Earlham College’s
7th Annual Research Conference
April 11-13, 2016
7th Annual Research Conference

Earlham College
Richmond, Indiana
2016

Conference Steering Committee:

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Welcome Letter

Members of the Richmond and Earlham College Community,

It gives us great pleasure to welcome each and every one of you to the Earlham College 7th Annual Research Conference!

This event is an opportunity for the students here at Earlham to share their research and scholarly projects. We have a wide variety of work from multiple disciplines across the college. We hope that you will enjoy the breadth of scholarship at our conference and that you will be able to take something new away - whether it is valuable insight, a new perspective on the world and the people in it, or simply a thirst for more knowledge.

On behalf of the Earlham College 7th Annual Research Conference planning committee, welcome and enjoy!
Schedule at a Glance

Monday, April 11\textsuperscript{th}*  
Poster Presentations, Richmond Room  
4:30 – 5:15 pm  
Paper & Panel Presentations, LBC 315, 316, 317, 327  
5:30 – 6:15 pm  
*Wraps, chips, fruit, veggies, and desserts will be available in the CIL Commons area on the 1\textsuperscript{st} floor of LBC.

Tuesday, April 12\textsuperscript{th}**  
Paper & Panel Presentations, LBC 315, 316, 317, 327  
5:00 – 6:00 pm  
**A Nacho Bar and dessert will be located on the 3\textsuperscript{rd} floor of LBC.

Wednesday, April 13\textsuperscript{th}***  
Paper & Panel Presentations, LBC 315, 316, 317, 327  
1:00 – 2:20 pm  
***Pretzels, dessert, and punch will be located on the 3\textsuperscript{rd} floor of LBC.
Detailed Schedule

April 11th – Poster Session
4:30-5:15 pm, Richmond Room

P-01. Mathematical Model to Simulate Behaviour of Thermal Elements in Cryogenic Environment
Saimoon Thapa & Anmol Lamichhane
Keywords: Thermal, CMB, Computation

P-02. Motion Tracking for Live Music Performance
Forrest Tobey, George Crowson, Anmol Lamichhane, Edward Ly, Eamon Roosa, & Jeff Rosenthal
Keywords: Music Motion Tracking

P-03. Scholastic: A Friendly yet Powerful Programming Language
George Crowson
Keywords: Programming Languages, Object Oriented, Error Reporting

P-04. Musical Juggling Balls
George Crowson
Keywords: Electronics, Juggling Balls, Virtual Instruments

P-05. 3 remarkable collaborations between 20th century composers and choreographers
Bita Baligh
Keywords: Dance History, 20th Century Music, Composer and Choreographer

P-06. Modeling the Sound Pattern of Standard Chinese
Andrew Dai
Keywords: Sound Patterns, Computational Models, Standard Chinese
P-07. Nicrophorus orbicolicis, Nicrodus surnimensus, Nicrophorus margenatus, and Necrophilia americana carrying capacity on Nantucket Island, MA
Elisabeth Sorrows
Keywords: Carrion Beetle, Endangered, Distribution and Seasonality

P-08. Film and Buddhist Ways of Seeing
Gabriel Penk, Rebecca Richeimer, Erica DeBruyne, Annikka Roy, Minda Dettman, Antonio Maestas, & Jeremy Swerdlow
Keywords: Buddhism, Film Studies

P-09. Development of the Attitudes Toward Native Americans Scale
Jensen Pennock
Keywords: Attitudes, Scale, Native Americans

P-10. Temperature-dependent phase behavior of Pluronic F127 triblock copolymers in water
Jinhee Kim
Keywords: Polymers, Materials

P-11. The Effects of Goal Setting on Academic Success
Jordyn Grimes
Keywords: Goal Setting, Motivation, Assigned Goals

P-12. Paleoenvironmental Reconstruction of Bell’s Korongo East, Olduvai Gorge: Preliminary Results
Katherine Sorrows
Keywords: Geoarcheology, Human Ancestors, East Africa

P-13. It Don’t Matter if You’re Black or White
Raven Derrickson
Keywords: Transracialism

P-14. Hence, the Chicago Boys Magnify the Neoliberal Agenda
Shatha Sbeta
Keywords: Democratization, Social Fragmentation, Libya
P-15. Biodiversity in the Bicentennial Legacy Conservation Area: Gathering baseline data in partnership with landowners
   Yelitza Garcia, Nicholas Sontag, Olivia Honigman, & Andrea Ball
   Keywords: Conservation Biology, Spatial Ecology, Environmental Land Use

P-16/7. Developing an External Website for the Earlham College Libraries
   Allison Muterspaw, Lara Miller, Mercedes Zabawa, William Henry,
   & Mollie Goldblum
   Keywords: Kenlee Ray, Library

P-18. Molecular Dynamic Studies of Z[WC] DNA and the B to Z-DNA Transition
   Ashutosh Rai & Micaela Bush

P-19. Faster, More Accurate Quantification of Diffusion and Correlated Motions in Lipid Bilayers
   Tara Urner, Gwendolyn Claflin, Rodoula Kyvelou-Kokkaliaris,
   Michael G. Lerner, & Hoang T. Tran

P-20. America behind bars: Examining the disproportionate rate of incarceration in the United States over the years
   Aaratrika Bose
   Keywords: Mass Incarceration, Tough on Crime Policies, American Public Policy
April 11th – Poster Panel

4:30-5:15 pm, LBC 124: Literature of Latinos in the US (poster panel)

Students in this first year seminar have read literature from a diverse group of Latino/a authors. Using the literature as inspiration, students will discuss their own individual research projects covering topics such as: Japanese presence in Latin America, Chicana writers and Third Wave Feminism, Richmond and its Latino community, and Socialism and Puerto Rican Writers. Each student will present a poster which features the main components of their research work.

Eleanor Batista-Malat, Nora Collins, Ely Espino, Geordan Johnson, Leah Johnson, Azaan Khan, Maria Fernanda Landin Estrada, Anna Smith Lichterman, Blanca Ortiz, Daisy Rangel, Sowmma Roy, Evelyn Sanchez, Yunjoo Shin, & Katrina Thatcher
April 11th – Paper & Panel Presentations Session A

5:30 – 6:15 pm

A1. LBC 315

A1a. Sex Differences in Cardiovascular Reactivity to Physical Appearance and Performance Challenges
    Abou-Nica Fomukong, Kathleen Gerencer, Jolene Wells, & Doroteja Rubez
    Keywords: Cardiovascular; Reactivity; Gender

A1b. Perceptions of Emotional Expression in Men
    Emma Compton
    Keywords: Perceptions; Emotional Expression; Men

A1c. Swearing as a response to pain
    Nasser Karmali, Mahmoud Mahdi, & Timothy Toninga-Gyan
    Keywords: Replicability Project; Sweating, Pain

A1d. Social Facilitation and an Electronic Surveillance Presence
    Tremayne Abazs
    Keywords: Surveillance; Social Facilitation; Internet

A2. LBC 316

A2a. Crime and Nationalism in the French Concession, 1919-1937
    Olivia Hunter
    Keywords: Shanghai; Republican Period; French Concession

A2b. Hafu, Sado, Fosu, Fisu – Multicultural Japan and Modern Ethnography
    Mark Kirsch
    Keywords: Multicultural; Japan; Hafu

A2c. Exploring Spirituality and Colonialism in the Caribbean
    Oliver Smith
Panel Presentation-

Large Bodies: An exploration of casting and sculpting on a life-size scale.

Sae Yeoun Hwang, Lauren Klaine, Hannah Munro, Mark Van Buskirk

This collaborative project researched basic and advanced plaster casting and mold-making techniques. We experimented with simple and segmented molds, and demonstrated structural integrity. The work will be evaluated by how successfully the cast is made; does it maintain its integrity, is it a complete figure or only a partial cast?

Keywords: Body-Casting; Mold-Making; Sculpture
Panel Presentation-

Economics Seniors on Happiness, Migration and Development

Khalid Mehdi, Sunghee Tark, & Leslie Ossete

Three Economics seniors present senior thesis research summaries, designed to be accessible and interesting! We consider such questions as: why doesn’t increased wealth always increase happiness; what are the tradeoffs in migrating to work to another country; and will increased Chinese investment in resource rich countries deepen the ‘resource curse’ or help overcome it?

Keywords: Migration, Happiness, Development

The Determinants of Labor Migration to Gulf Cooperation countries
Khalid Mehdi

Do People Need Social Welfare Benefits to translate higher Income into Happiness: The South Korean Case
Sunghee Tark

Chinese Foreign Investment in Sub-Saharan Africa: Resource Curse Cure or Cause?
Leslie Ossete
April 12th – Paper & Panel Presentations Session B

5:00 – 6:00 pm

**B1. LBC 327**

B1a. Attentional Control in Monolinguals and Multilinguals
    Doroteja Rubez
    Keywords: *Language, Learning, Attention*

B1b. Function of Language in Forming the Creole Identity in Rhys's Wide Sargasso Sea
    Sylvia Barnes
    Keywords: *Language, Creole, Identity*

B1c. Spinoza's Way to Freedom
    Ian Bartimole
    Keywords: *Freedom, Enlightenment, Spinoza*
Panel Presentation –

Assessing Interventions to Increase Sustainable Behaviors on Campus and Beyond

Tremayne Abazs, Duncan Barber, Matthew Barger, Anisha Dongol, Hannah Irvine, Leila Jacobson, Lydia Lichtiger, Abby McCullough, Truman McGee, Bryce Rainey, Isabel Reed, Anna Seifert, Caleb Smith, Kyle Smith, Travis Smith, Erin Stone, & Sorcha Vaughn

Most of this panel will be a re-presentation of the final project for PSYC/ENST 370, where we tested interventions designed to increase recycling in Richmond, IN. With time, groups may also discuss their on-campus projects, each of which investigate a different behavior related to sustainability.

Keywords: Recycling, Intervention, Community-Based Learning
B3. LBC 316

Panel Presentation –

Internationalism: The emergence and application of a 20th century ideology

Ronke Abodunrin, Olivia Hunter, Josh Reaves, Sierra Newby-Smith, & Anh Quynh Nguyen

This set of papers discusses Internationalism, an ideology that promotes cooperation and exchange between nations. Each paper discusses a different manifestation of Internationalism during the 20th century. Topics include Pan-Africanism, Art Deco architecture, Communist revolutions, Spanish Civil War, and intellectual exchange in East Asia.

Keywords: Internationalism, History

Pan-African ideals and the Organization of African Unity’s intervention in the 1994 Rwandan Genocide
Ronke Abodunrin

Art Deco Architecture and Internationalism in Shanghai’s French Concession
Olivia Hunter

The Revolutionary Alliance of German and Russian Communists, 1914-1920
Josh Reaves

British Relief, Refugees, and Propaganda in the Spanish Civil War
Sierra Newby-Smith

Nitobe Inazo, Liang Qichao, Phan Chau Trinh and the Transnational Intellectual Exchanges in Asia during the late 19th and early 20th centuries.
Anh Quynh Nguyen
Panel Presentation –

**A Disney Adventure: Mary Poppins and the Remaking of Compulsory Heterosexuality**

Keywords: *Film, Feminism, Colonialism*

Madelaine Guss, Mandisa Marks, Peter Oberg, Ava Obrecht, & Ana Rabut

Mary Poppins: The Book and the Film
Mandisa Marks

Disney, Mary Poppins & Feminist Politics
Madelaine Guss

Mary Poppins and the Colonial Adventure
Peter Oberg

Masculine Dramas in Mary Poppins
Ana Rabut

Mary Poppins: From Witch to Fairy Godmother
Ava Obrecht
April 13th – Paper & Panel Presentations Session C

1:00 – 2:20 pm

C1. LBC 327

C1a. Behavior, Frequency and the Stereotype Content Model
    Ashley Johnson
    Keywords: Addictions, Perception, Frequency

C1b. The Immediate Effects of Yoga on Cognitive Performance and Stress Level
    Nhi Dinh
    Keywords: Yoga, Stress, Cognitive Performance

C1c. The Impact of Meditation on Memory Recall
    Chungdhak Sherpa
    Keywords: Meditation, Memory, Word Recall

C1d. Replication of “With Sadness Comes Accuracy; With Happiness, False Memory”
    Sarah Murphy, Fadi Disouqui, & Nelson Acosta
    Keywords: False Memory, Mood, Veridical Recall
C2. LBC 317

Panel Presentation –

**Earlham’s Digital Humanities Intro Presentation**

Jeremy Bleh, Daniel Wilson, Chris Simmons, Deeksha Srinath, & Emma Nixon

This panel comprises two groups. The exile group is concerned with presenting existing data, like maps, while looking for new connections. The women’s research group is interested in gathering and presenting a narrow swath of data through interviews with Earlham alums. This might cast existing data in a new light.

Keywords: Exile, Women, Digital

Raising Awareness of Exiled Tibetans and Cherokee
Jeremy Bleh & Daniel Wilson

Earlham’s Computer Science, Math, and Physics’ Gender Gap on the Web
Chris Simmons, Deeksha Srinath, Emma Nixon
Panel Presentation –

Exploring Gender and Culture through Zines

Liz Anderson, Madelaine Guss, Meg Rose, Chloe Woodward

This panel consists of presentations of zines made for a course on women, gender, and sexuality. The zines explore the meaning of gender and how it is done and undone through cultural productions and economic practices. The zines critique normative categories of gender and sexuality and the naturalized relationships dominant discourses make between them. The presenters will discuss the content of their zines, as well as their process for constructing them noting how theory and praxis coincide.

Keywords: Zines, Gender, Sexuality

The Cost of Gender
Liz Anderson

Complicating TV: Deconstructing Gender in Popular Television Programs
Madelaine Guss

Bedroom Culture
Meg Rose

Dress Codes & Gender
Chloe Woodward
Panel Presentation –

Can Theatre Create Social Change?

Kia Bailey-de Brujin, Flannery Currin, Sage HaleWolfe, Dan Hoskins, & Oliver Salustri

The Theatre Arts do more than just reflect the status quo.... The Theatre for Social Change class will share its exploration of how theatre can give voice to stories that escape mainstream attention, provoke questions, illuminate universal truths, build bridges, and promote healing conversations.

Keywords: Theatre, Community, Responsibility
Abstracts
(Listed alphabetically by last name of the first author)

Abazs, Tremayne
Social Facilitation and an Electronic Surveillance Presence
Faculty Advisor: Rachael Reavis

The purpose of the present research is to assess the effect of pervasive modern surveillance systems on task performance. Possible rationales for extending social facilitation theory to Internet monitoring are discussed, and it is theorized that social facilitation may occur with the presence of implicit electronic surveillance. For the study, participants completed easy and difficult anagrams on the Internet after being primed with either an Internet surveillance article or a control article. Statistical analyses showed no effect of Internet surveillance priming on task performance. The implications for social comparison and drive theories of social facilitation are assessed, as well as how best to further explore the concept of an implicit electronic surveillance presence.

Keywords: Surveillance, Social Facilitation, Internet

Monday at 5:30 pm in LBC 315

Abazs, Tremayne; Barber, Duncan; Barger, Matthew; Dongol, Anisha; Irvine, Hannah; Jacobson, Leila; Lichtiger, Lydia; McCullough, Abby; McGee, Truman; Rainey, Bryce; Reed, Isabel; Seifert, Anna; Smith, Caleb; Smith, Kyle; Smith, Travis; Stone, Erin; Vaughn, Sorcha
Faculty Advisor: Maggie Thomas

Assessing Interventions to Increase Sustainable Behaviors on Campus and Beyond

Most of this panel will be a re-presentation of the final project for PSYC/ENST 370, where we tested interventions designed to increase recycling in Richmond, IN. With time, groups may also discuss their on-campus projects, each of which investigate a different behavior related to sustainability.

Keywords: recycling, intervention, community-based learning

Tuesday at 5:00 pm in LBC 315 as part of the Group Panel.
Abodunrin, Ronke; Hunter, Olivia; Newby-Smith, Sierra; Nguyen, Anh Quynh; Reaves, Josh
Faculty Advisor: Elana Passman

Internationalism: The emergence and application of a 20th century ideology

This set of papers discusses Internationalism, an ideology that promotes cooperation and exchange between nations. Each paper discusses a different manifestation of Internationalism during the 20th century. Topics include Pan-Africanism, Art Deco architecture, Communist revolutions, Spanish Civil War, and intellectual exchange in East Asia.

Keywords: Internationalism, History

Tuesday at 5:00 pm in LBC 316

Abodunrin, Ronke
Pan-African ideals and the Organization of African Unity’s intervention in the 1994 Rwandan Genocide
Faculty Advisor: Elana Passman

The basis of Pan-Africanist ideology can be identified as the rejection of the notion that Africa is in fact a fragmented and divided continent, which can also be called one of the foremost foundational pillars of the Organization for African Unity. The aim of this research project is to determine the extent to which Pan-African ideals were upheld by the Organization of African Unity during the 1994 Rwandan Genocide (OAU). The paper begins with a brief examination of the history of the Pan-Africanism (as an Internationalist movement) leading up to the founding of the OAU. Following this, a close analysis of the intervention provided by the OAU during the Genocide will be put forward. This analysis will be used as a foundation for further assessment of how the 1994 Genocide shaped the OAU’s approach to Pan-Africanism. The results of the assessment will employ the findings of other scholars in order to support the claims being made. The conclusions of the paper seek to analyze the degree to which Pan-Africanism manifested in the OAU’s response to the Rwandan Genocide.

As part of the Panel Presentation - Internationalism: The emergence and application of a 20th century ideology
Anderson, Liz
The Cost of Gender
Faculty Advisor: Kelly Szott

My zine tentatively called The Cost of Gender will look at gender inequality in terms of an economic interpretation. I will be using Undoing Gender by Judith Butler, as well as Marxist feminists to illustrate how economic forces are shaped by gender and shape gender. The cost of gender will be in terms of more than what we are usually told meaning the wage gap. The greater economic consequences of how we divide labor and how we discern value.

As Part of the Panel Presentation- Exploring Gender and Culture through Zines

Anderson, Liz; Guss, Madelaine; Rose, Meg; Woodward, Chloe
Faculty Advisor: Kelly Szott

Exploring Gender and Culture through Zines
This panel consists of presentations of zines made for a course on women, gender, and sexuality. The zines explore the meaning of gender and how it is done and undone through cultural productions and economic practices. The zines critique normative categories of gender and sexuality and the naturalized relationships dominant discourses make between them. The presenters will discuss the content of their zines, as well as their process for constructing them noting how theory and praxis coincide.

Keywords: Zines, Gender, Sexuality
Wednesday at 1:00 pm in LBC 316

Bailey-de Brujin, Kia; Currin, Flannery; HaleWolfe, Sage; Hoskins, Dan; Salustri, Oliver
Faculty Advisor: Lynne Perkins Socey

Can Theatre Create Social Change?

The Theatre Arts do more than just reflect the status quo.... The Theatre for Social Change class will share its exploration of how theatre can give voice to stories that escape mainstream attention, provoke questions, illuminate universal truths, build bridges, and promote healing conversations.

The Theatre for Social Change class will share how the Theatre Arts have historically initiated and supported positive and meaningful change by offering examples of the relationship between societal and theatrical trends. They will also share what they’ve learned about social responsibility, artistic integrity and curating the audience experience as they collaborated to develop original work based on first person interviews. The exploration of Applied Theatre techniques designed to serve a specific audience will illuminate contemporary trends in how theatre practitioners seek to serve the communities in which they live and work.

Keywords: theatre, community, responsibility
Wednesday at 1:00 pm in LBC 315
Baligh, Bita
3 remarkable collaborations between 20th century composers and choreographers
Faculty Advisor: Forrest Tobey

Throughout the music and dance history there has been numerous collaborations between choreographers and composers. Throughout the 20th century however, three works and collaborations really put a spin on the evolution of both music composition and dance choreography. My research is focused on three works. One of them is Agon (1957). Agon was a modern ballet collaboration between the Russian composer Igor Stravinsky (1882-1971), and American dancer and choreographer George Balanchine (1904-1983). The Appalachian Spring (1944) is another major work of the 20th century. The score was written by American composer Aaron Copland (1900-1990) and mother of American modern dance Martha Graham. The last work in the poster presentation is Second Hand. This production is one out of many collaborations between John Cage (1912-1992) and Merce Cunningham (1919-2009). These three incredible works are the essential trunk of today's tree of modern dance. The composer and choreographer collaboration also presented unique and creative works.

Keywords: Dance History, 20th Century Music, Composer and Choreographer

Monday at 4:30 pm in Richmond Room

Barnes, Sylvia
Function of Language in Forming the Creole Identity in Rhys's Wide Sargasso Sea
Faculty Advisor: Joann Quinones

In Jean Rhys's Wide Sargasso Sea, the protagonist is Antoinette, a White Creole girl from the Caribbean. Her Creole identity and culture are exemplified via the language that she and others around her use. This article seeks to demonstrate how language functions in Wide Sargasso Sea to represent the relationship between the descendants of white European settlers and African slaves that form the Creole culture. This research adds to the critical body of works focusing on the connection between language and Creole identity in Rhys's Wide Sargasso Sea.

Keywords: Language, Creole, Identity

Tuesday at 5:00 pm in LBC 327
Bartimole, Ian
Spinoza’s Way to Freedom
Faculty Advisor: Kevin Miles

Questioning about the nature and meaning of human freedom has a lot to do with theorization and emulation of a model life aiming at fulfillment, virtue, or blessedness. Searching for freedom is attempting to find a right relation to the world. The modern philosopher Spinoza’s project in the Ethics aims at the attainment of freedom; within his text, freedom is a highly valued aim toward which he consistently directs his readers. He articulates a path to freedom, and attempts to persuade us of the usefulness of human faculties (especially knowing and acting) we develop along the way. However, the articulation of ‘attainment,’ of a 'state' of freedom might be misleading; for Spinoza, the freedom at which we aim might be said to exist beyond the limits, aims, and ends that confine the finite. Freedom involves an intimate relationship with the infinite. Real progress on the way might thus undermine the important status of limitation and finality for things of duration (like us humans) that make liberation valuable in the first place. Might it be the case that the experience of liberation is unspeakable, that Spinoza’s indication of usefulness is a device to attract the attention needed to point out his way? This paper will explore Spinoza’s way to freedom, pointing to complexities of a 'finite’ human’s estimation of the value proper to his relationship with the infinite.

Keywords: Freedom, Enlightenment, Spinoza

Tuesday at 5:00 pm in LBC 327

Bleh, Jeremy; Nixon, Emma; Simmons, Chris; Srinath, Deeksha; Wilson, Daniel
Faculty Advisor: Elizabeth Schlabach

Earlham’s Digital Humanities Intro Presentation

This panel comprises two groups. The exile group is concerned with presenting existing data, like maps, while looking for new connections. The women’s research group is interested in gathering and presenting a narrow swath of data through interviews with Earlham alums. This might cast existing data in a new light.

Keywords: exile, women, digital

Wednesday at 1:00 pm in LBC 317
Bleh, Jeremy; Wilson, Daniel
Raising Awareness of Exiled Tibetans and Cherokee
Faculty Advisor: Elizabeth Schlabach

War, religion, famine: these represent some of the most prominent factors contributing to exile. Coupled with the actions of political leaders, entire communities may become displaced from their homeland. On a smaller scale, local regimes may target individuals, initiating the need for self-exile. The severity of expulsion varies, ranging from movement within a nation to transcontinental migration. Such processes are not inherent to specific countries but represent a greater global phenomenon. In the 21st Century, various peoples remain exiled, oftentimes as the only remnants of ostracized populations. This project maps the paths of these peoples, examining their emigration and settlement post-exile. Visual accounts display a group’s geographic origin and trace numerous migratory routes following banishment. Furthermore, the project describes the motive behind the original entity or faction responsible for imposing exile. It draws connections between historical and contemporary diaspora, highlighting the comparisons within each situation. Overall, it is a map defined not by international borders or other topographical features but through the exodus of peoples fleeing an oppressive force or banished in accordance with political ideology.

Part of the Panel Presentation - Earlham's Digital Humanities Intro Presentation

Bose, Aaratrika
America behind bars: Examining the disproportionate rate of incarceration in the United States over the years
Faculty Advisor: Jennifer Seely

According to the Bureau of Justice Statistics, in the 1970s the rate of incarceration in the United States was 100 per 100,000 citizens. But, beginning in 1980s, the prison population in the United States started a pattern of unrelenting growth, lasting over a generation. Therefore, what factors resulted in this disproportionate rate of incarceration over the years is puzzling. I have analyzed three schools of thought: socio-economic perspectives, tough on crime and the prison industrial complex and based on this literature, I am arguing that tough on crime policies along with an increase in prosecutorial discretion to be the most significant factor contributing to increasing incarceration. I have selected two districts within the state of California between 1982 and 2000 to operationalize the variables. I plan to compare sentencing offered by prosecutors as well as arrest rates of drug offenders and measure the rate of incarceration in the two chosen districts before and after the implementation of tough on crime policies. If the evidences show an increasing rate of incarceration, then it would suggest the hypothesis made in this paper to be true.

Keywords: Mass Incarceration, Tough on Crime Policies, American
Monday at 4:30 in the Richmond Room
Compton, Emma
Perceptions of Emotional Expression in Men
Faculty Advisor: Rachael Reavis

The purpose of this study was to explore differences of participant gender in perceptions of emotional expression in men. Perceptions of men expressing emotions was examined through rating masculinity, social competence, emotional control, and likability. The participants were 79 undergraduate students at a small liberal arts college. There were significant differences in perceptions of masculinity, emotional control, and likability between the sadness, anger, and neutral conditions. There were no significant results for social competence, or between genders in any condition. This shows that expression of anger and sadness by men affects perception of masculinity, emotional control, and likability. This is important to understand the stereotypes and expectations people may have for men when it comes to emotional expression. This, in turn, can help to reduce the stigma around gendered responses, roles, and emotions created by the gender binary.

Keywords: Perceptions, Emotional Expression, Men

Monday at 5:30 pm in LBC 315

Crowson, George
Scholastic: A Friendly yet Powerful Programming Language
Faculty Advisor: Xunfei Jiang

I’m developing my own programming language, named Scholastic, in an effort to develop my skills as a programmer and software engineer. That’s involved a substantial amount of my own time and effort. Scholastic is intended to be fully-featured, to improve the lives of programmers, and to maintain the incredible performance of C. Scholastic is implemented in Python and compiles down to C. Making a programming language involves 1) defining the syntax and semantics of the language and 2) creating a program that can interpret the meaning of programs written in that language. Programming languages are big, complicated things but I’d like to attempt to bring this very niche field to a wider audience. Additionally, the weaknesses of programming languages and related tools make it harder for programmers to create and architect software. This is a big deal because software is the #1 restricting factor on the usefulness of technology. I have a lot of ideas as to how I can improve upon these weaknesses and am hoping to share some of those ideas.

Keywords: Programming languages, Object oriented, Error reporting

Monday at 4:30 pm in Richmond Room
Crowson, George  
Musical Juggling Balls  
Faculty Advisor: Forrest Tobey

I’m creating music juggling balls in Computer Music Research with Forrest Tobey. I’ve been developing this project for the past year on my own time. In short this project involves assembling a battery-powered microcontroller with accelerometer/gyroscope/bluetooth sensors, creating a high-quality and performance-friendly ball, writing software to generate and gather data from the balls, and writing software that interprets that data using a gestural interface to create and control live music with popular music programs like Max MSP and Ableton Live. I’m excited to play with these musical balls, and to perform with them on stage, but more broadly I believe this product to be commercially viable. I’m very excited about the prospects of this project and I find the work intensely satisfying as it’s merging many of my interests (CS, Music, Juggling) during my last semester at Earlham.

Keywords: electronics, juggling balls, virtual instruments  
Monday at 4:30 pm in Richmond Room

Dai, Andrew  
Modeling the Sound Pattern of Standard Chinese  
Faculty Advisor: Jim Rogers

We are developing formal computational models of the sound pattern of Standard Chinese (SC). In English, as in other stressed languages, the sound pattern of words can be thought of as a kind of rhythm: words are broken into syllables, some of which get more emphasis than the others. In "SYL-la-ble" primary stress falls properly on the first syllable; "syl-LA-ble", on the other hand, sounds funny. Previously, our group has developed computational models for a library of stress patterns that includes most of the world’s stressed languages. SC, in contrast, is a tonal language: the sound pattern can be thought of as a melody with syllables pronounced with varying pitch. In SC, it is not immediately obvious that there is even a clear distinction between syllables and words, let alone distinctions in stress between syllables. In Phonology of Standard Chinese, San Duanmu argues that SC does, in fact, exhibit syllabic stress and that the stress pattern provides a clear distinction between words and syllables and explains, in part, the distribution of tones. Thus, an account of the sound pattern of SC requires an account of both stress and tone. We are currently developing a formal model of stress in SC based on Duanmu’s phonology which will provide a framework on which we can build a formal model of tone as well.

Keywords: Sound Patterns, Computational Models, Standard Chinese  
Monday at 4:30 pm in Richmond Room
**Derrickson, Raven**  
*It Don’t Matter if You’re Black or White*  
**Faculty Advisor Rachael Reavis**

The perceptions on racial progress, white privilege, and transracialism were studied using various questionnaires. When presented with the transracial condition out of two other conditions, Earlham participants saw that there was less need for racial progress and saw that there was little to no white privilege involved. In contrast, outside participants saw no difference in racial progress and white privilege when presented with the three random conditions. These findings show that when acting in transracialism, it is seen as harmless and helpful when it is done for an effective cause.

*Keywords: Transracialism*

**Monday at 4:30 pm in Richmond Room**

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**Dinh, Nhi**  
*The Immediate Effects of Yoga on Cognitive Performance and Stress Level*  
**Faculty Advisor: Beth Mechlin**

College students frequently have to cope with stress while still maintaining good cognitive performance. Yoga is a physical activity with a meditative component, focusing on one’s breath and body flow; it is a mind-body training program with long-term effects on relieving stress and improving cognitive capacity. This study investigated the immediate effects of doing yoga during a short break on stress and cognitive performance. All participants took the GRE Quantitative Comparison Test (cognitive measurement) while their blood pressure was measured (stress measurement), followed by a 10-minute break. The experimental group practiced yoga following an instructional video while the control group did not do any structured activities. The hypotheses were that after practicing yoga, participants would perform better in the second GRE Quantitative Comparison Test and experience a healthy decrease in blood pressure, while passive leisure activities would neither affect test performance nor stress level. The results showed that while yoga did not have a stress relieving effect, it did moderately improve cognitive performance. This study aims to contribute to a growing scientific literature on the acute impacts of regular exercise on cognitive vitality, and to influence people to have healthier lifestyle.

*Keywords: Yoga, Stress, Cognitive performance*

**Wednesday at 1:00 pm in LBC 315**
Fomukong, Abou-Nica; Gerencer, Kathleen; Wells, Jolene

Sex Differences in Cardiovascular Reactivity to Physical appearance and Performance Challenges

Faculty Advisor: Beth Mechlin

This research project is a replicate study pertaining to sex differences in cardiovascular reactivity. The participants will be exposed to several mental and physical stressors such as a physical appearance challenge, a serial subtraction task, and an isometric grip task. While the participants complete the tasks, measurements such as heart rate, blood pressure and mean arterial pressure will be taken. In addition to determining differences in cardiovascular reactivity, the speech and performance tasks will be assigned to determine future success and competitiveness respectively. Based on the findings of previous research, the main hypothesis for this study is that female participants will demonstrate a higher cardiovascular reactivity in respect to the novel body image tasks, for example, “What you like and dislike about your body and physical appearance?” However, men will demonstrate a higher cardiovascular reactivity in regards to the performance based challenges (serial subtraction, handgrip).

Keywords: Cardiovascular, Reactivity, Gender

Monday at 5:30 pm in LBC 315

Garcia, Yelitza; Sontag, Nicholas; Honigman, Olivia; Ball, Andrea

Biodiversity in the Bicentennial Legacy Conservation Area: Gathering baseline data in partnership with landowners

Faculty Advisor: Karen Mager

To celebrate Indiana’s 200th anniversary in 2016, Former Governor Mitch Daniels announced the Bicentennial Nature Trust to preserve and protect new recreation and conservation areas throughout Indiana. In cooperation with The Nature Conservancy, Whitewater Valley Land Trusts, and the Indiana Defense of Natural Resources, Cope Environmental Center will be establishing a children’s park in a newly acquired plot of land attained with a conservation easement. In this project, we hope to observe the difference in mammalian diversity throughout the land’s upland and lowland habitats and provide a basis of comparison for future studies. Data will be collected through observed species in field/live mammal trapping, camera trapping and ink tracking as well as by interviewing landowners and Cope Environmental Center workers.

Keywords: conservation biology, spatial ecology, environmental land use

Monday at 4:30 pm in the Richmond Room
Grimes, Jordyn
The Effects of Goal Setting on Academic Success
Faculty Advisor: Rachael Reavis

Goal setting has many benefits in the academic and physical domains. Researchers have found that setting certain types of goals can increase intrinsic motivation and performance. Little research has been done on the effect of self-selected versus assigned goals. Participants from an undergraduate college completed the WASI-II block task and either set their own goal, were assigned a goal by the researcher, or had no goal (control). They answered questions about intrinsic motivation and effort throughout the task. Results indicated that those in the assigned group had significantly higher performance than those in the self-selected group. Intrinsic motivation and effort also increased throughout the task for all participants. This indicates that being assigned a goal could potentially challenge students to perform better in an academic context.

Keywords: goal setting, motivation, assigned goals
Monday at 4:30 pm in the Richmond Room

Guss, Madelaine
Complicating TV: Deconstructing Gender in Popular Television Programs
Faculty Advisor: Kelly Szott

Throughout this zine, I examine transgender representation within popular media through the lens of David Valentine’s Imagining Transgender, as well as Judith Butler’s Undoing Gender. Stemming from previous research inquiries, I look generally at how television configures spaces for transgender characters, while specifically examining characters within the L Word, Orange is the New Black, and Pretty Little Liars.

Part of the Panel Presentation - Exploring Gender and Culture through Zines

Guss, Madelaine; Marks, Mandisa; Oberg, Peter; Obrecht, Ava; Rabut, Ana
Moderator: JoAnn Martin

A Disney Adventure: Mary Poppins and the Remaking of Compulsory Heterosexuality
Keywords: Film, Feminism, Colonialism
Tuesday at 5:00 pm in LBC 317
Guss, Madelaine  
Disney, Mary Poppins & Feminist Politics  
Moderator: JoAnn Martin

Throughout this paper I look at how Disney detemporalizes P.L. Travers’s Mary Poppins from 1930s England and retemporalizes it for American Audiences within 1960s culture as a way of combatting the emerging women’s movement within the United States. While the film takes place during the early 20th century in Britain, I argue that Disney’s use of a “Hollywood imaginary” makes the time and place irrelevant and puts a higher premium on metaphors, imagery, and narrative structures to construct the story they want to tell. Mary Poppins as a character within the film has been read both as an “independent women” who comes and goes with the wind, as well as a character complicit in protecting the patriarchal American nuclear family. I argue that while Mary Poppins can be seen as the central character, she is actually a vehicle through which Disney expresses its anti-feminist politics of the 1960s.

Part of the Panel Presentation - A Disney Adventure: Mary Poppins and the Remaking of Compulsory Heterosexuality

Hunter, Olivia  
Crime and Nationalism in the French Concession, 1919-1937  
Faculty Advisor: Elana Passman

French colonialism in Vietnam and North Africa has been examined extensively by scholars and usually makes up most of the books on the French empire. Discussion of the French Concession in Shanghai, however, is relegated to a few sentences or, at most, several pages in monographs investigating Greater France. Despite this lack of coverage, the French-administered area in this international city is an important piece in the story of French colonialism. This project explores nationalism in the Shanghai French Concession during the Republican period. It looks at the relationship between the high rate of crime in the Concession to the highly-nationalistic administrators and their para-military police force. My research proposes a cultural explanation for why the administrators would allow crime to flourish in the French outpost, even while their Chinese and Anglo-American neighbors were critical of the moral leniency within the Concession’s borders.

Keywords: Shanghai, Republican period, French Concession

Monday at 5:30 pm in LBC 316
Hunter, Olivia
Art Deco Architecture and Internationalism in Shanghai’s French Concession
Faculty Advisor: Elana Passman

My research uses Art Deco architecture in early twentieth century Shanghai to examine the play between internationalism and nationalism in the French-administered area. Was Art Deco another way for the French to spread their influence and display their “superior culture” in the Concession, or was it a style spread by France to promote internationalism? This paper aims to discover what role Art Deco architecture played in the Concession and how this corresponded to the French mission in China and the broader goals of French Art Deco.

As Part of the Panel Presentation - Internationalism: The emergence and application of a 20th century ideology

Hwang, SaeYeoun; Klaine, Lauren; Munro, Hannah
Large Bodies: An exploration of casting and sculpting on a life-size scale.
Faculty Advisor: Mark Van Buskirk

Large Bodies is a life-scale sculptural approach to the human figure: casting and modeling the human form, learning specific technical skills, multi-part mold making and casting, and rendering the human form in three dimensions on a large scale. The body casts create a “three dimensional reference library” for subsequent drawing and painting classes to work with. Casting is a specific skill set that is sought after in the art world. Participants, and future generations, will be in a much better position to move into paying jobs in art. Working on a large scale is a rare opportunity that would further distinguish our students as they enter the next phase of their career. The work will be collaborative in that the students will research basic casting and mold-making techniques via bibliographic and interactive media followed by a hands-on workshop with a master sculptor. Students will be responsible for building the cast, mixing the plaster, segmenting the mold, and demonstrating the structural integrity of the mold and cast. The work will be evaluated by how successfully the cast is made; does it maintain its integrity? Is it a complete figure or only a partial cast?

Keywords: body-casting, mold-making, sculpture
Monday at 5:30 pm in LBC 327
Johnson, Ashley  
Behavior, Frequency and the Stereotype Content Model  
Faculty Advisor: Rachael Reavis

Do frequency and behavior type determine the stigmas elicited? This 2x2 between subjects design demonstrates the effects of moderate and addictive frequency, as well as alcohol and running behavior types upon perceptions of risk and approval, and elicited emotions through the stereotype content model. The moderate running and drinking scenarios were predicted to elicit admiration, addictive running to elicit envy, and addictive drinking to elicit contemptuous prejudice. Participants were 92 students aged 18-23, 66.3% female. Participants read one of four scenarios which indicated frequency and behavior type. Participants were then given a questionnaire regarding feelings of envy, admiration, pity, contempt, risk, and approval. Participants in the moderate condition reported less risk, more positive perception, more envy, more admiration, less pity compared to participants in the addictive conditions. Participants in the running condition reported less risk, more positive perception, more envy, more admiration, less pity, and less contempt compared to participants in the alcohol condition. There was no interaction between frequency and behavior type. Frequency and behavior type have significant impact upon prejudice elicited which carries negative implications for health care in addict populations.

Keywords: Addictions, Perception, Frequency

Wednesday at 1:00 pm in LBC 327

Karmali, Nasser; Mahdi, Mahmoud; Toninga-Gyan, Timothy  
Swearing as a Response to Pain  
Faculty Advisor: Beth Mechlin

As part of the reproducibility project, we are interested in looking at whether swearing affected pain tolerance, measured by the ability to withstand immersing the hand in cold, icy water, perception and heart rate (Stephens et al. 2009). The participants will be assigned to the condition of either repeating a swear word or a neutral word as they immerse their hand in the cold water for as long as they could, with a time limit of 5 minutes. A control group will also be present where the participants will immerse their hand in room temperature water. Their heart rate will be monitored and they will be given the following questionnaires to assess pain related traits: The Pain Catastrophizing Questionnaire, the Spielberger State-Trait Anxiety Index, the Fear of Pain Questionnaire Version 3, and the Perceived Pain Scale. We will then analyze our results and we expect to find that swearing will increase pain tolerance, increase heart rate and decrease perceived pain in comparison to the neutral word condition.

Keywords: Replicability project, Sweating, Pain

Monday at 5:30 pm in LBC 315
Kim, Jinhee
Temperature-dependent phase behavior of Pluronic F127 triblock copolymers in water
Faculty Advisor: Lori Watson

Pluronic is a triblock copolymer composed of a central hydrophobic chain of polyoxypropylene (PPO) and two terminal blocks of hydrophilic poly-oxyethylene (PEO). The amphiphilic characteristic of Pluronic F127 accounts for its ability to self-assemble in appropriate conditions of temperature and concentration. A Single-Walled Carbon Nanotube (SWNT) is a unique nanoparticle with high tensile strength, excellent thermal stability and high electrical conductivity. These properties make SWNTs appealing for nanotechnology, electronics and many other applications. Pluronic F127 demonstrates interesting self-assembly behaviors when mixed with SWNT. Over the temperature range of 20-60°C, Pluronic F127 forms a loose hair-like structure around SWNTs, whereas at higher temperatures, it forms a tight shell-like structure encapsulating the SWNT. Thus we can tune the encapsulation structure of Pluronic F127 and fabricate SWNT dispersions by controlling temperature. We found that without SWNTs, Pluronic F127 displays a micellar formation at higher temperatures. We confirmed the micellar phase by Dynamic Light Scattering (DLS) and Small Angle Neutron Scattering (SANS). These analyses provided information about the size of the spherical aggregates, which were 3-6 times larger than non-aggregates to confirm the change in phase behavior of the polymer from a unimer to micellar phase.

Keywords: Polymers, Materials
Monday at 4:30 pm in the Richmond Room

Kirsch, Mark
Hafu, Sado, Fosu, Fisu - Multicultural Japan and Modern Ethnography
Faculty Advisor: Yasumi Kuriya

The subjects of ethnography and multiculturalism are of great importance to the understanding of social divisions amongst people and of the world as a whole. However, they are not devoid of their own axioms, which must be consistently re-evaluated or risk biasing the entire fields of study they are meant to aid. Based on my own experiences in Japan and the works of various Japanese ethnographers, such as Sarane Spence Boocock, Kaori H. Okano, and Ryoko Tsuneyoshi, I conclude that the mutual exclusivity regarding ethnic boundaries common in many studies is in need of such re-evaluation. Especially in this modern world, where interracial children are being born at an unprecedented rate, we cannot allow our images of entire countries, peoples, or interactions to be rigid and homogenous, because the truth is they are anything but. Children do not simply inherit the earth, they recreate it, and our world is being recreated as we speak. We must re-evaluate the old methods of ethnographic and multicultural studies as this world is being recreated.

Keywords: Multicultural, Japan, Hafu
Monday at 5:30 pm in LBC 316
Marks, Mandisa
Mary Poppins: The Book and the Film
Moderator: JoAnn Martin

Using both the original text (P.L. Travers, 1934) and first film production (Disney, 1964) of Mary Poppins, this paper investigates the differences and commonalities between the two works. Between the written text and the dialogue in the film, language becomes an important and intentional space of change. Looking into the decisions made by Disney during the translation process, I expose the added narratives introduced by the Disney production team.

Part of the Panel Presentation - A Disney Adventure: Mary Poppins and the Remaking of Compulsory Heterosexuality

Mehdi, Khalid; Ossete, Leslie; Tark, SungHee
Faculty Advisor: Jonathan Diskin

Economics Seniors on Happiness, Migration and Development

Three Economics Seniors present senior thesis research summaries, designed to be accessible and interesting! We consider such questions as: why doesn’t increased wealth always increase happiness; what are the tradeoffs in migrating to work to another country; and will increased Chinese investment in resource rich countries deepen the ‘resource curse’ or help overcome it?

Keywords: Migration, Happiness, Development
Monday at 5:15 pm in LBC 317

Mehdi, Khalid
The Determinants of Labor Migration to Gulf Cooperation Countries
Faculty Advisor: Jonathan Diskin

Gulf Cooperation Council (Bahrain, Kuwait, Oman, Qatar and Saudi Arabia) countries are among largest receiver of migrant workers in the world. Even though, migrants have higher relative and absolute income in Gulf countries, the assimilation of migrants in Gulf economy and society is very much restricted. In these given conditions, would it be logical to say that migrant’s workers of Gulf countries face the problem of making adverse decisions due to lack of labor market information and by emphasizing more on one variable cost and benefit over another.

As part of the Panel Presentation - Economics Seniors on Happiness, Migration and Development
Murphy, Sarah; Disouqui, Fadi; Acosta; Nelson
Replication of “With Sadness Comes Accuracy; With Happiness, False Memory”
Faculty Advisor: Beth Mechlin

This study will replicate the first experiment of the study “With Sadness Comes Accuracy; With Happiness, False Memory” that tested the effect of induced emotions through music on a false memory task. Mood will be tested between subjects: positive, negative, and neutral. The same music used in the original study will be used for the replication study. The memory recall test will involve a set of 36 lists of words, comprised of 15 words each. Due to a limited time frame, the participant pool will be decreased to 30 undergraduates compared to 100 from the original study. The dependent measures will also be replicated and include: veridical recall, recall of non-presented lures, and mean recall of errors. Individuals in the negative mood are expected to perform better on the false memory task than individuals in the positive or neutral mood.

Keywords: False memory, Mood, Veridical recall

Wednesday at 1:00 pm in LBC 327

Muterspaw, Allison; Miller, Lara; Zabawa, Mercedes; Henry, William; Goldblum, Mollie
Developing an External Website for the Earlham College Libraries
Faculty Advisor: Amy Bryant

The Library Fellows Program provides five students with the opportunity to gain experience in the library science workplace through a combination of experiential immersion, job shadowing and career discernment. Students become involved in the daily functions of a library and learn the ways in which librarians facilitate a comfortable and efficient workplace for students and faculty. Through the Fellowship this year, we have worked on a project to improve the Earlham College library website in order to make it more user-friendly as well as highlighting the resources that the libraries offer to both current and prospective students. As Kenlee Ray Fellows, we occupy a unique position that allows us to draw on student perspective as well as librarian knowledge. We informed our research using the knowledge we have gleaned throughout the semester in both practical work and scholarly research. We included the input of current stakeholders and students, research through the Oberlin Group Database, as well as the Earlham College Marketing Department.

Keywords: Kenlee Ray, Library

Monday at 4:30 pm in the Richmond Room
Newby-Smith, Sierra
British Relief, Refugees, and Propaganda in the Spanish Civil War
Faculty Advisor: Elana Passman

This paper places the Spanish Civil War in an international context by analyzing the portrayal of refugees and aid by British committees and aid organizations. The Spanish Civil War was a national conflict that in turn, became international as traditionalism, fascism, nationalism and socialism collided in a power struggle. While it was deemed a national conflict, there was participation on a variety of levels from multiple nations, organizations and individuals with an internationalist perspective. This project covers the portrayal and discussion of Spanish Civil War refugees in propaganda and media in British committees and aid organizations, as well as the work that the organizations did with the refugees themselves. Primary sources, including propaganda posters, newspaper articles and committee papers compose the majority of the research materials.

As Part of the Panel Presentation - Internationalism: The emergence and application of a 20th century ideology

Nguyen, Anh Quynh
Nitobe Inazo, Liang Qichao, Phan Chau Trinh and the Transnational Intellectual Exchanges in Asia during the late 19th and early 20th centuries
Faculty Advisor: Elana Passman

The period from the late 19th century to early 20th century witnessed crucial changes in East Asia. Meiji Japan (1868-1912) conducted innovative measures for rapid modernization and posed increasing influence on the China-centered East Asia. The paper studies Nitobe Inazo, Liang Qichao and Phan Chau Trinh - three influential thinkers in Japan, China and Vietnam- their intellectual and political discourses, the transnational exchange of ideas as well as the actual impact of these ideas on common people. This intellectual exchange challenged Western domination in the cultural arena. Indeed, these Asian thinkers did not launch a wholesale Western civilization program but attempted to harmonize Western and Eastern values and maintain the equality of Western and Eastern cultures. A study of their initiatives will reveal both the potentials and problems of the racial issue in cultural internationalism during early 20th century, the tension between nationalist and internationalist, elitist and populist discourses as well as the changes of ideas when they were adopted in different political contexts.

As Part of the Panel Presentation - Internationalism: The emergence and application of a 20th century ideology
Nixon, Emma; Simmons, Chris; Srinath, Deeksha
Earlham’s Computer Science, Math, and Physics’ Gender Gap on the Web
Faculty Advisor: Elizabeth Schlabach

For many years, the computer science, math and physics fields have had a conspicuous gender gap. This gap is reflective of an education that systemically blocks women from enjoying fruitful and enjoyable careers in these fields. It starts early, and lasts a lifetime. Wages, job opportunities, and promotions can all be gendered. Our project seeks to document and publish stories about Earlham in these male-dominated fields. We will collect information through interviews with women alumni. We intend to speak with women alumni from these fields about their experience. Our research will address: How many graduates have left their realm of science, if any? What percentage have continued in their field, and what is it like to work in a male-dominated sphere? Additionally, we will gather advice from our interviewees for current and prospective women students. We will then compare the differences and similarities in the data we gather with published data about the gender imbalance in colleges nationally. We will finalize our information into an interactive website. There is a clear need to examine the gender differences in the science world, and we intend to uncover how Earlham graduates have been affected.

Part of the Panel Presentation - Earlham’s Digital Humanities Intro Presentation

Oberg, Peter
Mary Poppins and the Colonial Adventure
Moderator: JoAnn Martin

This paper endeavors to demonstrate the multitude of symbols alluding to the collapse of the British Empire in the 1964 Disney film Mary Poppins. Additionally, I argue that Mary Poppins presents a critique of the British Empire and English high society, and constructs the United States as the modern global imperial power. My paper draws on my own research of the 1960’s, a period marked by colonial independence. Disney’s hand in turning Mary Poppins into a critique of colonialism and the British Empire/England more broadly is immediately evident. While completely absent from the original 1934 book of the same title written by P.L. Travers, the 1964 Disney film is replete with symbols of the collapse of British Empire.

Part of the Panel Presentation - A Disney Adventure: Mary Poppins and the Remaking of Compulsory Heterosexuality
Obrecht, Ava
Mary Poppins: From Witch to Fairy Godmother
Moderator: JoAnn Martin

The Walt Disney Studios has mastered the art of appropriating and domesticating folklore rooted in profound global heritages. When these stories are turned into a Disney film, folkloric magic is severed from its authentic moral complexities and contexts and is transformed into good magic, magic that can turn Cinderella’s rags into a ball gown or Mary Poppins’ medicine into sugar. Disney carefully crafts this good magic into a synonymous relationship with American exceptionalism that is then exported and consumed by the very countries that these folklores and myths descend from. I look at the way in which the 1964 Disney film Mary Poppins quite literally deports all aspects of the occult and mysticism that are present in P.L. Travers’ original written tale. Travers’ imagining of the unorthodox nanny includes scenes where Mary Poppins receives gifts from snakes under a full moon and goes holiday shopping with Maia, an ancient Greek mother goddess. In Disney’s translation of Travers’ tale, Poppins dances with penguins and cleans children’s rooms in seconds, rendering her nothing more than a happy alchemist and a perfect example of Disney equating American order with the fantastic.

As part of the Panel Presentation - A Disney Adventure: Mary Poppins and the Remaking of Compulsory Heterosexuality

Ossete, Leslie
Chinese Foreign Investment in Sub-Saharan Africa: Resource Curse Cure or Cause?
Faculty Advisor: Jonathan Diskin

Since the 1990s, Chinese Foreign Direct Investment has increased greatly in Sub-Saharan Africa, particularly, in the natural resource sector. As China generates more resource rents, there is a concern that those might worsen the resource curse in Africa which manifests itself by the misappropriation of those rents towards the unproductive private ends of the local political elites. Hence, how do the Chinese and local governments in Sub-Saharan African countries arrange to split the resource rents arising from Chinese FDI? In particular, does the past resource rent dependence and associated governance structure of African resource rich countries affect the nature of the Sino-Africa bilateral trade agreements formed?

As Part of the Panel Presentation - Economics Seniors on Happiness, Migration and Development
Penk, Gabriel; Richeimer, Rebecca; DeBruyne, Erica; Roy, Annikka; Dettman, Minda; Maestas, Antonio; Swerdlow, Jeremy

Film and Buddhist Ways of Seeing
Faculty Advisor: Michael Birkel

We seek to investigate the question of what makes a film Buddhist, whether in its message (Buddhist content) representation (Buddhist characters), or perspective (Buddhist filmmakers). The path towards enlightenment is often characterized as a “waking up” or learning to see through the illusory nature of one’s own ego and the way we view external phenomena. We suggest that there is a particular way of seeing which makes a film “Buddhist.” In our research we will survey a range of films including films not intentionally dealing with Buddhist belief or practice, in order to understand how the medium of film aids and reflects Buddhist teachings and philosophy. Through film’s capacity to produce a new way of seeing, we will discuss ideas of emptiness, interrelatedness, enlightenment, compassion, and death in relation to Buddhism and question the efficacy of film’s power to transform the viewer. In addition, we will use film to examine the representation and place of activism within a Buddhist context. Finally, we will ask of the relationship between film and the viewer and compare it to a Buddhist perspective of the self and the world of phenomena.

Keywords: Buddhism, Film Studies

Monday at 4:30 pm in the Richmond Room

Pennock, Jensen

Development of the Attitudes Toward Native Americans Scale
Faculty Advisor: Maggie Thomas

Attitudes of majority group members toward some minority groups (e.g., Blacks, gays and lesbians) are well-measured. However, measurements of majority group members’ attitudes toward other minority groups are not as well-measured. Specifically, non-Native attitudes toward Native Americans have been investigated in roundabout ways, such as beliefs about using Native Americans as mascots (Freng & Willis-Esqueda, 2011) and implicit associations with American-ness (Nosek et al., 2007). Across two studies, we begin to develop and analyze the Attitudes Toward Native Americans Scale (ATNAS). In Study 1, 350 MTurk workers answered the initial items on the ATNAS and demographic questions. In Study 2, 50 undergraduate students answered the same questions. Initial exploratory factory analysis indicates a multi-factor attitude structure. Data collection with undergraduates is ongoing. Future research will investigate correlations between attitudes toward Native Americans, using Native Americans as mascots, and other minority groups. Developing this scale fills a hole in the literature.

Keywords: Attitudes, Scale, Native Americans

Monday at 4:30 pm in the Richmond Room
Rabut, Ana  
**Masculine Dramas in Mary Poppins**  
**Moderator: JoAnn Martin**

In the original novel Mary Poppins, written by PL Travers and published in 1934, Bert plays a minor role, appearing in one chapter. However, in Disney's popular production of the story of Mary Poppins, Bert has an essential and dominant presence as a companion for Mary Poppins. I argue that together, Bert and Mary Poppins provide an alternative to the traditional compulsory heterosexuality that structures the Banks family. Disney's portrayal of the couple as the guardians of the two children, Jane and Michael, attempts to challenge the stiff confines of the British family in 1910 England. Although the image remains within the model of compulsory heterosexuality, Bert and Mary Poppins are used as an important moment for the movement towards modernization of gender roles within the family.

**As part of the Panel Presentation - A Disney Adventure: Mary Poppins and the Remaking of Compulsory Heterosexuality**

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Rai, Ashutosh; Bush, Micaela  
**Molecular Dynamic Studies of Z[WC] DNA and the B to Z-DNA Transition**  
**Faculty Advisor: Michael Lerner**

Although DNA is most commonly found in the right-handed B-DNA structure, it is known that biologically active systems also contain left-handed Z-DNA. However, little is known about the transformation from the right to left handedness. We investigate this B to ZII transition with the possibility that Z[WC]-DNA might serve as an intermediate structure. Molecular dynamics simulations indicate that Z[WC] forms stable structures with the current AMBER nucleic acid force field. We use targeted molecular dynamics in combination with umbrella sampling to produce potentials of mean force for the B to ZII transition along both pathways. Comparison with previous works done in this field have been important for us to design our simulations as well as analyze the results.

**Keywords: Exclusion; Mood**

**Monday at 4:30 pm in the Richmond Room**
Reaves, Josh
The Revolutionary Alliance of German and Russian Communists, 1914-1920
Faculty Advisor: Elana Passman

Communist internationalists of the 20th Century expressed hopes of a worldwide revolution and the emergence of a global culture, but each country's revolutionary internationalists had to face different political realities. This research paper serves two purposes – it analyzes the emergence of the Russian and German revolutionary left, and also it interrogates the relationship between the communist parties of Germany and the Russian Socialists, with special emphasis placed on the German revolutionary period of the early 20th century. Between Vladimir Lenin's and Rosa Luxemburg's various polemics, one could reasonably think that the revolutionaries of Russia and Germany were at odds. This paper explores this relationship more closely, both in material terms (i.e. the concrete overlaps and experiences that created the revolutionary parties) and in terms of political position (theoretical disagreements and agreements, and the alliances that were formed based on this).

As Part of the Panel Presentation - Internationalism: The emergence and application of a 20th century ideology

Rose, Meg
Bedroom Culture
Faculty Advisor: Kelly Szott

My zine will explore Bedroom Culture in media, specifically how the bedrooms of teenage girls become sites of doing or undoing gender in movies. I plan to use the films "Juno," "The Virgin Suicides," "Ten Things I Hate about You," and "Palo Alto" among others for my research.

Part of the Panel Presentation - Exploring Gender and Culture through Zines
Rubez, Doroteja
Attentional Control in Monolinguals and Multilinguals
Faculty Advisor: Beth Mechlin

Previous research has demonstrated the benefits of multilingualism on executive control. However, not a lot of research has examined the individual components of executive control such as attentional control. This study was conducted to investigate the effect of the color-word and auditory interference on the attentional control in monolinguals and multilinguals. Participants performed the Stroop task twice, once with audio interference and once without audio interference. The participants were then tested on their knowledge of the audio recording by taking a quiz. It was hypothesized that multilinguals would experience the Stroop effect to a smaller degree and have higher quiz scores than monolinguals. Data analysis showed that multilinguals were less prone to the Stroop effect, but no significant difference between the two groups was obtained regarding the quiz scores. The results indicate that multilinguals are better at overcoming cognitive conflict, but not necessarily better at processing under divided attention.

Keywords: Language, Learning, Attention

Tuesday at 5:00 pm in LBC 327

Sbeta, Shatha
Hence, the Chicago Boys magnify the neoliberal agenda
Faculty Advisor: Jennifer Seely

What constitutes democratic reform? Does democratization always take the same form, or are there variations? To understand these questions, I look at two cases of transition in Libya: pre-uprising, under Gaddafi’s son, Saif Gaddafi from August 2006 to February 2011; and post-uprising, dating from the declaration of independence in October 2011 to the creation of the Council of Deputies in 2014. Why did Libya see some signs of democratization under its authoritarian regime in its last few years, but ended in a civil war after an uprising aimed to establish democracy? I hypothesize that strong social fragmentation in an existing power vacuum decreases the likelihood of democratization during a period of transition. Using political liberalization as characteristic of impending democratization, I examine the ways in which the two cases differ in their presentation of political liberalization, and hence, democratization. To assess the path of democratization in the two cases, I will look at the level of political liberalization. Assessing the strength of social fragmentation through identity affiliation and identity representation, with no power vacuum in the first case with no power and in the second case with an existing power vacuum.

Keywords: Democratization, Social Fragmentation, Libya

Monday at 4:30 pm in the Richmond Room
Sherpa, Chungdhak
The Impact of Meditation on Memory Recall
Faculty Advisor: Rachael Reavis

The practice of meditation is growing increasingly popular. Many researchers have examined the long-term effects of meditation, but few have examined the effect of meditation on memory recall. The purpose of this study was to test the impact of meditation on memory recall, especially the influence of brief meditation. The study contained three conditions: experienced meditators, non-meditators and control. After studying a word list, meditators were instructed to meditate for eight minutes while the control group was asked to sit quietly for the same amount of time. After that period, participants were asked to recall the list of words. A one-way ANOVA indicated that there were no significant differences in word recall between conditions. This means that more varied research needs to be done to see the impact of medication on word recall. Future study should include measurement and questionnaire.

Keywords: Meditation, Memory, Word recall
Wednesday at 1:00 pm in LBC 327

Smith, Oliver
Exploring Spirituality and Colonialism in the Caribbean
Faculty Advisor: Joann Quinones

In search of treasures, the Europeans journey to the Caribbean deciding to be in awe of the land, rather than willing accept that the natives were in fact people with values. In both texts, dreaming in Cuban by Cristina Garcia and Wide Sargasso Sea by Jean Rhys, the authors look at the relationship between spirituality and colonialism in the Caribbean. Contrary to the belief that the Europeans had converted the islanders to Christianity and stripped them of their prior religious beliefs, both authors depict a world in which Christianity and other beliefs and spiritual practices can coexist. This paper will explore such topics as the connection between modernity, colonialism, and syncretic religious practices.

Monday at 5:30 pm in LBC 316
Sorrows, Elisabeth  
**Nicrophorus orbicollis, Nicrodus surnimensus, Nicrophorus margenatus, and Necrophilia americana carrying capacity on Nantucket Island, MA**  
Faculty Advisor: Heather Lerner

Nantucket has a high number of different carrion beetles and this study will examine the distribution and seasonality of certain species to compare them with the population shifts that have been seen in the American Burying Beetle (Nicaphorus americanus, ABB). The ABB is federally endangered and was reintroduced on Nantucket, MA, with new populations introduced each year from 1993-2006. Data from 2007-2015 shows that with continued provisioning and mate paring the ABB may now be at carrying capacity on Nantucket. Since 2007, data has been collected about the presence of the ABB and four other species of carrion beetles: Nicaphorus orbicollis, Nicrodus surnimensus, Nicrophorus margenatus, and Necrophilia americana. No research has previously been done on the four species that are the most prevalent on Nantucket. This study will focus on changes in the distribution and seasonality of each species to determine the island’s overall carrying capacity for carrion beetles and if it is changing. The results are expected to show that these four species have different seasonality’s and distributions. This will show that the species all have slightly separate niches on the island and will indicate which species are competing as well as the carrying capacity for each species.  
*Keywords: Carrion Beetle, Endangered, distribution and seasonality*

Monday at 4:30 pm in the Richmond Room

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Sorrows, Katherine  
**Paleoenvironmental Reconstruction of Bell’s Korongo East, Olduvai Gorge: Preliminary Results**  
Faculty Advisor: Cynthia Fadem

The many important paleoanthropological studies in Olduvai Gorge began with the Leakey’s work in the early 1930s. This year’s field and lab work at the Bell’s Korongo East (BKE) site adds to this research and our understanding of the paleolandscreas in which hominins lived ~1-2 million years ago. BKE is located in the south side of the side gorge, between the fourth and fifth faults. This new excavation – located nearby the Leakey’s original BK site – hosts clay and siltstones incised and filled with interbedded fluvial sands. These fluvial environments appear to be loci of hominin activity and artifact deposition. We are currently working to reconstruct local paleoenvironments and to understand what may have attracted hominins to BKE. Powder X-ray Diffraction (XRD) and other sediment and soil biophysical analyses will expand our knowledge of small-scale sedimentological and pedological dynamics in Olduvai Gorge.  
*Keywords: Geoarcheology, Human Ancestors, East Africa*

Monday at 4:30 pm in the Richmond Room
Tark, SungHee
Do People Need Social Welfare Benefits to Translate Higher Income into Happiness: The South Korean Case
Faculty Advisor: Jonathan Diskin

South Korea has achieved remarkable growth in its economy in the past few decades as one of the East Asian Tigers. However, despite the wealth of the country, South Korea ranks itself poorly in the happiness of its population compared to other countries with similar level of wealth. This essay explores how level and types of social welfare benefits relates to the happiness of its population. Specifically, it attempts to investigate the case of South Korea to understand the relationship between social benefit and happiness in wider economy.

As Part of the Panel Presentation - Economics Seniors on Happiness, Migration and Development

Thapa, Saimoon; Lamichhane, Anmol
Mathematical Model to Simulate Behaviour of Thermal Elements in Cryogenic Environment
Faculty Advisor: Kyle Zilic

We developed a mathematical model for simulating a multiple thermal reflector/emitter/transmitter environment with frequency-dependent properties. This model used a resistor network analogy to describe the flow of radiative power and potential thermal energy, with resistive parameters dependent on the reflectivities, emissivities, and transmittivities of the thermal elements in the system. The resistive network was then modeled over all relevant optical frequencies to properly quantify the thermal environment. This model was then implemented in a Python program to calculate the thermal properties of the reflectors in order to optimize the system. This program can be used to improve the cryogenic performance of cryogenic systems, especially those associated with millimeter-wave cosmological experiments.

Keywords: Thermal, CMB, Computation
Monday at 4:30 pm in the Richmond Room
Tobey, Forrest; Crowson, George; Lamichhane, Anmol; Ly, Edward; Roosa, Eamon; Rosenthal, Jeff
Motion Tracking for Live Music Performance
Faculty Advisor: Forrest Tobey

A team of five Earlham students and Professor Forrest Tobey present their research on “music motion tracking.” Building on Dr. Tobey’s original doctoral dissertation on “conducted electronics,” and grounded in decades of research in the field, they will demonstrate a system for tracking arm gestures in space and employing the data derived from these gestures in musically responsive ways. Such responses are broadly twofold: 1) emulation of a musician’s response to a conductor’s gestures and 2) the performance of musical instruments placed in imagined space and controlled by a variety of physical movements, including percussion instrument performance practice and the gestural legacy of the Theremin. The researchers are currently determining the best system for data acquisition. They are experimenting with two game controllers: the Wii-remote developed by Nintendo, and (more promising) the Kinect for Xbox One. Both provide positional data that can be employed for higher level programming. We are simultaneously exploring the possibility of creating our own hardware system using infrared LED emitters and tracking cameras. This is a very exciting project and we will plan for our poster presentation to include having the system on hand for visitors to try. Keywords: Music Motion Tracking

Monday at 4:30 pm in the Richmond Room

Urner, Tara; Claflin, Gwendolyn; Kyvelou-Kokkaliaris, Rodoula; Lerner, Michael; Tran, Hoang
Faster, More Accurate Quantification of Diffusion and Correlated Motions in Lipid Bilayers
Faculty Advisor: Michael Lerner

Lipid membranes and the dynamics within them are essential to our understanding of a wide variety of biological processes. We examine the statistical properties of an ensemble of individually diffusing molecules to address two related issues: correlated motion and diffusion. We are able to robustly quantify correlated motions within both simulated and experimental lipid bilayers. We are also able to more accurately assess the error bars associated with typical diffusion measurements, and to provide a new technique for measuring diffusion coefficients.

Monday at 4:30 pm in the Richmond Room
Woodward, Chloe  
Dress Codes & Gender  
Faculty adviser: Kelly Szott

My zine will analyze and critique social norms of gender through the framework of US high schools as a focal point for gender construction and deconstruction. Looking at dress codes and school sponsored activities, I plan to map out the subtle ways in which the education system plays a specific role in reinforcing the gender binary. Furthermore, I plan to present areas of resistance within the education system.

Part of the Panel Presentation - Exploring Gender and Culture through Zines