

2nd Annual Community of Scholars Day

A celebration of faculty research & inquiry across disciplines



Friday, April 6, 2018
10:00 a.m.-4:00 p.m.

All sessions in Busse Board Room
Busse Library
Mount Mercy University

Reception, 9:30-10:00 a.m., Busse Atrium, lower level

9:30-10:00 a.m.: **Kristopher Keuseman** (Associate Professor of Chemistry), Poster presentation, *"The MMU Portal: Beginning the Educational Journey"*

Paper Session I: 10:00-10:50 a.m. (Busse Board Room)

Welcoming Remarks, 10:00 a.m. (**Tom Castle**, Associate Provost)

Neil Bernstein (Biology): *"Sand Prairie Succession after Removal of Pine Trees"*

Joseph Nguyen (Biology): *"To Wine or Not to Wine"*

Paper Session II: 11:00-11:50 a.m. (Busse Board Room)

Taylor Houston (Sociology): *"The State of Support: Locating Human Trafficking Victim Services and Identifying Best Practices and Barriers within the State of Iowa"*

Matthew Bejar (Psychology): *"The State of Diversity in the Association for Applied Sport Psychology: Gaining Momentum or Still Swimming Upstream?"*

Paper Session III: 12:00 noon-12:50 p.m. (Busse Board Room)

Tracy Tunwall (Business): *"Sustainability in Higher Education: Merging Mercy Mission"*

David Klope (Communication): *"The Face of Place: "Home" in an HGTV world"*

Paper Session IV: 1:00-1:50 p.m. (Busse Board Room)

Jennifer Lee (Psychology): *"A Multimodal, Non-pharmacologic Intervention Improves Mood and Cognitive Function in People with Multiple Sclerosis"*

Ryan Bezy (Biology): *"Characterization of the Role of yedR in Escherichia Coli Cell Ddivision"*

Paper Session V: 2:00-2:50 p.m. (Busse Board Room)

Eden Wales-Freedman (English): *"Sitch a Mess": "Fictive Witnessing" in Margaret Walker's Jubilee"*

Mohammad Chaichian (Sociology): *"French Republicanism vs. the Hijab: Dual Identity Formation among French Muslim Women"*

Paper Session VI: 3:00-3:50 p.m. (Busse Board Room)

Anna Waterman (Biology): *"Stable Isotope Analysis of Human Remains from Los Millares (Almería, Spain, c. 2500-1800 bc): Regional Comparisons and Dietary Variability"*

Robert Todd (Mathematics): *"Plasticity of CD4+ T Cell Differentiation is a Function of Cytokine Composition and Dosage OR Theoretical Biology and Mathematics"*



ABSTRACTS

Matthew Bejar, Assistant Professor of Psychology (with Teri C. Shigeno, Leslie Larsen, & Sae-Mi Lee)

The State of Diversity in the Association for Applied Sport Psychology: Gaining Momentum or Still Swimming Upstream?

Critiques of mainstream sport psychology research for failing to address diversity and social justice issues (e.g., racism, sexism, and homophobia in sport) have been growing in the past two decades. In this vein, Kamphoff, Gill, Araki, and Hammond (2010) sought to determine the extent to which the Association for Applied Sport Psychology (AASP), arguably the most influential organization in sport psychology in the U.S., addressed diversity within their conference programming. Through a content analysis of AASP conference abstracts from 1986 to 2007, they found that a mere 10.5% of presentations addressed a cultural diversity issue, while only 31.9% of studies included a diverse sample. Since 2007, however, there has been a growing body of literature focused on traditionally underrepresented populations, marginalized topics, and cultural competence advocacy within the sport psychology field. Despite this apparent shift in momentum, it is unclear whether AASP as an organization reflects this shift. Therefore, the purpose of this study was to conduct a 10-year follow-up study to Kamphoff and colleagues' (2010) investigation of diversity within AASP's conference programming. Using content analysis procedures adapted from Neuendorf (2002), we determined the prevalence of AASP abstracts between 2008 and 2017 that include diverse samples as well as a discussion of specific diversity issues (e.g., women in sport, race and ethnicity, LGBTQ athletes). Additionally, we analyzed trends of when (i.e., day and time) social and cultural diversity presentations were scheduled. Generally, it was found that while the prevalence of abstracts including the discussion of a diversity topic have improved considerably over the past decade in some areas (e.g., gender, race/ethnicity, and intersectionality), the prevalence of other topics (e.g., sexual orientation, disability) remained sparse. Diversity-themed presentations were largely slotted in undesirable time slots (e.g., early morning, last day of conference). Implications and recommendations for fostering organizational diversity in a meaningful manner within AASP will be discussed.

Neil Bernstein, Professor of biology

Sand Prairie Succession after Removal of Pine Trees

A sand prairie in Johnson County had conifers planted in the early 1980s to provide a windbreak to shifting sands. As a result, woody vegetation began to encroach on the sand prairie. With cooperation of the Iowa DNR, initial surveys of the area for plants and microclimates began in 2011. In 2014 and 2017, follow-up studies on plant succession and microclimates were completed. We analyzed data from 2017 to compare with those from the two previous surveys to monitor how well the sand prairie is regenerating and whether woody vegetation is decreasing.

Ryan Bezy, (with Jeremy Cline¹, Stephen Lister, David Stanek, Monica Steffen, and David Weiss):

Characterization of the Role of yedR in Escherichia Coli Cell Division

E bacteria from growing. With bacterial resistance to antibiotics on the rise, knowledge of cell division proteins provides additional targets to disrupt bacterial growth. Suppression screens had previously identified several possible new genes involved in E. coli cell division. One of the most promising, yedR, was selected to characterize further. The yedR gene product was shown to localize to the division complex during cell division. Overexpression of yedR was also shown to suppress defects of other known cell division mutants. While deletion of yedR produced no noticeable defect in division phenotypes by itself, creation of a series of double mutants carrying a deletion of the yedR gene in other division mutant backgrounds showed synthetic phenotypes and a worsening of division defects. Additionally, evidence indicates that there may be putative protein interactions between YedR and other known cell division proteins. All of this taken together indicates that yedR and its gene product most likely have a nonessential role in E. coli cell division.

Mohammad Chaichian, Professor of Sociology (with Homa Sadri)

French “Republicanism” vs. the Hijab: Dual Identity Formation among French Muslim Women

The French Parliament's passage of the law on secularity banning conspicuous display of religious symbols in schools in 2004 was a turning point for Muslim women's freedom of expression as French citizens, and in maintaining their ethnic and religious identities. In this article we examine the processes of identity formation for French Muslim "Maghrebi" women from former North African French colonies, mostly from Algeria and Morocco, and their resistance to government's actions to ban wearing the headscarf and burkini (a long-sleeved tunic with a knee-skimming seam, a head covering, and pants) in public places and beaches.

Using W.E.B Du Bois' concept of "double consciousness," we discuss two contradictory processes of identity formation for French Muslim women, namely, "The agony of a divided self," and "the agony of looking at one's self through the eyes of others." These two processes affect French Muslim women when they use modernized Muslim dress code to blend North African heritage with that of French secular culture (Laïcité) on one hand; while resist and protest government's efforts to limit religious expression on the other. However, the recent controversy over the burkini ban in French coastal cities in 2016 further indicated the futility of their efforts to blend modernized Islamic dress codes with those of secular France.

We make the case that Muslim women's adherence to Islamic cultural values are in line with their tribal-rural social realities and cultural practices, whereby two clearly delineated public and private spheres provide a complex set of rules for gender-specific spaces. We then conclude that Muslim women use the hijab and burkini as political "defensive walls" to resist the French government's long established colonial assimilationist policy of "conquest and civilization," that in turn uses their bodies as a catalyst for forced assimilation.

Taylor Houston, Assistant Professor of Sociology

The State of Support: Locating Human Trafficking Victim Services and Identifying Best Practices and Barriers within the State of Iowa

The following research was an initial effort to gain a deeper knowledge of the individuals, professionals, and organizations providing victim services to human trafficking survivors within the state of Iowa. Furthermore, this report identifies a detailed understanding of the types of victim services provided, perceived best-practices by victim services providers, problems/barriers facing service providers, strategies for self-care, and areas for improving victim services in the state. Overall, this report hopes to provide service providers a better understanding of what techniques, services, and resources their colleagues are providing to clients; as well as greater awareness of the barriers providers face, the populations served and underserved by providers, and the services that remain to be developed in the state during difficult situations, which should help them to contain negative interactions.

Kristopher Keuseman, Associate Professor of Chemistry

The MMU Portal: Beginning the Educational Journey

The 2016–2020 strategic plan, Meeting the Needs of Our Time, was approved by the Board of Trustees in October 2016 and calls us to “Strengthen the first-year experience for traditional students, including a revitalized advising/mentoring system which incorporates best practice persistence initiatives.” In part, this objective was developed in the strategic plan to raise the traditional student graduation rate to 68% by 2020 from 64.7% in Fall 2015. Since the Portal course is a signature piece of the MMU first-year experience, it became the subject of the current project. The goals for this work included: (1) Increased focus on connections (social interactions) between groups of educational stakeholders; (2) Greater transparency regarding the objectives of the Portal course; (3) Greater equity in educational experience between courses taught by different instructors; and (4) More support for Portal faculty to promote a limited “faculty mentoring” role within the Portal course. To implement initiatives in support of these goals, a new “Portal Seminar Instructor’s Guidebook” was written and disseminated to instructors. Evaluation of the changes made to the Portal Guidebook was conducted using a survey tool administered to instructors at the end of the semester. Evaluation materials and feedback from instructors was collected and analyzed by the “Core Curriculum Advisory Group” (CCAG). The CCAG is a faculty group formed to help gather feedback, formulate policy recommendations, and inform decision making regarding the Core Curriculum in collaboration with the Core Curriculum Coordinator. Evaluation and alteration of the Core Curriculum to address the dynamic nature of the higher education is an on-going process.

David Klope, Associate Professor of Communication

The Face of Place: “Home” in an HGTV world

Mass mediated culture exerts a powerful influence on our thinking, even to the point of inducing perception of the good, the bad, and the ugly. This influence can be extended even to our perception of the dwellings in which we live.

We look at our domestic dwelling, and say “Why do I have to live in such a dump?!” Such questions seldom bother to ask the source for the basis of such a judgement; whether perceiving our “home” in such a way is accurate, or even useful. It would be better to wonder whether the right question is being asked, and from what source it is best to derive an answer.

This project draws on culture theory and philosophy to explore the relation between the terms “house” and “home,” and the respective functions of each. Applying the concept of “authenticity,” it is argued that “home” is preferable over “house,” and that we should take care to filter the call of “house.”

Jennifer Lee, Assistant Professor of Psychology (with Babita Bisht, Michael J. Hall, Linda M. Rubenstein, Rebecca Louison, Danielle T. Klein & Terry L. Wahls)

A Multimodal, Nonpharmacologic Intervention Improves Mood and Cognitive Function in People with Multiple Sclerosis

The objective of this study was to examine whether participation in a 12-month multimodal intervention would improve mood and cognitive function in adults with progressive multiple sclerosis (MS). Methods: In this one-arm, open-label feasibility trial, participants were prescribed a home-based multimodal intervention, including (1) a modified Paleolithic diet; (2) an exercise program (stretching and strengthening of the trunk and lower limb muscles); (3) neuromuscular electrical stimulation (EStim) of trunk and lower limb muscles; and (4) stress management (meditation and self-massage). Individuals completed measures of mood (Beck Anxiety and Depression Inventories) and cognitive (Cognitive Stability Index, Cognitive Screening Test, Delis–Kaplan Executive Function System) and executive function (Wechsler Adult Intelligence Scale) at baseline and 3, 6, 9, and 12 months after the start of the intervention. Dosage of the multimodal intervention was assessed at 3, 6, 9, and 12 months. Results: The more individuals participated in the intervention activities, the greater improvements they had from baseline to 12 months on self-report measures of anxiety (Beck Anxiety Inventory [BAI]; ps D 0.001 to 0.02), depression (Beck Depression Inventory [BDI]; ps D <0.0001 to 0.09), cognitive function (Cognitive Stability Index [CSI/T], Delis-Kaplan Executive Function System [DKEFS]; ps D 0.001 to 0.06), and executive function (Wechsler Adult Intelligence Scale [WAIS]; ps D <0.0001 to 0.09). Mood and cognitive improvements were more closely related to a higher intake of the modified Paleolithic diet than to exercise and stress management dosage. Anxiety and depression changes were evident after just a few months, whereas changes in cognitive function were generally not observed until later in the intervention period. Mood and cognitive function changes from baseline to 12 months were significantly associated with fatigue improvements (ps D <0.0001 to 0.03). Conclusions: A modified Paleolithic diet, exercise, EStim, and stress management intervention like this one has the potential to improve the mood and cognitive symptoms that can lead to considerable suffering in people with MS, potentially improving quality of life and function for people with progressive MS.

Joseph Nguyen, Associate Professor of Chemistry

To Wine or Not to Wine

Oxygen has a rather interesting role in wine, both in its taste as well as its longevity. Oxygen is initially important as it helps intensify the smell of wine, which additionally contributes to adding a robust taste to it. However, as most wine drinkers know, wine does not last longer than a week before its taste degrades to the level that it needs to be disposed, which is partially contributed by the oxidation of ethanol to acetic acid. While the science and research behind the production and tastes of wine is abundant, the role of oxygen, especially regarding the decomposition of wine, is unknown. The presentation will discuss the efforts towards understanding the role oxygen plays in wine, both with the decomposition as well as its taste.

Robert Todd, Associate Professor of Mathematics

Plasticity of CD4+ T Cell Differentiation is a Function of Cytokine Composition and Dosage OR Theoretical Biology and Mathematics"

In this talk I will outline some of the work I do in mathematical biology. We will talk about some mathematical biology in general, and this project in particular. In this project, my collaborators and I investigate a mathematical model of the development of a particular class of immune cells in the human body- the CD4+ T cell. The role these cells play in the immune response has implications to a wide range of conditions from asthma to autoimmune diseases.

Tracy Tunwall, Associate Professor of Business

Sustainability in Higher Education: Merging Mercy Mission

This paper will highlight what we believe sustainability means in the context of higher education and Mercy values, and the educational and operational progress we have made toward making sustainability and corporate social responsibility a part of our strategic planning. At Mount Mercy University, we believe that a commitment to sustainability ties seamlessly with the values of the Sisters of Mercy.

Higher education plays a unique and often overlooked role in making healthy, just, and sustainable societies. Higher education provides students with knowledge that can result in a thriving and civil society. It [higher education] prepares most of the professionals who develop, lead, manage, teach, work in, and influence society's institutions....Today's and tomorrow's businesses, governments and professionals – architects, engineers, attorneys, business leaders, scientists, urban planners, policy analysts, cultural and spiritual leaders, teachers, journalists, advocates, activists, voting citizens, and politicians – will need new knowledge and skills that only higher education can provide on a broad scale.

We have utilized the United Nations' definition of sustainability which includes socio-cultural, environmental, and economic perspectives, with an emphasis on poverty reduction, corporate social responsibility, human rights, and gender equality to guide our strategic plan on sustainability. We have developed and conducted research and surveys on student and faculty knowledge, attitudes, and behaviors regarding sustainability to better understand current perspectives and to develop future goals and opportunities.

Eden Wales-Freedman, Assistant Professor of English

"Sitch a Mess": *Fictive Witnessing* in Margaret Walker's *Jubilee*

Fiction can "witness" (or work through) traumatic realities when it testifies to the existence of actual catastrophes and encourages readers to engage the reality of trauma as depicted in fictionalized form. To examine the power and potential of such "fictive witnessing," this paper considers Margaret Walker's *Jubilee* (1966), a Civil War novel that witnesses not only the life of one individual woman (the protagonist Vyry) but also the experiences of other slaves in the South, the fierce realities of the American institution of slavery; and the victims, victimizers, and bystanders who stood—and fought—on both sides of the American Civil War. To accomplish this feat without sacrificing the depth of a character's interiority, Walker writes *Jubilee* in a third-person limited narrative mode, unifying the novel through her sustained use of the third- person but plumbing the depths of individual consciousness through the narrator's limited—or intimate—perspective. In this way, the novel witnesses not only the viewpoints of the ex-slave Vyry but also her white half-sister, Lillian; her father, Marster John; his wife, Salina; her mother,

Sis Hetta; various other house and field servants; black freemen; two of Vvry's husbands; three of her children; the plantation's overseer; and soldiers from the Confederate and Union armies. Thus, in 500 pages of epic fiction, Walker plums the truths of pre- and post-bellum America in order to witness not only the depth of an individual's experience but the breadth of familial, cultural, and historical American traumas and triumphs. The first line of Walker's Acknowledgments reads: "many people of different races, colors, and creeds have given me material assistance in the creation of this story." *Jubilee* testifies to and for them all, speaking to the power of fiction to witness the trauma of an individual, a people, and a nation.

Anna Waterman, Assistant Professor of Biology

Stable Isotope Analysis of Human Remains from Los Millares (Almería, Spain, c. 2500-1800 bc): Regional Comparisons and Dietary Variability.

The fortified site of Los Millares in southeastern Spain is one of the best-known Copper Age sites in southern Europe and has been studied extensively, improving our understanding of the development of political centralization and social stratification during the 3rd millennium cal BC in the Iberian Peninsula. A unique feature of Los Millares is its expansive cemetery complex, from which human remains of dozens of individuals have been recovered. While burial patterns and grave goods have been key to interpretations of the site, bioanthropological data from the skeletal remains is still limited. This study uses stable isotope analysis from human bone to discern dietary patterns from 12 individuals buried at Los Millares and compares these data with other contemporary burial populations in Spain and Portugal. The goal of this study was to evaluate the dietary importance of aquatic resources and domesticated animals during this transitional period. The results of this study point to diets mainly composed of terrestrial proteins with little marine input, despite the site's proximity to the Balearic Sea. While these findings are based on a small sample size and more data is needed to clarify these results, larger than expected standard deviations suggest some dietary heterogeneity within this population, with variations in protein sources and plant intake.





Organized and sponsored by **Faculty Development Committee (FDC)**, this one-day conference showcases faculty scholarship presented by Summer 2017 Faculty Scholarship Awardees, and faculty who have presented papers at a conference during the 2017-2018 academic year.

Faculty Development Committee (FDC) members:

Dawn Behan, Professor of Education

Deb Brydon, Associate Professor of Criminal Justice (Feld Chair)

Mohammad Chaichian, Professor of Sociology (FDC Chair)

Christopher De Vault, Assistant Professor of English

Stephen Gilmour, Associate Professor of Accounting

Kristy Raine, Reference Librarian/Archivist

Anna Waterman, Assistant Professor of Biology



With special thanks to:

Jean Bjorseth, Director of Event Services

Bill Krebs, Catering Manager

