



2011

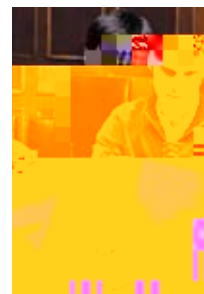
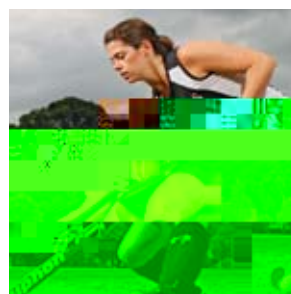
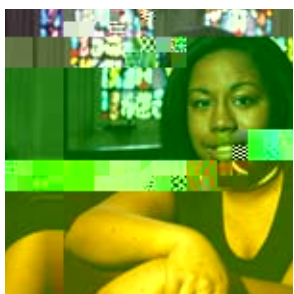


Table of Contents

Listing of Presentation Sessions & Locations	Page 2
Chart of Events	Page 3
Acknowledgements and Special Events	Page 4
Highlights of the Rhodes Fellowships Program Oral Session	Page 5
Fine Arts Oral Sessions	
Connecting Communities through Music in the Delta	Page 6
King Biscuit Blues Fellowship	Page 7
Historical and Cultural Iconography in Art and Theatre	Page 7
Student Films: Sixteen New Ways of Viewing the World	Page 9
Humanities Oral Sessions	
Human Rights	Page 10
Heroism and Virgil	Page 11
Vietnam and Aftermath	Page 12
Early American Literature	Page 14
Art, Reconsidered	Page 15
Nationality and Gender Conflicts in Hispanic Literature	Page 16
Classical Literature	Page 18
Critical Essays in the Humanities	Page 19
Hispanic Literature	Page 20
The Search for Values in Light of Western History and Religion	Page 22
Social Sciences Oral Sessions	
Research in Economics	Page 23
Research in the Social Sciences	Page 25
Ethnography at Home	Page 26
Research in Anthropology and Sociology	Page 31
Buckman Fellowship	Page 34
Natural Sciences Oral Sessions	
St. Jude Summer Plus Fellowship	Page 36
Conservation and the Environment	Page 38
Quantitative and Computational Science	Page 40
Genetics, Biochemistry and Molecular Biology	Page 43
Poster Session	
Fine Arts & Humanities	Page 45
Biology & Biochemistry	Page 46
Neuroscience	Page 53
Physics and Mathematics & Computer Science	Page 55
St. Jude Summer Plus Fellowship	Page 57
Social Sciences	Page 59

Presentation Sessions & Locations

10:45 am

Highlights of the Rhodes Fellowships Program (-12:15pm), Blount Auditorium
[refreshments preceding session in Buckman Lobby]

1:00 pm

Connecting Communities through Music in the Delta (-1:40pm), Frazier Jelke C
Research in the Social Sciences (-1:45pm), Kennedy 208
Heroism and Virgil (-1:45pm), Palmer 207
Vietnam and Aftermath (-2:00pm), Palmer 208
Human Rights (-2:15pm), Palmer 205
St. Jude Summer Plus Fellowship (-2:15pm), Frazier Jelke B
Research in Economics(-2:30pm), Kennedy 205
Conservation and the Environment (-2:30pm), Frazier Jelke A
Ethnography at Home (-6:00pm), Kennedy 201

2:00 pm

King Biscuit Blues Fellowship (-2:40pm), Frazier Jelke C
Early American Literature (-2:45pm), Palmer 207
Research in Anthropology and Sociology (-4:30pm), Kennedy 208

2:15 pm

Art, Reconsidered (-3:15pm), Palmer 208

2:30 pm

*Nationality and Gender Conflicts in Hispanic Literature (-3:30pm)*St.

Jude

St.8(40C

C

Other Special Events

April 29th, 5:30pm – 8:30pm

Gallery Showing, "Unsheltered: Unseen"

409 S. Main, Memphis TN

Justin Deere

Unsheltered: Unseen is a project that aims to build the Memphis community while empowering it through artistic expression. Our goal is to help Memphians better understand the lives of those who are experiencing homelessness. We hope to also bridge the gap from someone who sees the world of homelessness to someone who only sees panhandlers. The project is simple: We offer disposable cameras to a minority crowd and ask participants to share their view and unique perspective of Memphis. We hope to expose unseen and obscure perspectives into a world many may have never seen before. In doing so, their images can be a catalyst for change and promote discussion on homelessness and panhandling in our community. If nothing else, we hope even partly that the project can re-humanize a population which has seemingly been marginalized down to a "homeless problem." We are showcasing artists' work for an opportunity to inform, diversify and build bridges in our Memphis. This gallery showcase exposed the photos to approximately 350 people and raised nearly 800 dollars towards homelessness and hunger ministries in the Memphis community.

April 30th, noon

Unveiling, "Public Sculpture on the Greenline"

Vollintine & Evergreen Greenline at N. Parkwa

Civic Engagement / Service

The Ruka: Rhodes' First Intentional Community

Jami King, Maggie Rector, Leigh DeVries, Shelby Kramer, Sarah Dockery, Catherine Appleton

Faculty Sponsor: Bernadette McNary-Zak, Department of Religious Studies

This presentation will explore the history of intentional communities and its impact on the founding and execution of Rhodes' first intentional community, The Ruka. We will discuss the way in which this fellowship opportunity provided through the college has allowed for the members to engage in service-learning on a daily basis and come to recognize the intersection of academic pursuit and community engagement. This initiative extends to a focus on household sustainability. At its most basic, the Ruka exists as six individuals living intentionally with the common goals of engaging with one another, the effort to sustain our planet, and service to the greater Memphis community. Our service is focused at Caritas Village, a local community center and coffee shop in the Binghamton neighborhood. Our presentation aims to situate the community within its historical context and explore the inspirations behind the project and its day-to-day execution in the lives of Rhodes students.

Creative Activity

The Making of Lester Middle School Photography Club

Kelly Parry

Faculty Sponsor: Liz Daggett, Department of Art

This semester, a photography club at Lester Middle School was started with the help of some motivated volunteers

illuminated manuscripts, a new case is made for the identification as Christ. In addition, by examining primary sources and similar artifacts, its purpose can be determined as a pointer for reading manuscripts.

3:20

Skeletons in the Closet: Andy Warhol's Self-Portraits

Jacob Smith

Faculty Sponsor: David McCarthy, Department of Art

In considering the prolific output of Andy Warhol, one of America's most popular and celebrated artists, much attention has been given to his portraits of the rich, the famous, the beautiful, and the dead. But a fascinating subcategory of these artworks is the self-portrait, the hundreds of images Warhol made of himself. Whether streaked with camouflage paint or disguised in drag, Warhol's self-portraits amount to a critical examination of the visual construction of gendered identity and of the motivations of the preeminent Pop artist himself. Taking into account issues of the closet, queering, and the body, I argue that acknowledging Warhol's identity as a homosexual is essential to a complete understanding of the artist and his work. Warhol's sexual identity did not only inform his practice; it is inconceivable without the perspective that his life as a gay man in mid-century America provided him. His self-portraits, in which Warhol reflects directly on his own identity through visual form, offer the clearest and most conclusive evidence of his willful, insightful subversion.

3:40

Gender and Domesticity in Roy Lichtenstein's Girls Series

Olivia Wood

Faculty Sponsor: David McCarthy, Department of Art

In 1961, the Pop artist Roy Lichtenstein began his famous Girls series. This series continued until 1966 and became an iconic component of his work. They featured his signature style associated with commercial art and Pop art, including Ben Day dots, stenciling, and simplicity in subject, color, and line. The Girls series also acted as an outlet for the artist during the tumultuous years of his separation and divorce from his first wife Isabel. In this paper I explore Lichtenstein's Girls series through the framework of the interpretation introduced by scholar Bradford Collins in his essay, "Modern Romance: Lichtenstein's Comic Book Paintings". Collins introduces a biographical context, including Lichtenstein's marital problems, as a way of understanding his paintings. Lichtenstein's personal life is essential to understanding the Girls series and also serves as a way to understand the paintings in a cultural context. In his series, Lichtenstein draws from mass culture such as comic books and popular cinema his portrayal of women. By using the gendered iconography of the 1950's, Lichtenstein explored mainstream American stereotypes of beauty, commented on the conventions of domesticity, and worked within the traditional subject matter of Western painting.

4:00

Bridging the Gap: How the Works of John Cage, Robert Rauschenberg, and Andy Warhol Developed the Pop Sensibility

Amy Bower

Undergraduate Research and Creative Ac

HUMANITIES ORAL SESSIONS

Human Rights

Palmer 205, 1:00pm – 2:15pm

Session Chair: Sarah Endres

1:00

Human versus Civil Rights: Exploring the Right to Marry in the LGBT Community

Rush Brady

Faculty Sponsor: Leigh Johnson, Department of Philosophy

This documentary film, created in Dr. Leigh Johnson's Philosophy 401 class Humanism and Human Rights, explores the right to marriage in the lesbian, gay, bisexual, and transgendered community and, with the implications of church and religion, in the religious community. Within the film, I hope to accomplish two main goals: first, to

1:45

Racism in Memphis Schools: The History, Philosophy and Current Events

most divine interference on behalf of Aeneas, Virgil depicts him (and therefore Augustus) as a leader with powers surpassing those of previous Trojan heroes, like Hector.

1:15

Classical Values in an Unlikely Hero

Hunter Hallman

Faculty Sponsor: Gail Murray, Department of History

Virgil's epic, the Aeneid, explores the classically Roman values of loyalty, selflessness, bravery, and piety. These are hardly original attributions to a hero – however, Aeneas is not just an idol. He is the em1He is the em13

1:15

The Press at War: Media Coverage of the War in Vietnam

Ian Engdahl

Faculty Sponsor: Robert Saxe, Department of History

In the conventional wisdom that has emerged regarding the Vietnam War, the media are often portrayed as having played a pivotal role in channeling public opinion against the war, irreparably damaging the American military mission. This research analyzes the nature of media coverage of the Vietnam War, as well as the ethical and logistical constraints facing journalists covering the war. This research reveals a marked increase in critical media coverage of the war in 1968, yet an analysis of public opinion polling reveals that this shift in media coverage paralleled but did not provoke the change in public opinion of the war. This analysis reveals that the media coverage of the Vietnam War was a necessary—but not sufficient—cause of the U.S. withdrawal. That is, but for the groundbreaking and skeptical journalism of a few great reporters that revealed some of the war's greatest costs, support for the war would likely have been more sustainable. It was not, however, the media alone that lost the war.

1:30

Bombs at Home: Intersections of the Civil Rights Movement and the Vietnam War

Kimberly Harn

Faculty Sponsor: Robert Saxe, Department of History

My paper explores the nexus of race, domestic and foreign relations at the juncture of two of the most dynamic historical developments of mid-century America – the Vietnam War and the Civil Rights Movement. Analyzing the antiwar responses of an individual civil rights leader, Dr. Martin Luther King Jr., and a civil rights organization, SNCC (Student Non-Violent Coordinating Committee), in addition to other voices of dissent, it will be argued that civil rights movement provided a unique interpretive framework for the Vietnam conflict. Traditional narratives have often dismissed civil rights activists' opposition to the war as a product of radicalism. In these interpretations, opposing the war ultimately detracted from the cause of racial justice. My paper will argue, in contrast, that opposition to Vietnam grew directly from activists' organizing experiences; the linking of domestic and foreign issues arose organically from their activism. Thus, the landscape of the civil rights movement and the direct organizing experiences in this struggle for racial justice proved to be the most decisive factor shaping civil rights activists' opposition to the Vietnam War.

1:45

“There’s the way it ought to be, and there’s the way it is,” : Race Conflicts Explored and Perpetuated Through Vietnam War Films

John Pevy

Faculty Sponsor: Robert Saxe, Department of History

Following the end of the Vietnam War, the American people sought a variety of avenues to help explain the atrocities they had witnessed. One of the most highly lauded of these vehicles for explaining the war was through film. However, oftentimes these cinematic representations of the war fall short of fully elucidating the myriad of complexities present during the episode. Examining the attempts by filmmakers to confront racial tensions and identity within the American troops and comparing that with the portrayal of the Vietnamese within the films *Full Metal Jacket*, *Platoon*, *Good Morning Vietnam*, *The Deer Hunter*, *Apocalypse Now*, and *Hamburger Hill* illustrates how these Hollywood depictions of the Vietnam War are plagued by an American-centric lens, crippling them from fully comprehending the conflict.

Early American Literature

Palmer 207, 2:00pm – 2:45pm

Session Chair: Katy Johnson

2:00

"A Tribe of Ugly Phantoms": Edgar Huntly and the Search for American Identity among the Grotesque

Hunter Kuhlmann

Faculty Sponsor: Jason Richards, Department of English

In his 1799 novel *Edgar Huntly*, Charles Brockden Brown explores the seemingly antithetical relationship between two vastly different conceptions of American.

Art, Reconsidered

Palmer 208, 2:15pm – 3:15pm

Session Chair: EJ Juchheim

2:15

Visual Language and Understanding: The Problem with Non-Representational Art

Allen Pierce

Faculty Sponsor: Leigh Johnson, Department of Philosophy

In the last hundred years, patronage of the visual arts by the average man and woman has plummeted, and art has moved from the home, workplace and public forum into the museum and gallery and locked itself in. Meanwhile, philosophers of art have by and large focused on either the intention of the artist or the emotional reaction of the viewer, neglecting the entire system of communication that lies between them, buried in the artwork itself. For this reason I think it important that we reexamine art using the tools of semiotics in order to better unders(t)4.178r4.1(o1.5(ers)2 i)-

3:00

Colonial Representations, Post-Colonial Aspirations: French Cultural Policy during the Final Decade of the Tunisian Protectorate, 1946-1956

Daniel Williford

Faculty Sponsor: Jeffrey Jackson, Department of History

In the Tunisian Protectorate, the phrase “cultural activities” referred to events such as artistic expositions, academic conferences, and literary competitions organized by a variety of associations which received backing from the French colonial administration. By examining in detail these cultural activities, sponsored primarily by the Bureau of Public Instruction in the decade before independence, I will argue that through such events the government of the Resident General sought to propagate and promote a particular image of French culture among Tunisian elites with the intention of securing a dominant position for French art, language and literature in a post-colonial Tunisia. This image, which presented French culture as both unified and diverse, continuous and dynamic, universal and superior emerged principally as a response to the new political realities created by the growing strength of Tunisian nationalism. In addition, assuring this privileged position for French civilization in areas where direct political control was being curtailed or abandoned altogether was a process directly related to Frenchmen’s negotiation of

4TjD-0.05Tc0.019dw(0.003tiaL Nbre care 6(p)586e.512Cm(4)5(-2)h 8.6(5)2(4uL8((e)ifr)-3(6)D4(F)5h48(B)283(0.50)h fBT 10 72 64101360m480.6

partidarios opuestos. A pesar de su confusión e ingenuidad, Matia tiene que luchar para entender las relaciones que mantiene con individuos ambos presentes y ausentes. Mientras nos cuenta estos pasos de su vida, Matia empieza a entender la complejidad de la maduración, incluso la dificultad de ser leal, independiente, y confiable.

My URCAS presentation reflects my investigation into the role of gender in Ana Maria Matute's novel *Primera memoria*. This novel uses a female narrator, Matia, to tell the story of the life of a young girl during the Spanish Civil War. This provides a fresh and unique perspective by going against the expectations of a war novel, focused on masculinity. The masculine aspects still appear in the novel, however we receive them through the thoughts of a young girl instead of a male figure. Matute's decision to present the war through the life and mind of a feminine character causes the reader to question his or her preconceptions about gender and the capacities of both men and women. Even though the story takes place on an island off of Spain, Matia still finds herself surrounded by hostility and opposing parties. Under all this confusion and naïveté, Matia must fight to understand the relationships she holds with individuals both present and absent in her life on the island. While she leads us through the development of her life, Matia begins to understand the complexity of growing up, including the struggles with loyalty, independence, and trust.

3:00

Sender's Commentary on Spanish Culture through the Lens of Nancy

Kristin Wilkinson

Faculty Sponsor: Eric Henager, Department of Modern Languages

En la novela, *La Tesis de Nancy*, Ramón J. Sender escribe sobre una joven estadounidense, Nancy, quien va a Andalucía para estudiar durante un año. Por los ojos de Nancy, el lector recibe una crítica del país, la gente y sus costumbres. Ella conoce a mucha gente que influye su forma de pensar sobre la realidad española, aunque la mentalidad de Nancy va deformando esa realidad a cada paso. Mi estudio se enfoca en esa deformación de la realidad española por medio de la perspectiva de Nancy. Al mismo tiempo la novela desarrolla una crítica de la cultura académica de los EEUU. Con su personaje central, Sender elabora una reflexión no sólo sobre su patria sino sobre los contextos académicos estadounidenses en los que muchos exiliados españoles se encontraban en la época contemporánea a la publicación de la novela.

In the novel, *La Tesis de Nancy*, Ramón J. Sender writes about a young American, Nancy, who goes to Andalucía to study for a year. Through Nancy's eyes, the reader receives a critique of the country, the people, and the customs. She meets many people who influence her form of thinking about Spanish reality, even though Nancy's mentality distorts this reality at every turn. My study focuses in this distortion of the Spanish reality through Nancy's perspective. At the same time the novel develops a critique of the United States' academic culture. With his central character, Sender develops a reflection not only about his homeland but about the United States' academic contexts

the use of children as protagonists and latin americans in exile. In particular, I focus on the European environment as potentially detrimental to Latin Americans in exile. To elaborate on this analysis, I will also reference works such as 100 Years of Solitude and Chronicle of a Death Foretold.

Classical Literature

Palmer 207, 3:00pm – 3:45pm

Session Chair: Mary Honeychurch

3:00

On the God of Socrates: A Pagan Apology

Jill Crenshaw

Faculty Sponsor: Joseph Jansen, Department of Greek & Roman Studies

This paper argues that Apuleius' *On the God of Socrates*, a Platonic writing concerning the nature of demons, is often interpreted as a work of pagan apologia. While some scholars have entertained the notion that Apuleius was familiar with Christianity, I go much further, contending that *On the God of Socrates* responds directly to the arguments of second century Christian apologists, who sought to undermine pagan spirituality. In particular, the paper highlights the points of contact between Apuleius and the theological arguments of Justin Martyr by exploring Apuleius' other works and social relations. Apuleius' *On the God of Socrates* holds many similarities to the works of Justin Martyr and other apologists.

3:15

Augustus and Livy's Romulus

Sarah Rogers

Faculty Sponsor: Susan Satterfield, Department of Greek & Roman Studies

This thesis will explore Livy's version of the story of Romulus, especially with respect to Augustus. Romulus was the founder and first king of Rome and was highly admired by Augustus, who considered himself a second Romulus. Livy, a historian writing during the rule of Augustus, recorded our fullest extant version of the Romulus legend. I aim to show that through his Romulus story, Livy was presenting to Augustus praise for actions already taken and advice for his rule, as well as a warning for the future. Livy states that his history is meant to provide his readers exempla (examples) of how to live. Since one of his most important readers would have been Augustus, I argue that Livy used the Romulus legend to provide commentary on Augustus and his rule. Furthermore, Livy offers alternate versions of some stories which allow us to question the role of Augustus in Rome. Most of all, Livy offers a warning to Augustus and anyone with power not to make enemies, for if you do, the senators may tear you apart when a cloud descends.

3:30

The Objectivity of Celsus' *De Medicina*: An impartial outsider's unbiased treatment of biased sources

Jason Ballard

Faculty Sponsor: David Sick, Department of Greek & Roman Studies

The *De Medicina* by Cornelius Celsus remains the largest source of knowledge on the medical practice in the early Roman Empire. The medical field contemporary to Celsus was characterized by a heat

antagonized Britain's hubris of moral and cultural superiority. By pushing the English outside of the parameters that they were accustomed to, Gandhi and Collins effectively lit the fuse that would end imperialism.

4:15

The Construction of Female Ideologies in the Carthusian Order

Jen Kotrady

Faculty Sponsor: Bernadette McNary-Zak, Department of Religious Studies

The Carthusian Order is one of the most physically austere and contemplative monastic practices. The Order claims inspiration from the Desert Fathers and formulates its Statutes based on the laws established by the Church fathers. This inspiration suggests the Carthusian susceptibility to the female ideological construction, as presented by Elizabeth Clark in "Ideology, History, and the Construction of 'Woman' in Late Ancient Christianity." Clark notes that the Early Christian view of women comprises of the Church Fathers' sexist beliefs, and serves as a crucial methodology for understanding the misogynistic

the process, he takes creative liberties in order to continue his project to find the hero, a step that endangers the legitimacy of his adventure. His lack of inhibition to move between fiction and history and his personal investment in the search create an important subtext about the construction of the hero and the motivations of the author. Utilizing quijotesque aspects and other heroic qualities in literature, my proposal is centered on the heroic components represented in *Soldados de Salamina*. It investigates the imagination and perception that Cercas develops as essential components of Hispanic notions of the hero. The project examines in particular moments in the novel that problematize the ties between literary and historic heroes. Taking into account the weight that a figure like Don Quijote possesses in Hispanic culture, I read Cercas' novel in part to develop a commentary about the process through which a literary hero can distort a real hero.

4:30

Existentialism and personal identity: the function of political dictatorship in Alberto Fuguet's *Mala Onda*

William Polan

Faculty Sponsor: Eric Henager, Department of Modern Languages

Set to the backdrop of civil unrest during the Pinochet dictatorship, *Mala Onda* by Alberto Fuguet draws unique perspective to the conflict through protagonist Matias Vicuna. A high school student of upper-class origins, Matias, struggles to stay afloat amid personal, political, and family crises. In a coming of age novel, political instability and the Pinochet dictatorship weigh heavily on both the protagonist and the reader. Matias fights with existentialism as he searches for his identity and the meaning behind the struggles he endures. Utilizing first person narrative, themes of alienation, guilt and angst form a unique existential perspective. Through Fuguet's portrayal of both Matias Vicuna and the Pinochet dictatorship, arises an existential crisis of existence.

The Search for Values in Light of Western History and Religion

Palmer 207, 4:00pm – 4:45pm

Session Chair: Evan Nelsen

4:00

Shakespeare and Machiavelli: Power vs. Virtue

Maha Bano

Faculty Sponsor: Judith Haas, Department of English

4:15

Rousseau vs. Hobbes

Maria Raffanti

Faculty Sponsor: Daniel Cullen, Department of Political Science

4:30

Five Steps to Happiness: Self-Help from the History of Western Thought

Ian Engdahl

Faculty Sponsor: David Sick, Department of Greek & Roman Studies

SOCIAL SCIENCES ORAL SESSIONS

Research in Economics

Kennedy 205, 1:00pm – 2:30pm

Session Chair: Catherine Appleton

1:00

Modeling Career Salaries in Major League Baseball

Joel Berger

Faculty Sponsor: Nick McKinney, Department of Economics & Business

Using data collected from the Lahman Baseball Database, this study found that college attendance does not affect the total career salary of either batters or pitchers, the total salary earned in the first six years, or the arbitrations years, of batters and pitchers, and for the first half of both batters' and pitchers' careers. However, college attendance does prove significant and beneficial for pitchers in the second half of their careers. Results found that being an international player does prove beneficial, more total salary, for batters across their entire career and for both batters and pitchers during their arbitration years. The rookie age of a both batters and pitchers is only significant leading to a higher total salary during the arbitration years. The study builds models to map total salary for batters and pitchers using performance statistics.

1:15

The Change in Recycling Rates

Anne Buckthal

Faculty Sponsor: Nick McKinney, Department of Economics & Business

I am examining the relationship between recycling rates and income in Massachusetts. The study uses data from the Massachusetts Department of Environmental Protection (MA DEP) to analyze the impact of income on recycling rates. The study finds that higher income households tend to recycle more, and that this relationship is stronger in certain areas of the state. The study also examines the impact of education and age on recycling rates. The study finds that higher education and age are also associated with higher recycling rates. The study concludes that income is a significant factor in determining recycling rates, and that higher income households tend to recycle more. The study also finds that education and age are also important factors in determining recycling rates.

1:45

The Impact of Industries on Senate Voting

Kelley Ranager

Faculty Sponsor: Nick McKinney, Department of Economics & Business

In a representative democracy politicians are responsible for making decisions that will benefit their home states. Many papers try to identify factors, both political and economic, that play a role in the voting decisions of the senators. In this paper I will use data from each state's economy and senate votes to look at whether or not the structure of the market in each individual state affects the votes in the senate. With a probit model, I hope to estimate how each industry effects the likelihood that a senator will vote for or against a certain bill or amendment. Using percentages of real GDP, I will look how much each sector of industry attributes to a state's economy as a whole. With each individual vote, I losing peies on Som8-31.8e]TJry

Research in the Social Sciences
Kennedy 208, 1:00pm – 1:45pm
Session Chair: Joshua Anderson

1:00

Teaching and Learning Through the Arts: The Influence of the Arts in Non-Arts Classrooms

Charles Tyler Turner

Faculty Sponsor: Mark Smith, Department of Education

Rigorous disciplinary and academic standards are melded with a rich musical curriculum at the Soulsville Charter School in Memphis, TN. Sponsored in part by the Stax Museum of American Soul Music, all students in the school play an instrument and rehearse with an orchestra daily. This qualitative research study goes beyond the overt musical influences in the school and examines the role of the arts and creativity in non-arts classrooms (such as math and science). Following the qualitative research model, I entered the study with no hypothesis, but rather a question

Ethnography at Home

Kennedy 201, 1:00pm – 6:00pm

Session Chair: Susan Kus

1:00

Scratching the Surface: An Ethnographic Study of a Memphis Vietnamese Nail Salon

TonAi Doan

Faculty Sponsor: Susan Kus, Department of Anthropology & Sociology

There has been a growing trend in recent years of Vietnamese Americans and other immigrants working within the nail industry. Working as a nail technician is not a glamorous job. It appears to many outside the industry to be a simple and straight forward job. It is a job that requires not only speed and precisions, but also patience and humility. Technicians sacrifice their personal space to work with people's hands and feet. Besides discussing the challenges nail technicians face on the job, this presentation also explores the complexities of conducting ethnographic research, specifically focusing on my experience as a Vietnamese American studying other Vietnamese Americans. While familiarity with language and culture gave me some advantages, it also presented a number of challenges. By becoming a participant observer in a nail salon this semester, I have come to understand the complexities and intricacies of a nail technician's job.

1:15

The Animals Behind the Animals: A Behind the Scenes Ethnography of the Memphis Zoo

Alex Lippincott

Faculty Sponsor: Susan Kus, Department of Anthropology & Sociology

The practice of ethnography serves to gather information about the vast cultural variety displayed by our species. This ethnographic study attempts to understand and explain the shared culture of those that work to maintain the Memphis Zoo and is based on the field work that I carried out on location over the course of this semester. In an attempt to highlight the "animals behind the animals," this ethnography exhibits those who work to maintain the exhibits and display those who create the displays. In particular, I discuss the intricacies and demands of tasks and schedules that govern the life of zoo employees. I seek to explain not only how one "keeps" a zoo, but also why.

1:30

Impediments to Speech: Learning English as a Second Language

Ashley Jones

Faculty Sponsor: Susan Kus, Department of Anthropology & Sociology

Ethnography is the heart of cultural anthropology, and participant-observation is the key to the ethnographic method. Participant-observation involves examining and interacting with those within a particular cultural scene. This semester I chose to observe an English as a Second Language class at Literacy Mid-South by situating myself as a student. My study raised several questions. How do stereotypes of non-native speakers compare to the realities of

inside of an animal clinic. Through my role as a volunteer, I was able to engage and participate in their culture and their way of life, and I began to become aware of some themes and patterns. One was the strength of communication that flowed between humans and animals. We know that animals cannot speak; however, it amazed me to see how strongly some pet owners spoke up and advocated the issues and conditions that complicated the life of their beloved pet. This communication also extends to the response of the doctor and staff when it came to treating these animals. My presentation attempts to help us appreciate the hows and whys of the “Dr. Dolittle” in pet owners and veterinarians.

2:00

Hanging out at the Edge: An Ethnographic Look at the Community Built Within a Local Coffee Shop

Jack Clark

Faculty Sponsor: Susan Kus, Department of Anthropology & Sociology

Ethnography is an anthropological method that can be used to gain an inside view of a cultural scene. This method involves actively participating within a location to eventually become familiar with the setting. It also involves observing and recording details that range from the interactions with people who frequent the site, down to the sensory elements including how the location smells, looks, and even how the atmosphere feels. For the past semester I have been practicing the method of ethnography at “The Edge Coffee House” in Midtown-Memphis, Tennessee. My presentation will discuss how through my experience I have



3:45

Goner Records and the Day the Music Died: An Ethnographic Study of a Midtown Record Store

Sarah Lavatai

Faculty Sponsor: Susan Kus, Department of Anthropology & Sociology

If the music industry has sold their integrity for the big bucks, then Goner Records in the Cooper-Young district of Memphis is an outsider among a crowd that prioritizes the money over the music. An outsider to the record store culture, I immersed myself in the store and practiced the ethnographic method of participant observation for eleven weeks. Ethnographic fieldwork is the respected methodology mainstay that involves entering a field site where one observes the behavior and rituals of the people. By obtaining a grasp of the cultural context, the ways of a different people become less foreign in the eyes of the ethnographer. The study of ethnographers can challenge stereotypes, dissolve ethnocentrism, and shrink the gap of understanding between cultures. My work in the field site of Goner Records has challenged my preconceptions of the ‘type’ of people that work at a record store. My findings suggest that the owners and employees at Goner Records prioritize recording and providing music over the bottom line. The culture of the store is structured around music instead of placating customers and business partners. My presentation will focus on how Goner Records survives selling music without “selling out”.

4:00

Storytelling: Old and New

C. J. Lewis

Faculty Sponsor: Susan Kus, Department of Anthropology & Sociology

What makes a story compelling? Is it the characters, the setting or the one telling the story? Humans have told stories for hundreds of years. It has been a way to talk about life, make sense of the world and brag about the last fish caught. In this study I chose to go behind the scenes of a new take on story-telling: Role-playing games. The way that I looked into this was the ethnographic method. This means that over the last 3 months I have gone to a store called Gamerz Depot to observe and participate in Role-playing games. Many times players are branded as geeks, nerds, even Satanists. However, within their imagined world they are masterful magicians, daring dragon slayers and splendid saviors. As this creative process unfolds we catch a glimpse of a powerful human endeavor: collective storytelling. While the Dungeon Master creates the story the story never finishes exactly as planned. This is because the story depends upon the players, and the players depend upon the story. If you want to see how this relationship plays out, if you dare, come to Buckman and witness the power of collective story telling.

4:15

A Slice of Life at Broadway Pizza: An Ethnography of a Family-Run Neighborhood Restaurant

Travis Lux

Faculty Sponsor: Susan Kus, Department of Anthropology & Sociology

Understanding “the other” is perhaps more important now, in our seemingly shrinking world, than it has been before. In the discipline of anthropology, we come to understand “the other” through the practice of the ethnographic method. This methodology is characterized by participant observation and allows the researcher to identify social patterns and cultural nuances through consistent engagement with a particular culture. I spent three months observing and participating in the cultural scene at Broadway Pizza in the Memphis neighborhood of Binghampton. My research questions ultimately focus on what it means to be a family-run business, for both the employees and the neighborhood at large, and how the restaurant remains successful and popular despite a poor economy, competition from standardized chain restaurants, and its geographically isolated location.

4:30

Village Coffee

Joshua K. McKinley-Smith

Faculty Sponsor: Susan Kus, Department of Anthropology & Sociology

Anthropologists use their ethnographic skills to bridge the cultural gaps that confound communication between differing groups of people. The ethnographic method of participant observation employs the anthropologist as an

active participant of a culture, or cultural scene in order to offer a more nuanced and complete picture of lives other than the ones we normally lead. What results is the dissolution of any barriers and miscommunications between differing groups of people, fostering a valuable progressive comprehensive cooperation for the benefit of all parties involved. And in an ever growing and connected world ethnographic endeavors such as these, as well as the anthropological mind, have never been more vital to the peaceful interactions and meaningful exchanges that take place between the diverse human communities of the world. The Binghamton community, right here in Memphis TN is a great example of a small-scale community that has successfully integrated its diverse neighborhood population. I took the role as ethnographer at its vibrant core community center and coffee shop, Caritas Village, to witness firsthand the process of community solidarity. What I found was a strong and beautiful matrix of social interaction, bound together by art and food. The shared communal space and the activities that take place in it are critical to maintaining community in this diverse neighborhood.

4:45

Turning the Tables: A Cultural Study of Life at the Soup Kitchen

Liza Newell

Faculty Sponsor: Susan Kus, Department of Anthropology & Sociology

time I have been there, and while his enthusiasm has motivated him to work through these setbacks, it was his business sense that has kept Real 2 Reel on its feet. Working in his studio has taught me that the fulfilling and transformative work to which Marx referred in his concept of “species-being,” at least in our current society, requires more than simply passion and effort. I explore the assertion that in order to achieve one’s species-being today, one must often make a profit.

5:30

Curl up and Dye: The Art of Cosmetology at a Memphis Hair Salon

Ana Volarich

Faculty Sponsor: Susan Kus, Department of Anthropology & Sociology

The purpose of my research is to examine the ways in which group identity and interpersonal relationships intersect to constitute the cultural scene of a hair salon. Using the ethnographic method of participant observation, I studied the daily activities of stylists at a Paggio’s for Hair. Observation of stylists working with clients, and conversation with stylists and with clients provided me with an intimate look at the inner workings of the salon as a cultural setting. Personal statements gathered through interviews and casual conversation show how relationships and interactions between stylists function as the vital foundation of the salon. These accounts also provide the basis for understanding how Paggio’s stylists interpret the art from that is hair design. My research demonstrates the deeper meaning and importance of hair as an art, which challenges conventional notions and perceptions of what hair salons embody or represent.

5:45

St. John Orthodox Church: How Deliberate Ritual Creates a Traditional and Meaningful Community

Laura Wiggins

Faculty Sponsor: Susan Kus, Department of Anthropology & Sociology

The use of the ethnographic method is crucial in understanding a culture “other” than one’s own. This method allows one to document and interpret another culture through participation in the daily life of the culture and observation of the culture from an outside, evaluative viewpoint. Many times, one’s cultural practices are not apparent unless highlighted by an “outsider.” As an informed outside participant, I have found that St. John Orthodox Church is a community that is bound together through deliberate rituals. Though many traditional church cultures seem to foster routine ritual, the people of St. John Orthodox Church bring thoughtful deliberateness to their rituals in each word that is spoken and each move that is taken. From church-wide “special” events, such as Forgiveness Sunday, that encourage community building, to the repeated weekly services, to the individual interactions at weekly meals, the people of St. John Orthodox Church choose to act deliberately in all things. This deliberateness allows them to render the mundane sacred, which serves as a means of developing the tightly-knit community at St. John Orthodox Church.

Research in Anthropology and Sociology

criteria, e.g., how a community, rather than an individual, might be affected by the research. The absence of these community-specific considerations makes the guidelines provided by the IRB inadequate for supporting ethical



4:15

Doing Gender!: The Performance of Gender in Restaurant Kitchens

Chelsea Wakstein

Faculty Sponsor: Thomas McGowan, Department of Anthropology & Sociology

Restaurants are cultural scenes that people gather in to

1:30

N- and C- Terminal Truncations to MCM 4 Lead to a Stable Subunit

Anna Magliolo; Leslie Epling and Eric Enemark, Department of Structural Biology, St. Jude Children's Research Hospital

Faculty Sponsor: Mauricio Cafiero, Department of Chemistry

DNA replication is a highly regulated and complex process that has many important checkpoints and protein complexes involved. The minichromosome maintenance (MCM) proteins have been found to play an important role in DNA replication. Specifically, MCM proteins that assemble into a closed ring hexamer are the presumed replicative helicase. Each of the six subunits is a member of the AAA+ superfamily of ATPases, and ATP hydrolysis occurs at the interface between the two subunits within the closed ring. In archaea, the MCM complex is made of six identical protein subunits, but the eukaryotic MCM complex, the subject of this study, is a heterohexamer, with the subunits designated as MCM2-7. While each of the eukaryotic subunits maintains a similarity in sequence in the C-terminal region, MCM 2-7 each varies highly at the N-terminal region, making each of the subunits unique. In examining the individual subunit MCM4, systematic truncations were made initially at the N-terminal, with additional truncations then made at the C-terminal portion of the gene. From the truncations made, a stable domain was discovered at the N-terminal region of MCM4. This stable domain includes a documented functional mutation designated as chaos3, a point mutation that can lead to mammary adenocarcinomas.

1:45

Defining the Role of Human Zinc-finger Antiviral Protein in Influenza Virus Infection

Van Phan; Hans Häcker, Department of Infectious Disease, St. Jude Children's Research Hospital

Faculty Sponsor: Darlene Loprete, Department of Chemistry

Influenza virus is an important human pathogen responsible for annual epidemics and occasional, devastating pandemics. The genomes of influenza viruses encode 11 known proteins. One of these proteins, the non-structural

mass spectrometry and finally assayed for CE inhibition. The derivatives with electron-donating substituents in the aromatic aldehydes yielded better inhibitors than those with electron-withdrawing substituents. One of these derivatives may become a suitable inhibitor for clinical use, with the purpose of reducing CPT-11's dose-limiting toxicity.

2:15

A Robust Method for Reducing Inflow Artifacts in Arterial Input Function of DCE-MRI Datasets and Sectorial Quantification of Localized Renal Perfusion

Duan Yutong; R. B. Loeffler, R. Song, A. Tipirneni, C. M. Hillenbrand, Department of Radiological Sciences, St. Jude Children's Research Hospital; N. Oesingmann, Siemens Medical Solutions USA, Inc.

Faculty Sponsor: Ann Viano, Department of Physics

Conventional methods for renal perfusion measurement require timed blood and/or urine collections, and may carry the risk of nephropathy due to nephrotoxic contrast agents and lengthy exposure to ionizing radiation, whereas MRI methods using gadolinium chelates (most commonly Gd-DTPA), which are solely filtered through glomeruli, can noninvasively provide excellent anatomical resolution and an accurate estimate of Glomerular Filtration Rate (GFR). Most renal perfusion models require the Arterial Input Function (AIF) to be known and model the contrast bolus and GFR as a global estimate of kidney function. However, pulsatile inflow effects due to the heartbeat can cause distinct noise in the AIF signal measured within the descending aorta, leading to overestimation of AIF. Currently the lack of spatially resolved perfusion measurement also impedes assessment of varied perfusion in different regions within the kidney, which is especially desired for patients who received radiation therapy that unevenly affected the kidney. This study includes statistical techniques that smooth the suFR a97a0e4.3(o)dg13 Tw[8 eo Tc dE6



1:15

Monitoring Fertility in Snow Leopards (*Panthera uncia*) through Noninvasive Fecal Steroids

Chelsea Peters; Andrew Kouba, Erin Willis, Memphis Zoo

Faculty Sponsor: Darlene Loprete, Department of Chemistry

Snow leopards (*Panthera uncia*) are an endangered species and little is known about their reproductive physiology.

Our laboratory utilized a non-invasive method of fecal hormone extraction and analysis to monitor reproductive steroid levels to aid captive breeding efforts. Fecal samples were collected from female leopards in zoos around the U.S. Hormones were extracted from dried/ground samples using methanol. Concentrations of reproductive hormones were then analyzed by enzyme immunoassay using a broad-scale antibody for progestagens and a specific antibody for an estrogen metabolite, E1G. In three animals, SB2010, SB2013, SB2664, preliminary results indicate that this species is strictly an induced ovulator. The average follicular phase length was 16 days and the average baseline E1G concentrations were 484.52ng/ml and 503.8ng/ml in SB2013 and SB2664, respectfully. The average baseline for SB2010 was 180.0ng/ml, indicating possible sub-fertility. Seasonality and potential heat stress were observed in a larger completed data set for SB2013. Further analysis of these animals and other animals on ()6(of t)9.8(ev35.1(

and the Mississippi River in towns like New Madrid will provide future researchers a better understanding of how to approach environmental issues in order to benefit both the people and the river.

2:00

Using GIS to Identify Future Grassroots Organization Partners for GlobeMed

June Mi Elisha Kang

Faculty Sponsor: Sarah Boyle, Department of Biology

According to the World Development Report 2000/2001 by the World Bank, one billion people lack access to health care systems. In order to address this issue, students from

4:15

MP2 and DFT calculations of the interaction energies between boronated aromatic molecules and small DNA models: applications to cancer therapy

Kelly Allison

Faculty Sponsor: Mauricio Cafiero, Department of Chemistry

Boronated molecules are seeing increased use in pharmacological applications including cancer therapy. In boron-neutron capture therapy, boronated molecules are bombarded with slow neutrons in order to instigate cell death in tumors. Thus, the ability to target boronated molecules to specific areas in the body is crucial. Previous research in our group has examined how boronated aromatic molecules in



miR-210 was significantly higher in RA versus OA synovial tissues. Analysis of genes modulated by hypoxia in RASF identified RASSF5, SUMO3, IL-12A as possible miR-210 target genes. The increased expression of miR-210 under hypoxic conditions may have implications for the activated and apoptosis-resistant phenotype of RASFs, due to the likely relationship to RASSF5, SUMO3, and IL-12A. The down regulation of these genes via miR-210 may help RASF to adapt to the hypoxic and inflammatory environment in RA joints.

3:15

Exposure to ruthenium-based chemotherapeutic KP1019 delays cell cycle progression in *S. cerevisiae*.

Rebecca Miller; Pamela Hanson, Department of Biology, Birmingham-Southern College

Faculty Sponsor: Mary Miller, Department of Biology

The ruthenium-based Trans-[tetrachlorobis(1H-indazole)ruthenate(III)] (KP1019) has shown to be a promising alternative to traditional platinum-based therapies, exhibiting dose-dependent activity against a variety of explanted human tumors and preclinical tumor models. Although the true mechanism of action of KP1019 remains uncertain, oxidative stress caused by Ru(II) has been shown to play a key role in its cytotoxic capabilities, and may be linked to DNA damage. In our experiment, we investigated *Saccharomyces cerevisiae* as a potential model system in order to further our understanding of the mechanism of action of KP1019. Our goal was to determine the effects of KP1019 on the cell cycle progression of *S. cerevisiae* with regard to nuclear and cellular morphology. We found that increasing concentrations of KP1019 lead to the accumulation of large budded cells with dumbbell shaped nuclei that spanned the bud neck. We observed that cells treated with KP1019 continued to grow during this cell cycle delay, as was evident by an increase in cell size of KP1019-treated cells compared to untreated cells. Overall, our evidence suggests that KP1019 triggers a cell cycle delay in *S. cerevisiae* rather than terminal arrest.

3:30

Good as new? Morphological and biochemical analyses reveal variation between original

3:30

FLA12 is still under study. Because the varying genomes used arose in separate ecological environments, this result suggests that imprinting programs can reflect an adaptive trait. Different environments may promote the imprinting of distinct classes of genes.

POSTER SESSION

Multi-sports forum of the Bryan Campus Life Center, 4:30pm – 6:15pm

Fine Arts & Humanities

#8 Harp Ensemble Outreach and Community Impact

Amber Owens, Gina Neupert, Mae Gillespie, Ye Zheng, Lin Qiu, Suzanne East, Kelly Dodson, Leerin Campbell

Faculty Sponsor: Gina Neupert, Department of Music

The Harp Ensemble has continued their outreach program over the last year enabling the group to play for more members of the Memphis community. Many people that would not normally be exposed to harp music have been able to enjoy the music the Harp Ensemble has presented. The focus of the harp ensemble was to touch the lives and provide a release from daily stress and worries for patients,

communicates in what appears to be sign language, albeit different to the signs present in ASL. Thus, he has not yet fully acquired, the first language, but is making minute steps towards the acquisition. What I found out is that if the individual is unmotivated to learn, or does not understand the benefit or reward from learning, the person will not participate in signing. After researching and reading the different models of ASL learning, I found a new approach to teaching sign language from John Bonvillian called Behavior Modification, which incorporates positive reinforcement. From this second approach, the subject participated more and retained some signs. I concluded that although the subject may not fully be able to communicate in

amphibians, 2D:4D sexual dimorphism has not been studied in detail and knowledge is limited to two species of anurans. Of these, the Strawberry Poison Dart frog (*Oophaga pumilo*) exhibits 2D:4D sexual dimorphism, whereas the Maud Island frog (*Leiopelma pakeka*) does not exhibit 2D:4D sexual dimorphism. Digit ratio has not been investigated in amphibian species within the order caudata. The aim of this project was to test for sexual differences in 2D:4D ratios in striped newts (*Notophthalmus perstriatus*). No significant differences were present between sexes in 2D:4D ratios for any of the newts' four feet.

#14 Characterizing the estrous cycle of critically endangered Amur leopards

Jordan Perchik, Nicholas Brydon, Stephen Leavelle, Allison Graham, Rhodes College; Lauren Starkey, Emma Lendt, Andrew Kouba, Erin Willis, Memphis Zoo

Faculty Sponsor: Sarah Boyle, Department of Biology

The reproductive biology of the endangered Amur leopard, *Panthera pardus orientalis*, is not fully understood. In this study, we monitored reproductive steroid hormone levels in captive female leopards over time. Fecal samples were collected from animals in multiple U.S. zoos. Samples were then dried and ground and hormones were extracted using methanol. The concentrations of estrogens and progestagens were determined using an enzyme immuno-assay that utilized an antibody for the estrogen metabolite, estrone glucuronide (E1G) and a broad-scale antibody for both native and metabolized progestagens. Preliminary results indicated that the average baseline levels were 482 for E1G and 954 ng/gram of feces for progestagens (n=4). The follicular and luteal phases were then determined by calculating peaks above baseline for E1G and progestagens, respectively. The average follicular phase length for the female Amur leopard was 19.6 days and the average luteal phase length was 50 days, for an average estrous cycle of 70 days. Although most felids are considered induced ovulators, we observed spontaneous ovulation in one non-breeding Amur leopard. By increasing our understanding of estrous cycles of captive Amur leopard females, we hope to improve conservation efforts by refining captive breeding and extending our research to the wild population.

#15 The Old Firestone Tire and Rubber Plant and Potential Brownfields on Firestone Avenue in Memphis, TN

Sarah Tchang

Faculty Sponsor: Rosanna Cappellato, Department of Biology

In 1937, a Firestone tire and rubber plant opened on Firestone Avenue in the New Chicago area of North Memphis. By 1956, it had become one of the largest manufacturers of tires in the world, and it provided thousands of Memphians with jobs. Due to the economic downturn and automotive competition, the plant closed in 1983. The old Firestone plant site, a former brownfield, is currently owned by the Mid-South Junior Golf Association, who has significantly improved the conditions of the site for the community. At this time, Firestone Avenue has five potential brownfields, which have delayed the socioeconomic growth of the New Chicago community. These sites are the target of an EPA assessment grant which will fund the cleaning and the revitalization of this area. My research has

compiled a list of recycled materials (e.g. cardboard, aluminum, glass, plastic, and paper) and analyzed the quantity of recycled items on a monthly basis. My analysis highlights locations in Shelby County that would benefit from PGF sponsorship. In conclusion, this research promotes the growth of sustainable restaurants in the Mid-South.

#17 Industrial Mercury Emissions' effect on Mercury Concentrations in Soil and Wetland Water Near Recreational Areas in Memphis

Tiara Brice

Faculty Sponsor: Rosanna Cappellato, Department of Biology

Mercury (Hg) is a chemical element that has detrimental health and developmental effects when released, absorbed, and bioaccumulated within the natural environment. Coal-fired power plants and oil refineries are two of the major sources of anthropogenic Hg emissions in urban areas. Different species of Hg are transferred, stored, and cycled within plants, soil, water and the atmosphere. Soil and water samples were collected at Fuller Park, a park located 3.33 miles from the TVA Allen Fossil Plant and 5.76 miles from Valero Refinery. Soil samples were also collected from Overton Park as a control environment. Samples were analyzed with an oxygenated decomposition furnace at the University of Mississippi in Oxford, MS. Water samples were analyzed with a phase separator at the same laboratory. Preliminary results showed high levels of soil Hg (an average of 110.7595686 ug/Kg) in Fuller, values comparable with Hg soil concentrations of soil near a coal-fired power plant in China. Results will help to assert whether two of the main local anthropogenic Hg emitters have a significant effect on Hg concentrations on soil and wetland regions that are proximate to a family recreation park.

#18 Potential Brownfields in Memphis, Tennessee: 46 Keel Avenue and 1249 Fairfax Street in the Hollywood District

Blaire O'Neal

Faculty Sponsor: Rosanna Cappellato, Department of Biology

There has been a growing interest in the assessment and redevelopment of brownfields in Memphis, TN. Brownfield sites are abandoned, underused, or vacant properties that are prevented from being redeveloped due to a high



#20 Examination of Spring Migration and Stopover Sites using WSR-88D Radar

Jared Swenson

Faculty Sponsor: Michael Collins, Department of Biology

Radar technology is now recognized as an important tool for understanding avian ecology and influencing conservation management. Previous studies on avian migration have demonstrated that the Mississippi River is an important corridor for neotropical migrants during both spring and fall migration. In this study, historical WSR-88D radar surveillance data from the station located in Memphis, TN was used to quantify bird density at stopover sites during peak spring migration of nocturnally migrating passerines. Base reflectivity and base velocity were analyzed at 0.5° and 1.5° elevational bands in the hours following twilight to view exodus events of nocturnal migration. Areas of highest reflectivity, and thus bird density, were then characterized using GIS and LANDSAT data. The GIS map will be used in future studies to determine important characteristics of stopover sites within a 100km radius of Memphis, TN.

the mammalian myosin II protein (MyoB), a protein that in other systems acts in concert with the protein actin to generate motion of cells and cell components. We have demonstrative via fluorescence microscopy of GFP-tagged MyoB that MyoB localizes to sites of septation in wild type (non-mutant) cells of *A. nidulans*, and we have shown via promoter replacement that global down-regulation of MyoB represses septation. These data support a hypothesis that MyoB plays a necessary role in normal septation in fungi.

#24 The role of Myosin regulatory light chain in fungal cell division

Michael Pluta, Kristen Wendt, Loretta Jackson-Hayes, Darlene Loprete

Faculty Sponsor: Terry Hill, Department of Biology

Using genetically engineered fluorescent homologues, we have demonstrated that the cytoskeletal protein Myosin Regulatory Light Chain (MrlC) localizes to sites of cell division (septum formation) in the filamentous fungus *Aspergillus nidulans*. MrlC in other systems has been demonstrated to form a complex with the motor protein myosin and to regulate myosin's interactions with actin, which can result in motion of whole cells or cell components. Since septum formation can be viewed as a special form of motility in which the cell surface is progressively pinched inward until the cell divides, the localization of MrlC to septation sites supports a hypothesis that it plays some role in regulating cell division in the filamentous fungi. To further investigate this hypothesis, we have engineered a chimeric DNA molecule which, in principle, should be able to cause the deletion of MrlC from the genome of *A. nidulans*. Contrary to expectations, the cells resulting from this procedure (termed transformants) are still able to form septa under all conditions so far tested. Thus, MrlC's role in septation must be viewed as one of fine-tuning of the process (e.g., regulation of timing or site selection) rather than as a component necessary for completion of the process.

#25 Novel Cancer Drug Exhibits Cardioprotective Activity During Ischemia

Nicholas Brydon; Katherine Lothstein; Len Lothstein, University of Tennessee; Polly Hoffman, University of Tennessee; Judith Soberman, University of Tennessee

Faculty Sponsor: Gary Lindquister, Department of Biology

Myocardium is subject to irreversible injury during ischemia, and additional damage during reperfusion due to circulation of free radicals. The ability to establish cardioprotection during ischemia would not only modify the

Seagroves laboratory from a mouse model of breast cancer. Marker expression will be compared by immunostaining of monolayer cultured WT vs. KO cells (bulk tumor cells) and WT vs. KO tumorspheres, which are enriched for the CSC population. It is expected WT cells/spheres will be enriched for the expression of CSC markers when compared to the KO cells/spheres. Expression of CD24 (heat stable antigen), CD29 (Integrin β 1), CD49f (Integrin α 6), and CD133 (Prominin-1) will be examined. In addition, a subset of novel HIF-1-dependent genes, including creatine kinase b (Ckb) and embigin (Emb), will be evaluated in both WT and KO cultured cells and mammary tumors.

#27 Pre-clinical Testing of the Novel Anthracycline AD445 in Human Breast Cancer Cell Lines

Bethany Larkin; Tiffany Seagroves, Len Lothstien , Department of Pathology, University of Tennessee Health Science Center

Faculty Sponsor: Gary Lindquester, Department of Biology

A modified anthracycline-based chemotherapy (AD445) was developed to circumnavigate problems of cardiotoxicity, multi-drug resistance, and cancer relapse presented by use of doxorubicin (DOX). Initial research by Dr. Lothstein shows a promising future for the use of AD445; however, no extensive studies have been conducted in human breast cancer cells to compare AD445 to DOX. This study looks at the anticancer activity of the two drugs in MB-MDA-231 and SUM 159 cell lines. MTT assays indicated similar IC₅₀ /IC₉₀ doses for the drugs in both cell lines. Cancer stem cells (CSCs) are believed to be a small subpopulation of tumor cells resistant to chemotherapies, including DOX. To test if AD445 preferentially eradicates breast CSCs, tumorsphere formation assays and ALDEFLUOR sorting assays were used. The tumorsphere assay demonstrated that AD445 is slightly more efficient at inhibiting growth of MB-MDA-231 spheres than DOX. Currently, the ALDEFLUOR assay is used to sort cells into CSC and tumor bulk cell subpopulations. The efficiency

functional domains. Here, we constructed C-terminal truncations of PkcA that successively removed each domain or sub-domain. Each of these truncations was expressed as a GFP chimera. We determined which domains of the protein were sufficient for localization by observing the transformed colonies under a fluorescence microscope.

#33 Stratigraphic Analysis of Lead in Soil

Erik Campbell, Punam Patel, Reed Beazley

Faculty Sponsor: Jon Russ, Department of Chemistry

Most urban environments have elevated concentrations of lead (Pb) in the soils. Past studies focusing on the analysis



the hippocampus. This suggests that chronic stress induces apoptosis in the cortex and that exercise can decrease neurodegeneration in this region.



St. Jude Summer Plus Fellowship

#46 MicroRNA Alteration of Transcriptional Activity by Gene Promoter Interaction

Lucas T. Lauder milk; Steven W. Paugh, William E. Evans, Department of Pharmaceutical Sciences and Hematological Malignancies Program, St. Jude Children's Research Hospital, Memphis, TN

Faculty Sponsor: Gary Lindquenter, Department of Biology

In recent years, microRNAs (miRNAs) have been characterized as important gene regulators. Extensive research has been conducted examining the role of these RNA molecules in degrading transcribed messenger RNAs (mRNAs) and otherwise preventing the translation of viable protein. Recent research suggests that, in addition to interfering with translation and degrading mRNAs, miRNAs may also play an alternative role in up-regulating mRNA transcription levels. Two broad categories by which miRNAs down-regulate gene efficiency have been characterized: direct and indirect. MicroRNAs can either directly interact with mRNAs to down-regulate them, or they can act upon co-factors that, in turn, down regulate the efficiency of translation. MicroRNAs have also been shown to indirectly up-regulate gene efficiency by acting on cofactors that would typically act in a suppressive manner. What has not been characterized is a direct mechanism by which miRNAs up-regulate gene efficiency. This study is designed to test the hypothesis that miRNAs up-regulate gene efficiency.



Social Sciences

#51 Hope VI: Shifting Toward Self-Sufficiency

Stephanie Jones, Josh McKinley, Clark Smith, Phylicia Douglas, Anne Farrar, Olivia Ryan

Faculty Sponsor: Heather Jamerson, Department of Anthropology & Sociology

Hope VI Memphis is part of a \$5 billion federally-funded program that aims to de-concentrate poverty by providing public housing residents with Housing Choice Vouchers and case management services. Memphis is currently focused on Cleaborn Homes, the second to last public housing site in the city. Cleaborn Homes consisted of 413 households with average annual earnings of \$5000. Many of the residents have lived in public housing for as few as 10 years up to an entire generation. Between October 2010 and March 2011, all of the residents (321 using Housing Choice Vouchers) were relocated to various areas of Memphis so that construction of the new development could begin. All of the residents are eligible for case management to help them adjust to their new communities and work toward self-sufficiency. Our team's goal is to evaluate the successes and challenges these residents faced during their relocation, as well as the current delivery of the case management services. Throughout our study, we have employed participant observation in both the community and the organization providing case management services, surveys and interviews with participants (residents, CSS case managers, and partner agencies), and GIS mapping. Our findings and recommendations work to improve the services provided to and overall satisfaction of the relocated residents.

#52 Hope VI: The Revitalization of a Downtown Community

Joshua K. McKinley-Smith, Phylicia Douglas, Olivia Wells, Catherine Smith, Stephanie Jones, Anne Farrar

Faculty Sponsor: Heather Jamerson, Department of Anthropology & Sociology

Hope VI is a federal housing development program funded by the United States Department of Housing Development (HUD). Its goal is to de-concentrate poverty and revitalize dilapidated neighborhoods by allocating money and resources to cities for the development of mixed income housing. In May 2010 HUD awarded \$22 million to the Memphis Housing Authority (MHA) for the redevelopment of Cleaborn Homes. Cleaborn Homes sits

among jockeys. Jockeys are required to meet a pre-determined weight requirement before each race, forcing many to resort to extreme measures to lose the weight needed to reach that requirement. The pressures jockeys face to be thin are unique in that they are created by the environment in which they work. Additionally, horse racing is not simply a sport, but it is a career for jockeys, adding another level of pressure to meet the weight requirements. We propose to conduct a comprehensive study to examine the prevalence of disordered eating among jockeys and its effect on mental and physical health. We plan on studying jockeys from across the United States. Jockeys will be given the Eating Attitudes Test (EAT) as well as several other measurements designed to test for a range of eating problems and their effects.

aged population. The purpose of the present study is to investigate the prevalence of cyber bullying that occurs on Rhodes Campus and more specifically, to examine cyber bullying in the context of Greek organizations. Greek life, as well as student involvement in other organizations, serves as a significant part of a student's college experience. Membership in a Greek organization allows one to belong to a collective group. From this the individual develops a sense of power and dominance. Therefore, an individual belonging to a Greek organization may be more likely to cyber bully in order to maintain the established social hierarchy within the organization. Additionally, the present study explores if leadership skills and self-esteem are factors related either to the risk of becoming a victim or aggressor of cyber bullying.

#65 "I just was not thinking of others and their feelings": Narrative Perspective-Taking and Peer Acceptance

Annika Wuerfel, Darcy Gist

Faculty Sponsor: Marsha Walton, Department of Psychology

Jerome Bruner proposed that narrative serves as the cultural tool that organizes and gives meaning to everyday experience. Previous research suggests middle childhood is a time of dramatic development for these narrative skills, which facilitates improved peer relations. Our study aimed to explore how children with varying levels of the narrative skill of perspective-taking differed in their social outcomes. Written narrative data was collected from 182 children. The children were asked to write about interpersonal experiences with their peers. Children also completed surveys with self and peer reports about various social measures. Narratives were coded for psychological mindedness by counting the number of times each child author referred to thoughts, emotions, or motives in relation to the self, other, or collective we. From these counts, we created a new variable called scope of consciousness, which reflected whether each child author practiced zero, one, two, or all three categories of psychological perspective-taking. Children who incorporated different perspectives in their narratives experienced more desirable social outcomes, including higher self worth, fewer nominations for least popular, and more nominations for most popular, giving and getting respect, and sociability leadership. We suggest that narrative abilities aid children in successful navigation of their social worlds.

#66 Do You Answer the Homophone with Your Left or Right Ear? Hemisphere Imparity in Producing Parts of Speech

Keshav Kukreja, Grace Mosley

Faculty Sponsor: Katherine White, Department of Psychology

While language is primarily dominated by the left hemisphere, recent research has shown that the right hemisphere is also involved in some aspects of language processing. However, the majority of this research has focused on our understanding of words in the context of sentences. The present research focuses on the hemispheres' roles in language production, specifically the hypothesized imparity in spelling ambiguous words. Participants heard homophones whose spelling depended on whether the noun (cell) or verb (sell) part of speech was activated. The homophones were presented to either the right or left ear, and were preceded by a noun or verb prime, or letter control that was heard in both ears. Participants were asked to type out the first spelling that came to mind and a sentence using that target word. Previous research has shown that the left hemisphere quickly activates the dominant meaning of ambiguous words, whereas the right hemisphere keeps both meanings active. Thus, we predicted greater syntactic priming (i.e., spelling the homophone that matches the prime's part of speech) for homophones presented to the right ear/left hemisphere than for homophones presented to the left ear/right hemisphere.

#67 Is It Worth the Weight? Spelling Homophones Gets Better With Age

Gregory M. Palm, Ashley M. Ladd, Rachel M. Stowe

Faculty Sponsor: Katherine White, Department of Psychology

Previous research has shown that young and older adults produce more homophone substitution errors (e.g., "blue over" instead of "blew over") on when homophones are preceded by words that share orthography (e.g., glue) or semantics (e.g., sky) with the contextually-inappropriate homophone (e.g., blue). This experiment investigated influences of a homophone's part of speech and spelling regularity on semantically-primed homophone errors. Young and older adults typed auditorily-presented sentences containing homophones preceded by a prime semantically related to the alternate or by an unrelated word. Homophones shared or differed in part of speech, and their shared phonology had a regular (more common, e.g., EW) or irregular (less common, e.g., UE) spelling. While

older adults made fewer errors overall, semantic priming increased errors for both age groups, but only when homophones shared part of speech. Independent of priming, both groups made more errors when homophones contained a regular spelling, with larger effects for young adults. These findings demonstrate age preservation in syntactic constraints on lexical selection but age differences in orthographic influences during orthographic encoding.

#68 Protesting the Norm: The Right Hemisphere's Role in Language Production

Emily Shaw, Ashley Ladd

#77 Does the Temperature of Water Affect Agonistic Behavior of Crayfish?

Hillary Connell, Emily Krone, Jennifer Marshall, Alix Matthews, John Menz
Faculty Sponsor: Michael Collins, Department of Biology

#78 Aggression Between Male Crayfish & Between Female Crayfish of the Species *Orconectes virili*

Kate Evans, Michael Olushoga, Thomas Zigtema, Allison Julien
Faculty Sponsor: Michael Collins, Department of Biology

#79 Crayfish Habitat Preference of Shelter Over Sand

Boomer Malanchuk, Matt Walker, Jenna Sarett, Josh Goodwin
Faculty Sponsor: Michael Collins, Department of Biology

#80 Tree Stomata Density and Aperture and Tree Height

Sonya Kheshti, Mary Catherine Reeves, Rachel Stowe, Isabelle Hatfield
Faculty Sponsor: Michael Collins, Department of Biology

#81 Darker Substrate as it Relates to Aggression in Crayfish

Zac Hart, Ruth Mengistu, Lauren Miller, Rachel Wheeler
Faculty Sponsor: Alan Jaslow, Department of Biology

#82 The Effect of Substrate Depth on Crayfish Digging Behavior

Shamit Dua, Nicholas Jensen, Sahar Mokhtari, Hung To
Faculty Sponsor: Alan Jaslow, Department of Biology

#83 The Effects of Short Term Flooding on Stomatal Aperture

Maggie Blake, Alex Finkelson, Eden Johnson, Drew Link, Lauren Stokes
Faculty Sponsor: Alan Jaslow, Department of Biology

Faculty Sponsor: Alan Jaslow, Department of Biology
#84 The Effect of Light Color on Stomatal Aperture Size in *Dianthus*

Andrew Capelluti, Allison Cowling, Tim G.1(-gsWKristen W)9.4(e)-0.6n2/nt

Index of Authors, Faculty Sponsors, Session Chairs (bold)

- Abdoch, Rami, 31, 59
Ackerman, Bette, 60
Adcock, Victoria, 15
Alix, Veronica, 54
Allen, Sarah, 53
Allison, Kelly, 43
Alsamadisi, Adam, 48
Anderson, Joshua, 25
Anthony, Rob, 56
Appleton, Catherine, 6, 23
Armstrong, Austin, 64
Arnold, Bradley, 19
Asbury, Mason, 62
Ash, Anjie, 66
Aughinbaugh, Amy, 9
Aulie, Alegra, 56
Axam, Kalen, 9
Badami, Steven, 64
Badger, Charles, 55
Badger, Nick, 7, 56
Baker, Nicole, 7
Ballard, Jason, 18, 54
Banerjee, Shubho, 41, 55
Bano, Maha, 22, 37
Barham, Katie, 20
Barzizza, Megan, 4, 9
Bass, John, 6, 7
Beazley, Reed, 53
Becher, Jessica, 66
Becker, David, 9
Berger, Joel, 23
Bigus, Liz, 66
Birnbaum, Dee, 60
Bishop, Heather, 32
Bitters, Cynthia, 42
Blake, Maggie, 65
Boozalis, Ted, 49
Boozalis, Ted S., 44
Bordelon, Catherine, 5
Boswell, Marshall, 19
Bower, Amy, 8
Boyle, Sarah, 38, 39, 40, 46, 47, 48, 51, 60,
64
Bradley, Cole, 10
Brady, Ginny, 62
Brady, Rush, 10
Breck, Eric, 42, 56
Breckenridge, Hannah, 66
Brice, Tiara, 48
Brodskiy, Yuri, 53
Bromfield, Hannah, 4, 9
Brooks, Megan M., 54, 55
Brown, Jessica, 66
Brownfield, Jenna, 62
Bryant, Lee, 39
Brydon, Nicholas, 47, 50
Buckthal, Anne, 23
Buie, Desiree, 66
Burke, Shawnecca, 66
Burnam, Jess, 4, 9
Butler, Ben, 9
Cafiero, Mauricio, 37, 40, 41, 42, 43, 52
Cahill, Ashlyn, 64
Cai, Jean, 57
Caldwell, Andrew, 4, 9
Campbell, Erik, 53
Campbell, Leerin, 45
Capelluti, Andrew, 65
Cappellato, Rosanna, 39, 47, 48
Cartagena, Maria, 36
Carter, Nancy, 36
Ceccoli, Stephen, 5, 34, 35
Chen, Taosheng, 36
Claiborne, Jeanine, 26
Clark, Jack, 27
Clotworthy, Laurie, 4, 9
Collins, Michael, 19, 49, 64, 65
Colpoys, Caroline, 12
Conley, Ryan, 4, 9
Connell, Hillary, 65
Connell, Rachel, 4, 9
Coonin, Victor, 7
Copeland, Blake, 52
Coquelin, Melissa, 66
Costello, Ryan, 52
Cowan, Jessica, 9, 42
Cowling, Allison, 65
Crain, Alex, 62

Hebert, Della, 4, 9
Heck, Robert, 52
Henager, Eric, 16, 17, 20, 21, 22
Henin, Sandy, 50
Herran, Alex, 60
Hill, Marian, 66
Hill, Terry, 5, 49, 50, 52
Hillenbrand, C. M., 38
Hiller, Joseph, 60
Hines, Cuyler, 64
Ho, Phat, 66
Hoffman, James, 36
Hoffman, Polly, 50
Hoffmeister, Brent, 55
Hoge, Brianna, 49
Holifield, Kara, 28
Holland, Josie, 7
Honeychurch, Mary, 18
Hook, Elizabeth, 31
Houghton, Jennifer, 40
Howard, Scott, 36
Howard, Sydney, 9
Howe, Alex, 56
Hughes, Jesse, 66
Ibryamova, Nuray, 35
Ishii, Rina, 49
Jackson, Jeffrey, 16
Jackson-Hayes, Loretta, 43, 49, 50, 52
Jacobsen, Megan, 56
Jamerson, Heather, 59
Jansen, Joseph, 18
Jaslow, Alan, 65
Jaslow, Carolyn, 65, 66
Jeans, Elizabeth, 52
Jeng, Anson, 7
Jensen, Nicholas, 65
Johnson, Anna, 21, 39, 51
Johnson, Eden, 65
Johnson, Katy, 14
Johnson, Leigh, 10, 11, 15
Johnson, Shyretha, 9
John-Teye, Emmanuel, 66
Jones, Ashley, 26
Jones, Kimber, 38, 39, 51
Jones, Melissa, 5
Jones, Nicole, 61

Jones, Stephanie, 59
Joplin, Adam, 41
Juchheim, Elliot "EJ", 15
Juchheim, Elliott "EJ", 9
Julien, Allison, 65
Jüngel, Astrid, 43
Kabelik, David, 54
Midn, 65 -0.9(rsonb3y.0004.9451 0.9372
Howard, Sydney, 9
4Howard, Sydney, 9
Ja725O-0.00aire, 7

Kynie,/TTie

R,

- Lendt, Emma, 47
Lenz, Danielle, 65
Lewis, C. J., 29
Lindquister, Gary, 50, 51, 57
Link, Drew, 65
Lippincott, Alex, 26
Lisse, Ryan, 64
Liu, Chengcheng, 57
Liu, Lingling, 36
Löeffler, R. B., 38
Lopez, Ariel, 15
Loprete, Darlene, 37, 39, 49, 50, 52, 57
Lothstein, Katherine, 50
Lothstein, Len, 50, 51
Lowery, Brennan, 34
Luque de Johnson, Laura, 5, 37, 39, 51
Lux, Travis, 29
Ly, Sandra, 64
Lyons, Phillip, 46
Magliolo, Anna, 37
Magness, Jake, 66
Main, Emily, 7
Malanchuk, Boomer, 65
Marshall, Jennifer, 65
Martin, Courtney, 11
Mary, Michelle, 52
Mattancheril, Sunny, 64
Matthews, Alix, 65
McCarthy, David, 8
McCravy, Matt, 43, 51
McDonald, Colin, 25
McGeoch, Andy, 5
McGowan, Thomas, 25, 31, 32, 33, 34, 59
McKinley, Josh, 59
McKinley-Smith, Joshua K., 29
McKinley-Smith, Josua K., 59
McKinney, Nick, 23, 24
McNary-Zak, Bernadette, 6, 20
Medved, Anne, 64
Medved, Elizabeth, 65
Mehra, Komal, 54, 55
Mehta, Neha, 34
Mengistu, Ruth, 65
Menz, John, 65
Mervine, Jonathan, 56
Meyer, Deseree, 56
Milazzo, Stephanie, 6, 40
Millen, Andrew, 14
Miller, Andrew, 19
Miller, Joey, 66
Miller, Lauren, 65
Miller, Mary, 36, 44
Miller, Matt, 11
Miller, Matthew, 56
Miller, Rebecca, 44
Mills, Laney, 42
Mingos, Stephanie, 21
Mokhtari, Sahar, 65
Moore, Chris, 32
Moore, Roberta, 66
Morphy, Mallory, 9
Morris, Ben, 9
Mosley, Grace, 63
Murray, Gail, 11, 12
Nagi, Tim, 56
Ndong, Mathieu, 56
Nelsen, Evan, 22, 41
Ness, Kristen, K., 58
Neupert, Gina, 45
Newell, Liza, 30
Newman, Ashley, 64
Newman, Jess, 64
Newstok, Scott, 19
Nicholson, Alex, 64
Northcross, Reekah, 64
Nucaro, Alyssa, 55
Oakley, Elyse, 65
Oesingmann, N., 38
Ogg, Robert, 5, 58
Olivarez, Rebecca, 66
Olushoga, Michael, 65
O'Neal, Blaire, 48
O'Neil, Robin, 30
Ospelt, Caroline, 43
Owens, Amber, 5, 45
Page, Jasper, 45
Palm, Gregory M., 25, 63
Parkerson, Sarah, 66
Parrish, Colleen, 57
Parry, Kelly, 6
Parry, Kelly H., 54, 55
Pate, Sarah, 4, 9

Patel, Punam, 53

Paugh, Steven W., 57

Spainhour, Stephen, 10, 11
Starkey, Lauren, 47
Stewart, Sam, 56
Stokes, Lauren, 65
Stowe, Rachel, 25, 54, 55, 63, 65
Stradley, Eric G., 42
Strandburg, Robert, 58
Straus, Jesse, 61
Suna, Elise B., 54
Svejkosky, Joe, 55
Svejkosky, Joseph, 42
Swenson, Jared, 49
Taufic, Camilla, 48
Taylor, Sara Beth, 43
Tchang, Sarah, 47
Thompson, Ivy A., 54, 55
Thompson, Rebecca, 66
Tipimeni, A., 38
To, Hung, 65
Todd, Michael, 7
Tong, Alex, 36
Torstrick, Zach, 56
Tran, Lan, 58
Travis, Jay, 24
Turner, Charles Tyler, 25
Tweel, Alexander, 66
Veron, Kathryn, 16
Ververis, Megan, 64
Vest, Brad, 56
Viano, Ann, 38, 52
Volarich, Ana, 31
Volgas, Nicholas, 56
Wagner, Lara K., 35
Wagstaff, Drew, 12
Wakstein, Chelsea, 34
Walker, Charles, 64
Walker, Matt, 65
Walsh, Ben, 7
Walton, Marsha, 63
Wang, Jessica, 64
Wang, Xiao, 49
Ward, Rachel, 64
Watson, Charlotte, 4, 9
Wehby, Emily, 7
Weidler, Andrew, 61
Wells, Olivia, 59
Wendt, Kristen, 50, 65
Wheeler, Rachel, 65
White, Katherine, 25, 63, 64
Whitman, Ginny, 66
Wiggins, Laura, 31
Wilkinson, Kristin, 17
Williams, Chanrika, 66
Williford, Daniel, 16
Williford, George, 4, 9
Williford, Katherine, 17
Willis, Erin, 38, 39, 47
Wilson, Anne, 36
Wood, Olivia, 8
Woods, Emily, 43
Wuerfel, Annika, 63
Yarn, Charles, 25
Yocum, Hunter, 65
Yu, Alex, 51
Yuan, Brian, 42
Yutong, Duan, 38
Zastoupil, Lynn, 19
Zhang, Kelly, 52
Zheng, Ye, 45
Zigtema, Thomas, 65
Zurche, Katja, 14

