Latessa, 2003). Repeat offenders were identified by any new petitions (charges) received following the initial YLS/CMI administration. This descriptive study investigated four-year recidivism trends of African American, Caucasian, and Latino juvenile probationers. Recidivism data were collected through the local court's data management system. Both juvenile and adult records were checked in order to track any new petitions/arrests received subsequent to initial court contact. The sample ( $n = 1,399$ ) contained: 25% females, 52% African Americans, 39% Caucasians, and 9% Latinos.

*Results:* This study used the Receiver Operating Characteristic/Area Under the Curve (ROC/AUC) statistic to investigate predictive validity. The YLS/CMI total risk score accurately predicted recidivism for the full sample ( $AUC = .61, p < .05$ ). When the authors divided the sample by race/ethnic subgroup, the YLS/CMI continued to accurately predict recidivism for the African American ( $AUC = .60, p < .05$ ), Caucasian ( $AUC = .60, p < .05$ ), and Latino juvenile offenders ( $AUC = .65, p < .05$ ). To evaluate differential predictive validity, each  $AUC$  was compared to see if any differences would emerge. The predictive validity of the YLS/CMI for African American and White offenders was not significantly different ( $p > .05$ ). However, the predictive validity was significantly different for White and Latino youth ( $p < .05$ ), and Black and Latino youth ( $p < .05$ ).

*Discussion:* The results indicated that the YLS/CMI is an accurate predictor of juvenile recidivism. The YLS/CMI predicted recidivism for the total sample and across subgroups. However, there was evidence that the YLS/CMI may predict reoffending differently based on race/ethnicity. While there were no significant prediction differences among African American and White offenders, it appears that the YLS/CMI predicted recidivism best for Latino offenders. Nonetheless, readers should take caution when applying these results. A small number of Latino offenders and high standard error could account for the inflated  $AUC$  statistic. However, it is also possible that the YLS/CMI is not predicting better for Latino offenders, but over predicting. Put simply, these offenders may be assessed as demonstrating a higher level of risk, but are recidivating at a lower rate. There may be risk factors on the YLS/CMI that make Latino offenders appear riskier than what they truly are, leading to a false increase in predictive validity.



*Future Work / Broader Implications:* Currently, risk assessment utility is important in helping juvenile probation officers determine which youth are more likely to recidivate. However, it is important that risk assessment scales predict recidivism equally across race/ethnicity. Researchers must continue to study and improve risk assessment scales, as a strategy to reduce the overrepresentation of minority offenders. Future research should also consider developing a theoretical framework for explaining the unique experiences of Latino offenders, as this study's results indicated that the YLS/CMI might be predicting recidivism better for this group. This study can be applied to the greater academic community as it highlights the importance of using unbiased empirical methods (instead of experiential discretion) to make decisions about the equal treatment of individuals.

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## Feathers, Food, and Fear: Multi-scale Influences on Avian Foraging

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**Key Words:** *animal behavior, ecology, foraging, sociality, predation, American robin, Cedar waxwings*

*Objectives:* The goal of this study was to advance the integration of landscape and behavioral ecology by assessing how food availability at different spatial scales collectively influenced local-level foraging behavior. This research will lead to a more robust understanding of foraging behavior by studying sociality, predation risk and multi-scale variation in food availability in an integrated way. Specifically, this study will test whether sociality and multi-scale variation in food abundance interact to influence foragers' responses to the tradeoff between benefits of food acquisition and costs of predation. American robins (*Turdus migratorius*) and Cedar waxwings (*Bombycilla cedrorum*) are important consumers of sweet cherries (*Prunus avum*), yet show disparate foraging strategies in orchards; waxwings forage more often in groups while robins are typically solitary (Lindell et al., 2012). Using these species as models of social and solitary foragers, variation in cherry abundance will be quantified within and across four spatial scales (i.e. geographical levels of varying size)—focal tree (in which an observation is conducted), neighborhood of trees around the focal tree, orchard, and landscape (within 1 km). The risk of predation birds perceive will be manipulated (see Future Work for methodology), and as a result, the potential costs and benefits of remaining in or leaving a particular patch of food resources.

*Summary:* In ecological studies, the consideration of landscape-scale environmental patterns has typically documented how animal distribution and abundance are influenced by environmental patterns (e.g. food availability) across multiple spatial scales, but the integration of landscape characteristics into animal behavior studies is less common. Few studies have assessed whether environmental patterns at multiple scales influence foraging (search for and obtaining food resources). Studies have compared foraging patterns within individual spatial scales (Thompson et al., 2001), yet animals often make decisions that may depend upon patterns in food resource availability at

multiple scales. For example, an animal's decision regarding which patch (an area containing aggregated food resources) to choose may depend upon the food abundance of that patch, as well as the abundance of *patches* across a larger area.

Variation in food abundance across spatial scales likely influences behavioral decisions of social (forage in groups) versus solitary foragers differently. Unlike solitary feeders, social foragers may be more sensitive to variation in food availability because of potential within-group food competition (Rieucan & Giraldeau, 2009). A foraging patch with sufficient food to support multiple foragers is likely more limited than adequate patches for solitary individuals. Social foraging groups also influence the abundance of food in patches differently than solitary foragers. For example, a socially foraging group is expected to deplete a given patch of its food items to a greater extent than a solitary foraging animal (Livoreil & Giraldeau, 1997). Animals also often face a tradeoff between foraging and detecting/avoiding predation threats. It is likely more difficult for social foragers to find an adequate alternative patch in which to forage after a predation threat occurs in the current patch than it is for solitary foragers. Research has not effectively examined how multi-scale food availability affects foraging within the context of sociality and predation risk.

*Research Progress:* Preliminary research was conducted during the 2011 summer growing season in Michigan cherry orchards. During my inaugural field season, I refined methodologies and collected preliminary data on robin and waxwing foraging behavior. I developed a method for quantifying the relative abundance of cherries on individual trees that can also be used to quantify orchard-level fruit abundance. During the 2012 field season, I conducted behavioral observations of robin and waxwing foraging behavior. In addition, I collected cherry abundance data at the spatial scales of 1) focal cherry tree (in which the foraging observation occurred), 2) the four neighbor trees around the focal tree, and 3) cherry orchard.

*Future Work:* In future field seasons, I plan to examine how predation risk affects avian foraging, by conducting experiments that manipulate perceived predation risk using audio playbacks of aerial predators and robin/waxwing alarm calls. I will conduct observations of target individuals before and after these playbacks to assess behavioral responses including, for example, latency to flee

a cherry tree and changes in feeding rates. I can then assess how variation in food availability at multiple spatial scales influences affects birds' foraging to a perceived predation threat. In addition, I will assess cherry availability at the landscape scale by quantifying the composition of different land cover types (forest, water, development, orchard, etc.) in the study region.

*Broader Implications:* Understanding how species make decisions given variation in the availability of food resources can help predict behavioral responses and thus advance understanding of foraging decisions. In addition, in the face of landscape change it is important to acquire knowledge on behavioral responses to food availability in order to predict effects on species in landscapes that are increasingly affected by human activities. Furthermore, mitigating bird damage to cherries is a long-standing and often ineffective venture; in addition, over \$50 million are lost annually from wildlife damage to various fruit (USDA, 1998). The proposed work will provide information on avian foraging behavior birds in orchards and contribute behavioral data and methods to aid in developing efficacious and cost-effective bird management regimes for a variety of crops.

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## “Colorblind Ideology” and “Controlling Images”: Representations of Racial and Gender Discourses in Online Comments

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**Key Words:** *colorblindness, controlling images, black femininity, post-racial society*

Discourses surrounding black women and black women’s bodies often rely upon negatively, pejorative, and hegemonic (seemingly normal or natural) constructions of black femininity formed during slavery, cemented during Jim Crow, and maintained in the contemporary moment (Collins, 2000; Crenshaw, 1989, 1991). The negative construction of black femininity produced ideologies and discourses that shape, control, and define black femininity as pathological and needing control (Beauboef-Lafontant, 2009; Collins, 2000; Crenshaw, 1991). Discourses of pathological black femininity exist in everyday conversations, scholarly works, and are prevalent within mainstream media. Despite the prevalence, little scholarship directly focuses on black womanhood and associated discourses.

Problematizing the study of black women is the assertion of a postracial or colorblind world. These narratives argue race is no longer a problem in American society, and focusing on racism and discrimination maintains discrimination and racism. Additionally, few studies that examine black women and media analyze the responses individuals have to mediated representations of black femininity. To address this gap, the author examined a story surrounding three black women accused of shoplifting during the online portion of CNN’s 2008 special series *Black in America*. The research questions were as follows: (1) What dominant racist and gendered discourses did commenters incorporate in their online narratives to discuss and maintain the subjugation of black women; and (2) What is the discursive work of these narratives –sought to ascertain how individuals used or incorporated racist and gendered discourses to maintain hegemonic constructions of black femininity.

The framework of analysis, used to construct the coding scheme and discourse analysis, relied upon Collins’ (2000) *controlling images*, and Bonilla Silva’s (2001, 2002) *colorblind racism*.

Controlling images are hegemonically negative identifiers, which cast black femininity as domineering, emasculating, angry, and hypersexual. Within media, these images operate as the Mammie, Matriarch, Jezebel, and Welfare Queen. Colorblind racism, restated as colorblind ideology is the reliance on racist narratives where blacks (and other groups of color) are marked as deviant, violent, and pathological, masked within seemingly benign or race-neutral language.

The method I chose for this study combined grounded theory and discourse analysis. I began my analysis with grounded theory –allowing the data to speak for itself with a reflexive relationship to theory (colorblind ideology and controlling images)– examining the remaining comments for their alignment with either controlling images or colorblind ideology. This process narrowed the comments to 54, which varied in length from 20 to 200 words, and resulted in the creation of three distinct themes. The first two themes –*Racial Discrimination Does Not Happen*, and *It is Because You Are* aligned with colorblind ideology, and accounted for approximately 70% of comments. Surprisingly, a majority of comments that espoused controlling images also relied upon seemingly race neutral language and colorblind ideology. Therefore, the final theme combined both controlling images and colorblind ideology. After categorizing the comments based upon their thematic narrative, I reexamined each comment using discourse analysis –the examination of language to reveal larger ideological and historical frames –to reveal both the ideologies present in narratives, and to provide a direct link-age to larger racist and gendered structures that control the definition of femininity and masculinity for black Americans.

The findings reveal commenters removed structures of race and racial discrimination, situat-ing blame for racial discrimination and racism on blacks. The narrative presented in JC's comment uses the behavior of a former friend to argue racial discrimination results from lack of personal re-sponsibility and immoral behavior:

*I have a former friend who is also black, and takes advantage of every situation she can by being black. At restaurants [sic], she picks a fight with the waiter or waitress... She always turns everything into a racial situation... She is very proud of herself, and has turned this into an art, and encourages her children to do the same thing.*

JC's former friend is an angry overbearing woman who takes advantage of social interactions and situations; she is a matriarch. Although JC's narrative does not overtly draw upon racist language, if we take apart the coded language we reveal the link between 'overly aggressive' behaviors and ideologies of black femininity. The work of controlling images and colorblind ideology in tandem maintains negative and gendered images of blacks in society through seemingly normal and natural, and non-racist language as demonstrated in the above comment.

The increasing trend of 'talking back,' or posting comments on online stories, blogs, videos, and television shows could perpetuate negative and hegemonic construction of black femininity, often masked by colorblind and postracial signifiers. If we are to create spaces for black femininity in media and society that operate outside the parameters of controlled images, we must challenge colorblind and postracial discourses revealing their racist and gendered ideologies. To do this, future research will address the recreation of negative ideologies surrounding black women through comments in differing online forms: new media (YouTube), online television shows (Hulu and online networks), and blogs. This will provide links between the maintenance of racist and gendered ideology in everyday conversations and online conversation.

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## 21st Century African American Student Activism Roils the Academy

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**Key Words:** *African American students, higher education, activism, education, critical consciousness*

Black student voices, representation, and educational experiences have been a continual process of struggle throughout much of their historical experiences in America. While progress has been made as a result of the work of leaders of the Civil Rights Movement in the mid-twentieth century and government policies including Affirmative Action and the Civil Rights Act, which to some extent offered equal opportunities and options, there continues to be a conflict of fighting for voice and space of Black students' subjectivities on college campuses across the nation. Some fifty years later, the progeny of Black student activists from the mid-twentieth century are now in the very educational spaces of their predecessors, and they continue to push for rights and representation just as student activists did generations before. Yet, the actions of racism and discrimination have changed current student activists' approaches to affecting African American students. This research seeks to answer the question: What does the Black student Activist scholar look like in the 21st century? What can be understood from their lives with regards to academic achievement, and the narratives they publicly and privately show?

Empirical studies regarding Black student activism on university campuses generally report from the standpoint of the development of Black Student Unions or in relation to large social movements throughout American history. Researchers have given considerable focus to the Black student movements of the early and mid-twentieth century, including tactics Black student activists employed in their efforts to raise awareness and create effective change about campus and societal issues (Exum, 1985; McCormick, 1990; Rojas, 2007; Rogers, 2012; Williamson, 2003). Researchers have broadly examined the Black student activist scholar in a manner that neglects to address the individual, lived experiences of Black students and their development of a scholar activist identity. This leaves a gap in the articulation of the identities and contexts of Black student activists,



which is an important component in teaching students. In articulating the gap in the literature, I utilize the concepts of Critical Consciousness and Sociopolitical Development. These concepts examine “a process of growth in a person’s knowledge, analytical skills, emotional faculties, and capacity for action in political and social systems” (Watts, Williams & Jagers, 2003, p. 185). This qualitative study critically examines the motivations and viewpoints of individuals from Black college student activist scholar’s lived worldview, to explore the life histories, lived experiences, and academic endeavors of the Black student activist scholar of the twenty-first century (Watts, Williams & Jagers, 2003). This research includes in-depth individual interviews, participant observations, and a focus group. These multiple facets of data collection “ensures that the study will be accurate because the information draws on multiple sources of information, individuals, or processes. In this way, it encourages the researcher to develop a report that is both accurate and credible” (Creswell, 2011, p. 259). This study, situated within Black Studies, is interdisciplinary in nature, drawing on historical, sociological, and educational approaches to explore subjectivities of Black student activists, and their contribution of knowledge and social change in higher education.

The participants of the study are self-identified Black student activists who engage with activism in a Black student organization on a college campus. Through my interactions with participants, I have begun to highlight their experiences, and their connections and development of their activist and academic identities, specifically in higher education. One goal of this study is to develop greater insight on the experiences of Black students on the campus of a Predominately White Institution. A secondary objective is to emphasize the tactics and measures used by Black Student Activist Scholars to increase the retention and graduation rates of African American students in higher education. Through this, I intend to allow their narratives highlight their experiences in the academy. Furthermore, this research serves to offer strategies to issues surrounding college adjustment, graduation and retention rates, in addition to teaching practices for Black students on the campus of a Predominately White Institution (PWI), as their experiences are necessary to the construction of new knowledge in the academy.

Broadly, my future research consists of projects will examine Black experiences in secondary

education settings as it relates to race, educational equity, and opportunity. Future research will also expand the paradigm of Sociopolitical Development and Critical Consciousness, allowing the opportunity to engage with high school students and their learning through their identities and lived experiences. Additionally, I will work in concert with community members and students to develop strategies for the success of traditionally marginalized students.

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## Strontium Isotope Analysis: Assessing Prehistoric Population Movement Along the Eastern Adriatic Coast, a Pilot Study

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**Key Words:** *Strontium (Sr) Isotope Analysis, culture transfer, Albania*

*Research Problem:* It is unknown whether people migrated into northern Albania, bringing the practice of tumulus burial (i.e. mounds constructed with stone and dirt) with them, or rather the *idea* of tumulus burial spread south through social networks and trade. This research investigates the degree to which human population migration occurred in the region that encompasses northern Albania during the Early Bronze Age (ca. 3000 B.C.). This work is situated within broader anthropological questions concerning culture change, cultural transfer, and regional networks that may occur as a result of interactions between two or more different populations. Specifically, this research aims to situate the study region of northern Albania within a larger sphere of prehistoric social interaction.

In order to assess population movement, the study will utilize a Strontium (Sr) isotope analysis of strontium in human remains as a proxy measure of geographic origin. In order to accomplish this, the baseline Sr signatures within the study region of northern Albania must first be established using land snail shells. The materials and methods employed for this pilot study, as a participant in a larger archaeological project (*Projekti Arkeologjikë i Shkodrës*; PASH for short), have been useful in several other archaeological contexts. This pilot study will 1) assess the feasibility of Sr isotope analysis, and 2) determine the baseline bioavailability of Sr as it is expressed in land snail shells collected during a 2010 field season in northern Albania.

*Research Question:* Is there detectable variation along the eastern Adriatic coast? Current literature (Bentley, 2006:146) suggests that there is an ambient coastal  $^{87}\text{Sr}/^{86}\text{Sr}$  ratio of 0.7092. This seawater signature retains homogeneity throughout the world as a result of an erosion and weathering processes that transport sediment from continents into the ocean. Coastal zones throughout the world are therefore assumed to bear this ambient coastal signature. This study

investigates the degree to which Sr variation occurs, if any, along the eastern Adriatic Coast and comparing this signature to those from inland Kosovo.

*Methods:* Snail shells were systematically collected from northern Albania whenever they were visible on the ground during the 2010 PASH archaeological survey field season. The shells were then sent to the Massachusetts Institute of Technology during the spring of 2011 where they were prepared and processed.

Standard measures of variance are commonplace and Student *t*-tests were employed to determine whether the means of sample populations are significantly different from one another (Hodell et al. 2004). Means are deemed significantly different if the *p*-value is below the alpha level 0.05. Since this project was undertaken in order to assess the feasibility of Sr-isotope analysis in northern Albania, the sample size is relatively small ( $n=11$ ). As a result, exploratory data analysis was performed and potential modalities of the dataset were examined in an attempt to draw preliminary conclusions.

*Results:*  $^{87}\text{Sr}/^{86}\text{Sr}$  measurements obtained from snail shells collected from northern Albania varied between 0.70807 and 0.70853. These  $^{87}\text{Sr}/^{86}\text{Sr}$  measurements obtained fell within the variation exhibited by all test locations, providing further reason to designate all three locations as having similar Sr signatures. The mean population  $^{87}\text{Sr}/^{86}\text{Sr}$  measurement was calculated to be 0.70825 with a standard deviation of 0.0001554.

*Discussion:* Geographic locations typically maintain variable Sr concentrations that are in constant environmental flux and can be thought of as a system of Sr “inputs” and “outputs.” In other words, the Sr concentration within a given geographic location is the result of multiple sources such as bedrock, loess, anthropogenic sources, and atmospheric rain and should therefore be taken into consideration when analyzing Sr data.

These data indicate that this method is feasible and will require additional sample collection, particularly since the coastal signatures of northern Albania are statistically different from that of Kosovo. As a result of this pilot study, this study demonstrates that it is possible to test the null hypothesis that individuals within the local burial population of the northern Albanian study region will

exhibit local  $^{87}\text{Sr}/^{86}\text{Sr}$  values as determined by land snail shells.

The results of this pilot study indicate that future research is warranted and quite necessary if the objective is to assess human mobility along the eastern Adriatic coast and inland via Strontium isotope analysis. This research sought to assess the degree of  $^{87}\text{Sr}/^{86}\text{Sr}$  variation throughout an isolated study region in northern Albania in an attempt to one day identify potential “outliers” within the burial population. As with all methods, a nuanced understanding of the limitations that Sr isotope analysis provides is crucial. An overreliance on biological signatures regarding geographic origin, while helpful, does not provide information about an individual’s place of home – whether real or imagined.

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## **Critical Multicultural Education and Professional Development for Educators:**

### **A Call for More Robust Models**

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**Key Words:** *teachers, critical multicultural education, cultural competency, professional development*

Professional development (PD) initiatives represent an opportunity to facilitate the type of growth and change among educators that can lead to learning environments which are more conducive to student success. All too often, PD sessions for educators are discrete, one-direction events designed to inform participants of their responsibilities to implement district, state, or federal mandates. These sessions also typically separate educators by grade level and/or content area. In the current study, many educators found such workshops/seminars to be missed opportunities to deeply engage in dialogue regarding practical tools for addressing the complexities of teaching increasingly diverse student populations. Hence, the teachers attending our seminars were explicit in their desire to enhance their critical competencies in teaching across cultural differences. Consistent with Darling-Hammond & Richardson (2009) and Garet et al.'s (2001) assessments on the effectiveness of sustained PD programs, the teachers were engaged in extended and multiple sessions over a span of nine months. This research is based on a thematic PD program that used "critical multicultural education" (Sleeter, 2001) and self-awareness as the lever for connecting educators in critical dialogue across content areas and grade levels. A sustained PD program was developed and enacted using the following guiding research question: *How do K-12 educators in a racially diverse suburban school district describe and understand the impact, if any, of a yearlong critical multicultural professional development seminar on their pedagogy and practice?*

Thirteen educators (12 teachers, 1 social worker) participated in the Teaching Across Cultural Differences (TADC) yearlong PD seminar. All of the educators identified as White, and the group

consisted of 11 women and 2 men. Educators engaged in nine monthly two-hour workshops around selected readings and carefully constructed activities that highlighted the role of race, gender, social class, and language in teaching and learning. TADC sought to help teachers in a Midwestern suburban school district change their pedagogy and practice to address teaching and learning challenges associated with an increasing diversity among their students. While the student racial/ethnic demographic for the district varies (approximately 60% White, 40% students of color), the teaching staff is 96% White. Of the district's 221 teachers, 6 are African American and 3 are Latino/a. A critical component of the PD sessions were the self-reflective activities and writings that were used to facilitate the educators' awareness of and reflections on how their own social positionality (e.g., racial, social-economic, gender) affected their pedagogy, practices, and perceptions of and relationships with students.

Data collection included qualitative and quantitative procedures. We conducted attitudinal surveys at the beginning and conclusion of the series of sessions and informal debriefing interviews with the educators about shifts in their perceptions and reactions to difference in the classroom. The self-reflective exercises were coded for salient themes related to critical reflections on self, pedagogy, and practice. We conducted five semi-structured individual interviews (all women volunteered) to understand how they made sense of the seminar's materials and activities. We also learned how their classroom practices and perspectives on issues of cultural difference in teaching and learning may (or may not) have been impacted as a result of their involvement in the TADC seminar. Using a grounded theory approach to the qualitative data analysis resulted in three main findings: (1) educators recognize the advantages of sustained and thematic professional development related to cultural competency; (2) the enthusiasm experienced by the educators' participation was dampened by their perception that the district did not prioritize this type of professional development; and, (3) the lack of spaces and opportunities within schools and districts to meaningfully connect practice with critical approaches to cultural differences were seen as a detriment to teachers' long-term professional development and sense of self-efficacy to be agents of change beyond their individual classrooms.

Based on the findings from this investigation, we assert that one component of educators' ability to implement quality instruction and build effective relationships with students is shaped by their ability to critically reflect on how their social location shapes their beliefs about students and their academic capabilities. Additionally, educators' willingness to actively participate in professional spaces where they can investigate, challenge, and appreciate cultural differences is imperative. Findings from this study suggest that it is imperative that school districts invest in sustained professional development opportunities for their teaching staff that allow candid conversations and practical resources concerning teaching across cultural differences. In the future, we look to create a model of sustained professional development that facilitates authentic discussions, readings, and activities among educators and administrators that explicitly address issues of cultural difference in schools.

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## “Los Hoyos del Africa”: Conga Music, Memory, and Consciousness in the African Diaspora

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**Key Words:** *African Diaspora; culture; music sociology; consciousness; memory; identity; Cuba*

This sociological research is concerned with identity construction processes within the African Atlantic Diaspora, and how music as a creative expression is used as a mechanism for negotiating, socializing, and transmitting components of an African Diaspora identity. The study focuses on the relationship of memory and an emancipatory consciousness, distinctive to the African Diaspora, expressed and used within an organic, community (neighborhood)-based music genre called *conga*, as it is performed within Santiago de Cuba, the largest city in the Oriente (eastern) region of Cuba. This case study focuses on the neighborhood of Los Hoyos and their *conga* group. The research question is as follows: What is the role of *conga* in identity and consciousness formation processes in the Los Hoyos neighborhood of Santiago de Cuba?

This research is theoretically situated within the social construction of reality process, interaction, and the Ruth Simms Hamilton (2007:10) framework for studying the African Diaspora, specifically the category of communities of consciousness and cultural production. Studies of identity formation within this Diaspora propose that Africans and their descendants recomposed their social world after the schism of the *maafa*: the forced phase of dispersion from the continent of Africa to the Americas (Hamilton, 2007:4) and infusion of racial stratification at the advent of modernity, colonization, and plantation economy. The experience and conditions of dehumanization faced by enslaved Africans elicited a consciousness of individual and collective Self-liberation and transculturation in their new land space: the process of constructing a social reality based upon the negotiation of different knowledge formed to develop commonly agreed upon modes of behavior, cultural expressions, language, and religion. Through the examination of a contemporary cultural expression such as *conga*, we can better understand social construction processes of a population in Diaspora, and how Africans and their descendants formed, used, and continue to sustain cultural phe-

nomena grounded within a consciousness of liberation. This research concentrates on memory (historical-social-cultural-collective), as it is enacted, transmitted, and recomposed through symbolic interaction and ritual behaviors used by community members during *conga* performances. This study proposes that the community's collective interaction with the *conga* helps to sustain a consciousness of "Africanness," liberation, and of be-ing Cuban.

This case study of the Los Hoyos *conga* was descended from the long-standing African Atlantic Research Team at Michigan State University's qualitative project on African-inspired religion and culture (Dodson, 2008). We conducted basic descriptive research that served as the initial phase establishing conceptual categories, which grounded this study and facilitated entrée and rapport-building processes. Data was collected over a course of eleven years in Santiago during the June-August months. I conducted participatory observations of the Los Hoyos *conga* in their preparation for and performances during the late July carnival celebrations as well as their role in non-carnival community activities. This includes the bi-annual "Invasion" event, symbolically re-enacting the African-descended forces 1895-96 invasion of western Cuba against the Spanish colonial order. I also conducted informal semi-focused interviews with *conga* members, affiliates, and community members. I plan on returning to Santiago in 2013 to interview elder community members specifically focusing on generational transmission of memory and socialization, ritual behaviors, and symbolic meanings of songs.

This research contributes to several sociological areas of inquiry that includes: integration of cultural sociology (micro) and sociology of culture (macro) approaches, the social function of culture within a Diaspora, an empirical investigation of memory's social function, the integration of symbolic interaction (individual) and interaction ritual chains (collective) theory, collective interaction and music sociology, and music's relationship to consciousness. This research also follows a sociologically grounded interdisciplinary approach set forth by Ruth Simms Hamilton towards studying the relationship of community formation, emancipatory consciousness, and the social function of music within the African Atlantic Diaspora. The next phase of research will include the embodiment of knowledge and tradition that when utilized in memoried interactions, produces a cognition of culture that rein-

forces a Diaspora consciousness of liberation. This phase will also explore the relationship of community-level music genres, performance, and interaction with African-inspired religious traditions.

This work is primarily significant to our understanding of the social function of music in the African Diaspora. It shows that music and collective interaction is a significant variable in the construction of community and identity. This research intends to show that music is more than just entertainment or for profit; music is a repository of memory and other socially important facets of being within the African Diaspora.

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## **Past as Prologue: Accountability as an Educational Reform Agenda in 1960's Michigan**

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**Key Words:** *politics of education, accountability in education, educational policy*

Today, accountability literature is understandably focused on No Child Left Behind (NCLB). The conversation about NCLB as a source-pool for high-stakes testing often pits politicians, policy-makers, and educators against each other. Such is a problem because children are not only being left behind, but also failing and leaving school, just as schools themselves are experiencing outside pressures to perform like never before. It is this call for evaluation external to the field of education that has motivated this research. How did the assessment of the teaching and learning of students get so removed from the purview of the classroom, school districts, and colleges of education? In one word: politics.

To focus the investigation, this pilot study utilizes a case study method and document analysis to answer the following two questions: How did the condition of education in Michigan get defined as a political problem for which government action was a solution? How did accountability move from the government agenda to the decision agenda? The unit of analysis for this exploratory case study was the concept of a policy/political entrepreneur across the work of three scholars: Kingdon (2003), Sheingate (2003), and Manna (2006). Each traced the development of ideas, problems, solutions, and the efforts of the individuals that help to birth public policy action. Drawing upon political science theory compliments the case study methodology in that both value attention being given to the “political, social, historical, and personal contexts” that is of interest to case study researchers (Stake, 1995, p. 17).

Findings indicate that Michigan's 44<sup>th</sup> Governor, William Milliken, was a policy/political entrepreneur who used accountability as a means to justify and implement educational reform. Milliken had established his interest and involvement with educational issues in his service as a Michigan Senator, which increased his license (Manna, 2006) to argue for educational reform. His experience in the business community and in the Michigan Senate helped him harvest allies for his approach to

education. Milliken knew how to speak to stakeholders about the need for increased efficiency so that schools were more accountable to the lives of its students, and once he became Governor of Michigan, Milliken was in a position to create capacity to nurture the educational changes he proposed, which included the development of a statewide assessment test. Milliken was able to use his connections to build coalitions (Sheingate, 2003) that would be necessary to bring about his vision for educational reform in Michigan. This is significant as this Michigan narrative from the 1960's pre-dates NCLB, along with many other common points of reference in literature on accountability.

Assessment data continues to gain currency in communicating multiple messages to a variety of stakeholders: policy makers, departments of education, educational researchers, principals, teachers, parents, students, and tax-payers. One goal for continuing this research is to follow the recommendation in the literature for more research that pays attention to the power politicians wield in shaping the rules of the educational game whether or not educational experts are invited to participate (Berube, 1996). The next step for this research is to conduct a descriptive study (Yin, 2003; Yin, 2012) to present a more holistic view of what happened in Michigan, considering the federal government's policies during the 1960's in addition to gaining a deeper understanding of the historical, social, and educational developments during the time period of interest. Overall, this research supports the notion that decisions by federal, state, and local policymakers can be and should be informed by strong research that includes the voices of students, their caregivers, and teachers at large. The business community and private industries have done well in articulating their interest in the American educational system. It is time for educators from the classrooms to colleges of education to be ready to gain, maintain, and maximize the attention of politicians and policymakers in order to ensure that America's schools are providing the best possible education for the success of all students.

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## Fathers' Home-based Involvement and its Relationship to Academic Role Construction

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**Key Words:** *parental involvement, fathers, role construction*

*Objectives:* Using a national dataset, this study examined types of fathers' home-based involvement and the relationship between fathers' role construction and self-reported home-based involvement in education. Specifically, this study addressed the following questions: (1) Which home-based activities do fathers engage in most? (2) How are fathers' reports of home-based practices related to their self-reported role construction to teach their child the value of education? (3) How does the relationship between home-based practices and reports of responsibility differ as a function of student age?

*Summary:* Research on parental involvement in education revealed that a number of positive child outcomes, including grades, standardized test scores, and school engagement are positively correlated with parental involvement in education (Epstein, 1995; Cox, 2005; Jeynes, 2005). Increasing research suggested a need to examine home-based practices, which are not affiliated with the child's school, including reading with the child, working on projects, and visiting museums, bookstores and cultural events (Grolnick & Slowiaczek 1994; Jeynes, 2005; Reynolds, Weissberg, & Kaspro, 1992; Shumow & Miller, 2001).

Parents are motivated to be involved for various reasons, including their role construction (Hoover-Dempsey & Sandler, 2005). Role construction describes how parents perceive they should raise their children. In this study, we emphasize fathers because studies suggest that when fathers are involved, they can provide a distinct contribution to positive child academic outcomes. We explored a type of role construction as one motivator behind their involvement.

*Research Progress:* This study was a secondary analysis of data collected from caregivers as a part of the Parent and Family Involvement in Education (PFI) component of the National Household Education Surveys (NHES) Program. Families consisted of any combination of guardians,

however for the purposes of this study, only the respondents who identified as fathers were used, including biological fathers, stepfathers, foster fathers or grandfathers ( $n = 3594$ ). Fathers were asked about activities family members participated in with elementary- (grades K-5) or secondary-aged (grades 6-12) children in the past week, their role construction ("It is the parents' responsibility to teach their children to value education and succeed in school") rated on a 4-point Likert scale (from strongly agree to strongly disagree), and their child's age.

Descriptive findings revealed that fathers of children grades K-5 were most likely to play sports with their children ( $n = 1296$ , 87.9% of fathers), whereas fathers of children grades 6-12 were most likely to discuss time management with their children ( $n = 1664$ , 78.5% of fathers). For fathers of both elementary- and secondary-aged children, the correlation between role construction for teaching their children the value of education and their home-based activities was low but significant ( $r = .067$ ,  $p < .05$  and  $r = .132$ ,  $p < .01$  respectively). Moderation analyses revealed that age of the child did not significantly explain the relationship between home-based involvement and role construction.

*Future Work:* Given the findings, a number of directions for future work arise. First, future studies should explore the range of role constructions beyond fathers' responsibility to teach their children the value of schooling. Other role constructions could have been better predictors of home-based practices. Also, this study did not take the demographic diversity of the sample into consideration, which could influence involvement in the home. For example, socioeconomic status could relate to the time fathers have to be involved at home due to job hours.

*Broader Implications:* Given that fathers are involved in various ways with their children's education, this study suggests a further need for school staff and administrators to encourage and promote fathers' participation in their child's education in conjunction with mothers. Although traditional thoughts on childrearing tend to focus on the role of the mother, if schools also adopt an alternate view on the role of fathers in parental involvement in education, this could potentially shape perceptions of appropriate paternal participation to a more expansive role than initially promoted.

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## **Modeling Wetland Physiographic and Hydrologic Properties Effects on Water Quality Using SWAT**

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**Key Words:** *wetland hydrology, flow reduction, wetland model, wetland restoration*

*Objectives:* The main research objectives are to create, calibrate and validate a Soil and Water Assessment Tool (SWAT) wetland computer model for prediction of water quality parameters.

*Summary:* Wetlands are diverse ecosystems which are characterized by several factors including: soil type, hydrology, topography, climate, vegetation and size. Wetlands provide multiple functions and services to human society and the environment including: food, fiber, recreation areas, wildlife habitat, flood reduction, and improve water quality (Comin et al., 1997, Keddy, 2000). Due to the complexity and dynamics of these ecosystems, extensive sources of observed data (e.g. water quality) are not available. Computer modeling techniques are a valuable tool to simulate processes occurring in wetlands and generate predicted data (Bouraoui et al., 2002, Borah et al., 2002). This study aimed to utilize SWAT to model the effect of wetland physiographic and hydrologic properties on water quality in central Michigan (Shiawassee watershed). SWAT is a frequently utilized watershed scale hydrologic model designed to study water quality (Arnold et al., 1998; Neitsch et al., 2002). A watershed is an area or region drained by a river, river system, or other body of water. The combination of this modeling tool with statistical regression models and the incorporation of a new wetland algorithm in SWAT will allow this study to model randomly placed wetlands within a watershed.

*Research Implications:* This research study approach will enable the simulation of water quality processes occurring in wetlands and also provide a potential alternative to better understand and describe the behavior of wetland systems using the SWAT model. The findings of this study will provide understanding of wetland functions in controlling and altering the hydrologic cycle of a water-

shed.

*Research Progress:* Wetland field data collection was completed in 2011 (including landscape surveys). The field data collection was based on selecting random locations within the watershed, completing a site visit, writing soil and wetland descriptions and a topographic survey. The model data input for this project included, but is not limited to landuse, topography, soils, wetland field data and climate. A SWAT computer model has been developed, calibrated and validated for stream flow. The model has been run for multiple scenarios representing wetland conditions (size, depth and location) and data analysis is currently being conducted.

*Future work:* The impacts of various wetland depths, sizes, and location placements were examined and results showed optimal wetland restoration scenarios (e.g. wetland size was found to be more important than wetland depth). As part of future work the SWAT model will be calibrated and validated for nutrients (Phosphorous and Nitrogen).

*Broader Implications:* This research could be used as a planning tool for the natural sciences, biology, agronomy and environmental engineering areas to reduce potential flood events and improve water quality which will have a broader implication on community planning.

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## Black Women on the Meaning of the Saints in Their Recovery of 'Home' in Post-Katrina New Orleans

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**Key Words:** *black women, black feminist epistemology, disaster recovery, home Hurricane Katrina, New Orleans, photo elicitation, visual sociology*

Hurricane Katrina left New Orleans' most vulnerable citizens visibly invisible—abandoned for days without food or water, as the world watched in horror. Five years later, the New Orleans Saints—long beleaguered as one of the National Football League's perennial worst performers—won its first Super Bowl in franchise history. Immediately, the media began a discourse about the team's success as symbolic of the recovery of the City. I argue that New Orleanians would disagree that the Saints are a symbol in the sense that "all is well again," but suggest instead that the Saints embody hope for the recovery of "home"—a step toward healing and resilience. The Saints (and their Super Bowl Championship season) provided a vehicle to remember the atrocities of Hurricane Katrina in the ways culturally sacred to New Orleans—to memorialize tragedy through celebration, exemplified by the second line tradition—distinctly performing a story of tragedy turned triumph<sup>1</sup>. This moment is *re-remembered* in a visual, kinetic, emotional language that fuses narrative, music, food, dance, experience, community, pain, and transcendence—what I refer to as *New Orleans' cultural aesthetic of home*.

The team's success will undoubtedly be told as part of the "how we got over" Katrina recovery story. However, the assumption that the Saints are *the* story, for black women in particular and New Orleanians in general, is problematic and narratively unjust<sup>2</sup>. With respect to home (and many other topics besides), black women are well suited to offer significant contributions<sup>3</sup>. Still, it seems when sport intersects with issues of home, as it did in the Saints' Super Bowl Victory, black women are not consulted. Absent from the dominant discourse, the sporting context further erases black women from the epistemic landscape of the recovery narratives. The connection between black women and football is seemingly an unlikely one. Yet, the Saints created a language to interpret the epistemic invisibility of New Orleanians and black women.

This qualitative project grounds visual methods in the social existence of black women to explore the narratives of black women working to recover home in real-time, finding the team is but a cultural and creative conduit to healing. The project was designed as an 18-month ethnographic study, combining researcher observations of participants' daily activities, events, and interactions with photo elicitation interviews to evoke rich narratives—interrogating the meaning of the Saints' success to black women's recovery of home in post-Katrina New Orleans. Five images that reflected the Saints phenomenon as well as themes from extant literature were included in semi-structured interviews with 10 black women (ages 23-81) to empower participants as experts and encourage self-authored narratives describing the meaning of the Saints to the post-Katrina recovery of home. For New Orleanians, the Saints' success is the beginning of the recovery story, not the end—as the media might imply. In New Orleans, resilience is a particular form of remembering the horrors of the past—and choosing hope.

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