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Conference

2017, 28th Annual JWP Conference

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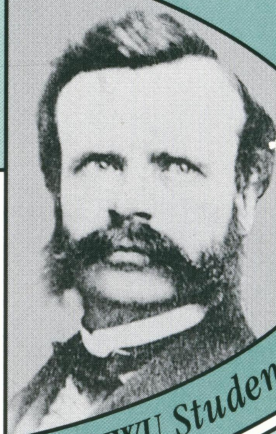
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THE TWENTY-EIGHTH ANNUAL

Illinois Wesleyan University
John Wesley Powell

2017

STUDENT
RESEARCH CONFERENCE



To Recognize the Research Projects & Creative Endeavors of IWU Students



Center for Natural Sciences
& The Ames Library

Saturday, April 8,

2017

www.iwu.edu/jwprc

The conference is named for explorer and geologist John Wesley Powell, a one-armed Civil War veteran and a founder of the National Geographic Society who joined Illinois Wesleyan University's faculty in 1865. He was the first U.S. professor to use field work to teach science. In 1867 Powell took Illinois Wesleyan students to Colorado's mountains, the first expedition of its kind in the history of American higher education. Later, Powell was the first director of the Smithsonian Institution's Bureau of Ethnology.

Twenty-Eighth Annual

John Wesley Powell • IWU

Student Research Conference

Center for Natural Sciences and Ames Library

Saturday, April 8, 2017

8:30 a.m. – 3:00 p.m.

Official Program

ACKNOWLEDGEMENTS

The John Wesley Powell Research Conference Committee would like to acknowledge the contributions of several individuals.

This conference could not have been a success without the contributions of Patricia Neustel, Associate Provost's Office, in organizing many aspects of the conference and assembling and printing the program booklet.

The invaluable assistance provided by Mike Welsh and his staff at Sodexo Campus Services in setting up breakfast, luncheon and other refreshments is gratefully acknowledged.

The assistance of Information Technology Services in setting up computer equipment in all rooms along with Michael Gorman and Trey Frank for registration and website consultation is greatly appreciated.

The Undergraduate Research Advisory Committee

Crystal Boyce, Leah Nillas, David Vayo, Marina Balina, Abigail Kerr, Daniel Roberts, Scott Sheridan, and Marcia Thomas.

WOMEN'S POWER, WOMEN'S JUSTICE

In the spirit of collaboration and mutual support, the University selected "Women's Power, Women's Justice" as a 2016-2017 intellectual theme that reflects faculty-led interest that permeates the campus community and conversations throughout the academic year. The articulation of women's power and women's justice is seen across academic disciplines, including the research presented at the John Wesley Powell Research Symposium. Much work remains to create the world we envision for ourselves and others. In the twenty-first century, women will-- with the support of fair-minded men-- step up to take on the challenges that still remain and that newly confront them and work to institute equal rights and social justice in all of their roles. The theme of "Women's Power, Women's Justice" invites us to cross, intersect, and transcend borderlands in the ways we think about others and ourselves by deconstructing notions of gender and identity.

WOMEN'S
POWER | JUSTICE

SCHEDULE OF EVENTS

Saturday, April 8, 2017

8:30 a.m.	Continental Breakfast and Poster Setup	Atrium of CNS and State Farm Hall
9:00 a.m.	<u>Poster Session A</u> Poster Presentations – Educational Studies	Atrium of CNS State Farm Hall
10:00 a.m.	<i>Oral Presentations – Session One</i> <i>Oral Presentations – Educational Studies</i>	CNS SFH
11:00 a.m.	<i>Oral Presentations – Session Two</i> Poster Presentations – Educational Studies	CNS SFH
12:00 p.m.	Luncheon Music Composition Performances Keynote Address: Susan Stryker	Young Main Lounge
2:00–3:00 p.m.	<u>Poster Session B</u>	Atrium of CNS
3:00 p.m.	Senior Art Show and Critique	Merwin and Wakeley Galleries

KEYNOTE SPEAKER

“What Transpires Now: Transgender History and the Future We Need”

Susan Stryker, Associate Professor of Gender and Women’s Studies
University of Arizona

Susan Stryker's historical scholarship, social change activism, media-making, and theoretical insights have helped shape the field of transgender and queer studies for more than a quarter century. Susan graduated magna cum laud from the University of Oklahoma in 1983 with a B.A. in Letters, and earned her Ph.D. in United States History at the University of California-Berkeley in 1992. She held a postdoctoral research fellowship in sexuality studies at Stanford University, and has been a distinguished visiting faculty member at Harvard University, Macquarie University (Sydney), Simon Fraser University (Vancouver), and the University of California-Santa Cruz. She was Associate Professor of Gender Studies at Indiana University-Bloomington 2009-2011 before joining the faculty at the University of Arizona, where she was Director of the Institute for LGBT Studies 2011-16, and currently holds an ongoing appointment as Associate Professor of Gender and Women's Studies. Susan won an Emmy Award for her documentary film *Screaming Queens: The Riot at Compton's Cafeteria*, a Lambda Literary Award for her anthology *The Transgender Studies Reader* and the Ruth Benedict Book Prize for her anthology *The Transgender Studies Reader 2*. She is also author or editor of the award-nominated books *Gay by the Bay: A History of Queer Culture in the San Francisco Bay Area*, *Queer Pulp: Perverse Passion in the Golden Age of the Paperback*, and *Transgender History*, as well as numerous influential academic journal articles such as "My Words to Victor Frankenstein Above the Village of Chamounix," "Transgender Studies: Queer Theory's Evil Twin," "Dungeon Intimacies," and "Transgender History, Disciplinarity, and Homonormativity." Susan consults regularly on media projects on transgender topics, and recently served a consulting producer on Rhys Ernst's GLAAD Media Award-winning web-based trans history documentary series *We've Been Around*. She is a founding editor of the academic journal *TSQ: Transgender Studies Quarterly*, and worked for five years, 1999-2003, as Executive Director of the GLBT Historical Society in San Francisco. In 2009 Susan won the David Kessler Award, and in 2015 the Michael Brudner Prize, for lifetime contribution to LGBT Studies.



STUDENT PARTICIPANTS

Oral and Poster Presentations

Martha Aguirre	ES	Katie McCormack	ES
Marissa Alcala	P1	Elyse McCormick	O3.1
Kristen Andersen	O6.1	Brianna Miulli	P13
Alecia Beagles	P1	Diana Moody	O6.2
Boryana Borisova	O6.3	Jake Morris	O3.2
Emily Brown	O2.2	Cody Murphy	ES
Lucy Bullock	O5.1	Victoria Nemchek	P4
Paige Buschman	O1.1	William O'Conner	O8.3
Suchana Chaulagain	P2	Colin Page	P6
Lisa Cheng	P3	Raelynn Parmely	O2.1, O5.1
Megan Cherry	Music	Mansi Patel	P10
Elaine Coppe	ES	Ngan Phan	P10
Calen Crim	ES	Brianna Piro	O4.1
Danielle DiCristofano	O1.4	Jordan Prats	O5.1
Cayla Dole	P4	Jill Rajarathnam	P10
Ximing Dong	O8.1	Bailey Reichert	P6
Ryan Donlin	Music	Morgan Reish	P9
Cassidy Elgeness	P5	Faith Richard	ES
Savannah Feher	P3	Jack Roireau	P14
Janna Fitzgerald	P6	Amy Sanchez	ES
Carly Floyd	O1.2	Hannah Scatterday	O7.1
Dominic Gambaiani	P3	Kyle Serafico	O4.3
Macie Gillis	ES	Olivia Simkins	ES
Tanya Gupta	P7, P18	Megan Smeets	O4.2
Samridh Gupta	P2	Tristan Smith	ES
Emma Haan	P4	Meg Stanley	ES
Grace Hanzelin	P8	Tie Sun	ES
Elizabeth Hart	ES	Andria Talavera	P9
Morgan Houk	ES	Cathy Tatsuguchi	ES
Troy Huber	ES	Ian Taylor	P15
Tulasi Jaladi	P9	Tori Tiberi	P3, P16
Jessica Keen	P9	Rachel Tomazin	P3
Anna Kerr-Carpenter	O5.1	Susan Tonin	O7.2
Shinho Kim	P10	Jocelyn Vanderwiel	ES
Zachary Kinney	P11	Thanh Vu	O7.3
Brooke Langley	ES	Madi Vukich	O4.1, O5.1
Zoephia Laughlin	P6	Stella Wang	O1.3
Emily Leiner	ES	Randi Wilson	P17
Megan Lemke	O2.3	Maria Wipfler	O3.3
Tony Liu	O8.2	Bryan Worby	P14
Shannon Maloney	P12	Brian Yager	ES
Caroline Marchi	P1	Wenting Zhao	O8.4
Rachel Mavros	P4	Samantha Ziomek	P1

DEPARTMENT	STUDENTS	TITLE	
ANTHROPOLOGY	Bullock	WOMEN IN POWER	Oral
	Kerr-Carpenter	WOMEN IN POWER	Oral
	Parmely	WOMEN IN POWER	Oral
	Prats	WOMEN IN POWER	Oral
	Vukich	WOMEN IN POWER	Oral
BIOLOGY	Alcala	ISOLATION, PURIFICATION, AND CHARACTERIZATION OF FOURTEEN MYCOBACTERIUM SMEGMATIS	Poster
	Beagles	ISOLATION, PURIFICATION, AND CHARACTERIZATION OF FOURTEEN MYCOBACTERIUM SMEGMATIS	Poster
	Fitzgerald	THE BIOINFORMATIC ANALYSIS OF A CLUSTER S MYCOBACTERIUM SMEGMATIS BACTERIOPHAGE TESLA	Poster
	Jaladi	GENOMIC INVESTIGATION AND ANALYSIS OF SQUINT	Poster
	Keen	GENOMIC INVESTIGATION AND ANALYSIS OF SQUINT	Poster
	Kim	EFFECTS OF THYROID HORMONE ON CORNEAL INNERVATION	Poster
	Laughlin	BIOINFORMATIC ANALYSIS OF A CLUSTER S MYCOBACTERIUM SMEGMATIS BACTERIOPHAGE TESLA	Poster
	Marchi	ISOLATION, PURIFICATION, AND CHARACTERIZATION OF FOURTEEN MYCOBACTERIUM SMEGMATIS	Poster
	Miulli	BRACHIONUS PLICATILIS ABILITY TO INGEST, DIGEST AND ASSIMILATE DISSOLVED ORGANIC MATTER	Poster
	Page	THE BIOINFORMATIC ANALYSIS OF A CLUSTER S MYCOBACTERIUM SMEGMATIS BACTERIOPHAGE TESLA	Poster
	Patel	EFFECTS OF THYROID HORMONE ON CORNEAL INNERVATION	Poster
	Pham	EFFECTS OF THYROID HORMONE ON CORNEAL INNERVATION	Poster
	Rajarithnam	EFFECTS OF THYROID HORMONE ON CORNEAL INNERVATION	Poster
	Reichert	THE BIOINFORMATIC ANALYSIS OF A CLUSTER S MYCOBACTERIUM SMEGMATIS BACTERIOPHAGE TESLA	Poster
	Reish	GENOMIC INVESTIGATION AND ANALYSIS OF SQUINT	Poster
	Talavera	GENOMIC INVESTIGATION AND ANALYSIS OF SQUINT	Poster
Ziomek	THE ISOLATION, PURIFICATION, & CHARACTERIZATION OF FOURTEEN MYCOBACTERIUM SMEGMATIS	Poster	
CHEMISTRY	Chaulagain	EFFECTS OF LEWIS ACIDS ON THE BAEYER-VILLIGER OXIDATION REACTION	Poster
	Gupta	EFFECTS OF LEWIS ACIDS ON THE BAEYER-VILLIGER OXIDATION REACTION	Poster
	Kinney	STUDIES INTO ADDITION OF GRIGNARD REAGENTS TO CONJUGATED ALDEHYDES AND KETONES	Poster
	Roireau	LEWIS ACID CATALYZED 1,4 HOSOMI-SAKURAI ADDITION	Poster
	Taylor	LEWIS ACID CATALYZED SYNTHESIS OF DIHYDROBENZOPYRANS	Poster
	Worby	LEWIS ACID CATALYZED 1,4 HOSOMI-SAKURAI ADDITION	Poster
COMPUTER SCIENCE	Zhao	2-(51, 6, 1) BLOCK DESIGNS	Oral
ECONOMICS	Elgeness	WHO IS BETTER OFF?	Poster

DEPARTMENT	STUDENTS	TITLE	
ECONOMICS	Vu	RELATIONSHIP BETWEEN EDUCATIONAL & DEMOGRAPHIC CHARACTERISTICS OF VIETNAMESE CHAIRPERSONS	Oral
EDUCATIONAL STUDIES	Aguirre	BUILDING GLOBAL CITIZENS	Poster
	Coppe	TEACHING DIVERSE LITERATURE FOR SOCIAL JUSTICE IN THE RURAL ENGLISH CLASSROOM	Oral
	Crim	FOSTERING STUDENT ACADEMIC GROWTH THROUGH THE STANDARDS BASED GRADING MODEL	Poster
	Gillis	CRITICALLY ENGAGING STUDENTS USING SOCIAL JUSTICE TOPICS IN CHILDREN'S LITERATURE	Poster
	Hart	CREATING CONNECTIONS IN A COLLABORATIVE CLASSROOM	Poster
	Houk	BREAKING THE NORM	Poster
	Huber	REPURPOSING CLASS TIME	Oral
	Langley	SCHOOL-BASED SOCIAL SKILLS INTERVENTIONS FOR AUTISTIC CHILDREN	Oral
	Leiner	READING INTERVENTION STRATEGIES FOR ELEMENTARY-AGED STUDENTS	Poster
	McCormack	ACADEMIC ACCOMMODATIONS FOR STUDENTS WITH MENTAL ILLNESSES	Poster
	Murphy	HOW CAN I USE TECHNOLOGY IN MY CLASSROOM TO IMPROVE STUDENTS' WRITING?	Poster
	Richard	STUDENT CHOICE OF MATHEMATICS STRATEGIES	Poster
	Sanchez	RESTORATIVE PRACTICES IN THE ELEMENTARY CLASSROOM	Oral
	Simkins	EXPLORING CREATIVE WRITING APPROACHES AND IMPACTS TO WRITING DEVELOPMENT	Poster
	Smith	HOW STUDENT LEARNING STYLES EFFECT ACHIEVEMENT & PARTICIPATION IN MATHEMATICS	Poster
	Stanley	DIFFERENTIATION AND ITS EFFECT ON THE DEVELOPMENT OF STUDENT STUDY SKILLS	Poster
	Sun	LEARNING EXPERIENCES OF ASIAN INTERNATIONAL UNDERGRADUATE STUDENTS IN U.S. UNIVERSITIES	Poster
	Tatsuguchi	STUDENT LEARNING: PROCESS VS. PRODUCT	Poster
	Vanderwiel	BRAIN BREAKS AND STUDENT ENGAGEMENT	Poster
	Yager	EFFECTIVE READING INTERVENTION STRATEGIES FOR ELEMENTARY STUDENTS WITH AUTISM	Poster
ENVIRONMENTAL STUDIES	McCormick	CLIMATE CHANGE	Oral
	Morris	CLIMATE CHANGE	Oral
	Wipfler	CLIMATE CHANGE	Oral
ENVIRONMENTAL STUDIES & PSYCHOLOGY	Cheng	SCRAPE YOUR PLATE	Poster
	Feher	SCRAPE YOUR PLATE	Poster
	Gambaiani	SCRAPE YOUR PLATE	Poster
	Tiberi	SCRAPE YOUR PLATE	Poster
	Tomazin	SCRAPE YOUR PLATE	Poster

DEPARTMENT	STUDENTS	TITLE		
GERMAN	Andersen	ARE YOU MY VENUS IN FUR?	Oral	
	Moody	THE INVISIBLE PROTAGONIST	Oral	
INTERNATIONAL STUDIES	Borisova	AESOPIAN LANGUAGE OF SOVIET ERA CHILDREN'S LITERATURE	Oral	
	Brown Lemke	US VS THEM AND THEM VS U.S. THE FIGHT FOR INDEPENDENCE	Oral Oral	
MATHEMATICS	Dong	PERMANENTS OF TRIDIAGONAL AND HESSENBERG MATRICES	Poster	
	Liu O'Conner	TABULATION OF STRONG PSEUDOPRIMES EXPLORING MULTIGRAPH PAIRS OF IK_n	Oral Oral	
MUSIC	Cherry Donlin	FOR COLLIN ADMONITION	Music Music	
NURSING	Scatterday Serafico	CRIME AND PUNISHMENT NURSES' KNOWLEDGE OF ALCOHOL-INTERACTIVE MEDICATIONS	Oral Oral	
	Tonin	RICE SELF SUFFICIENCY AND FOOD SECURITY IN THE PHILIPPINES	Oral	
PSYCHOLOGY	Dole Gupta	POST-STROKE BEHAVIORAL DEFICITS IN MICE EFFECT OF AFFECTIVE STATE ON NEURAL AND BEHAVIORAL INDICES OF SOCIAL EXCLUSION	Poster Poster	
	Haan Hanzelin Maloney	POST-STROKE BEHAVIORAL DEFICITS IN MICE PREDICTING AGGRESSION A NEW REHABILITATION METHOD FOR STROKE REHABILITATION	Poster Poster Poster	
	Mavros Nemchek Piro	POST-STROKE BEHAVIORAL DEFICITS IN MICE POST-STROKE BEHAVIORAL DEFICITS IN MICE UNDERSTANDING THE INFLUENCE OF SOCIAL ROLE FULFILLMENT OPPORTUNITIES	Poster Poster Oral	
	Smeets	THE INFLUENCE OF CAMERA ANGLE ON PERCEPTIONS OF CONFESSIONS	Oral	
	Tiberi Wilson	ZEBRAFISH LOCOMOTION FREQUENCY EFFECTS ON BEHAVIORAL ANALYSIS UPON SPINAL CORD STIMULATION	Poster Poster	
	SOCIOLOGY	Buschman Floyd Wang	THE COLLEGE CAMPUS SEXUAL ASSAULT PROBLEM MOTHER GODDESSES AND SUBVERSIVE WITCHES STUDENT ATTITUDES TOWARD HOUSEWORK	Oral Oral Oral
		Di Cristofano	THE EFFECTS OF SOCIAL MEDIA ON BODY IMAGE	Oral
Parmely Vukich		FOOD ACQUISITION AND HEALTHCARE OPTIONS FOR INDIVIDUALS WITH FOOD ALLERGIES HIV-RELATED PUBLIC HEALTH INITIATIVE BEST PRACTICES IN SELECT INTERNATIONAL CITIES	Oral Oral	

**BA/BFA SENIOR EXHIBITION PRESENTATIONS
SCHOOL OF ART**

Saturday, April 8, 2017, 3:00 p.m., Merwin and Wakeley Galleries

Student Presenters:

Naijun Qu

Kaining Li

Lucero Sanchez

Refreshments will be served

MUSIC COMPOSITION STUDENT PRESENTATION

Saturday, April 8

**Young Main Lounge, Memorial Student Center
(as part of the conference luncheon program)**

from Songs for Celia
Admonition

Ryan Donlin '17 (poem: Sylvia Plath)

Celia Williams, soprano
Ryan Donlin, piano

For Collin

Megan Cherry '17

Megan Cherry, violin
Collin Halihan, trumpet

Music Presentation

ADMONITION

Ryan Donlin and David Vayo*
School of Music, Illinois Wesleyan University

My partner, soprano Celia Williams, is a woman who would like to one day be in a musical leadership position. Partly due to her burning awareness of the disproportionate representation of men over women in many artistic fields, I set about finding texts by well-known female writers with which I connected. I found three which took my breath away, and became the texts for my three-song cycle, Songs for Celia. I love Sylvia Plath's "Admonition," the setting of which Celia and I will be performing today, for its balance between beauty and callous destruction. I love Anne Sexton's "Fury of Cooks" for its surreal, gut-wrenching encapsulation of loneliness and naivety. Finally, I love Emily Brontë's "Riches I Hold in Light Esteem" for its free-spirited exuberance and force of will. I hope that in being exposed to settings of such wonderful poetry, audiences will consider the importance of the experiences and perspectives of women.

Music Presentation

FOR COLLIN

Megan Cherry and David Vayo*
School of Music, Illinois Wesleyan University

For Collin is a duet for trumpet and violin which was written for my fiancé after he expressed interest in playing a piece of music together. I was intrigued by the idea, and thought it would be interesting to write for two instruments that are, at first glance, different from each other. Instead of focusing on the instruments' differences, I wanted to explore their similarities, such as note range. In For Collin, the two musical lines interact and weave in and out playfully, highlighting the instruments' similarities. In addition, the piece moves between different scales and modes. As I looked through the repertoire, I found that there aren't many pieces written specifically for trumpet and violin. Many pieces are duets for two violins or violin and flute, where one part has been adapted for trumpet. I'm pleased to add a piece to the repertoire for these two instruments.

Oral Presentations 10:00-11:00 Sessions

Oral Presentations – Session 1

10:00-11:00

Center for Natural Sciences (E101)

Sociology

Moderator: Breanna Williams

- 1.1 Paige Buschman
- 1.2 Carly Floyd
- 1.3 Stella Wang
- 1.4 Danielle Di Cristofano

Oral Presentations – Session 2

10:00-11:00

Center for Natural Sciences (E102)

International Studies & Sociology

Moderator:

- 2.1 Raelynn Parmely
- 2.2 Emily Brown
- 2.3 Megan Lemke

Oral Presentations – Session 3

10:00-11:00

Center for Natural Sciences (E103)

Environmental Studies

Moderator:

- 3.1 Elyse McCormick
- 3.2 Jake Morris
- 3.3 Maria Wipler

Oral Presentations – Session 4

10:00-11:00

Center for Natural Sciences (E104)

Nursing, Psychology & Sociology

Moderator: Ashley Sons & Tanya Gupta

- 4.1 Madi Vukich
- 4.2 Brianna Piro
- 4.3 Megan Smeets
- 4.4 Kyle Serafico

Oral Presentations 11:00-12:00 Sessions

Oral Presentations – Session 5

11:00-12:00

Center for Natural Sciences (E101)

Anthropology

Moderator: Cayley Rydzinski

- 5.1 Lucy Bullock, Anna Kerr-Carpenter, Raelynn Parmely, Jordan Prats, and Madi Vukich

Oral Presentations – Session 6

11:00-12:00

Center for Natural Sciences (E102)

Languages & Literature

Moderator: Abby Kauerauf

- 6.1 Kristen Andersen
- 6.2 Diana Moody
- 6.3 Boryana Brisova

Oral Presentations – Session 7

11:00-12:00

Center for Natural Sciences (E103)

Political Science & Economics

Moderator: Megan Zsorey

7.1 Hannah Scatterday

7.2 Susan Tonin

7.3 Thanh Vu

Oral Presentations – Session 8

11:00-12:00

Center for Natural Sciences (E104)

Mathematics & Computer Science

Moderator: Stephanie Day

8.1 Tony Liu

8.2 William O'Conner

8.3 Wenting Zhao

Presentations are 12-15 minutes in length. If time permits, there will be a question-and-answer period for all presenters following the final presentation.

Oral Presentation O1.1

**THE COLLEGE CAMPUS SEXUAL ASSAULT PROBLEM:
A GENDER SOCIALIZATION ANALYSIS**

Paige Buschman and Meghan Burke*
Sociology Department, Illinois Wesleyan University

This study seeks to delve more deeply into the connection between gender socialization and sexual assault with a particular focus on the generally overlooked experience of men. Through analysis of survey data from students at Illinois Wesleyan University and a series of small focus with men there, this study explores how sexual assault is normalized in our culture. When analyzed, this data allows us to better understand how men on college campuses think about their social location and how they learn about issues of privilege, power, violence, and masculinity. It also helps us to better consider the ways that men are constrained by masculinity and the consequences of masculinity policing (Connell 2005). These constraints, institutional shortcomings, and popular misunderstandings of why rape occurs has serious effects on the lives of victims and the culture of a campus. This research concludes by exploring possible solutions to changing campus socialization tactics and climate in order to reduce instances of assault and better support survivors.

Oral Presentation O1.2

**MOTHER GODDESSES AND SUBVERSIVE WITCHES:
COMPETING NARRATIVES OF GENDER ESSENTIALISM,
HETERONORMATIVITY, AND QUEERNESS IN WICCAN
RITUAL AND THEOLOGY**

Carly Floyd and Meghan Burke*

Sociology and Anthropology Department, Illinois Wesleyan University

Wicca is typically recognized as a feminist and queer-friendly religion embraced by many women and LGBTQ+ people. While women are undoubtedly emphasized positively, however, I argue that much of the focus is in fact a form of benevolent sexism, coming out of an essentialist understanding of women's nature being nurturing, intuitive, and emotional. The resulting heteronormativity and its procreative focus can create an exclusionary environment for gay men and women as well as for transgender and genderfluid or non-binary individuals. My research utilizes ethnographic participant-observation of a local Wiccan coven and semi-structured qualitative interviews with Wiccans and Pagans from across the United States and England in order to explore the consequences and limitations of emphasizing Wicca as a fertility religion, where women's power is theoretically restricted to their potential for motherhood. In doing so, I am able to gauge Wiccan practitioners' attitudes related to gender and sexuality and explore the ways in which Wiccans are modifying their practices in order to be more inclusive.

Oral Presentation O1.3

STUDENT ATTITUDES TOWARD HOUSEWORK

Xingchen Wang and Meghan Burke*
Sociology Department, Illinois Wesleyan University

This study explores how race and ethnicity, social class, college education, and cultural backgrounds all have different levels of influence over the formation of attitudes and behaviors around housework. Utilizing approximately 250 survey responses from the Illinois Wesleyan University student body, and supplementing with in-depth interviews, I find that most students have an egalitarian perspective toward housework, although there is a persistent gendered division in the households where they were raised. Student attitudes toward housework reflect student perceptions of gendered work, and provide a basis to study the socialization process for these perceptions. Further, the division of labor and gender ideologies from parents affects children's development and their own perceptions on gendered housework later in their lives. The implications of these findings for changing gender and work norms will also be discussed.

Oral Presentation O1.4

THE EFFECTS OF SOCIAL MEDIA ON BODY IMAGE

Danielle Di Cristofano and Meghan Burke*

Sociology and Anthropology Department, Illinois Wesleyan University

Body dissatisfaction comes from three main influences: family, peers, and the media. Today, social media platforms such as Facebook and Instagram are the most common sources people use to post photos of themselves and view photos of others. These same sites allow people to alter their photos in whichever way they like, often conforming to gendered body ideals. In this study, I utilized a survey sent out to students at Illinois Wesleyan University that tested their level of body dissatisfaction and their use of social media. I use social comparison theory to investigate how the accessibility of social media, instilled gender ideals, and other factors may work to impact people's body image, and offer implications based on my findings.

Oral Presentation O2.1

**FOOD ACQUISITION AND HEALTHCARE OPTIONS FOR
INDIVIDUALS WITH FOOD ALLERGIES IN
MCLEAN COUNTY, ILLINOIS**

Raelynn Parmely and Rebecca Gearhart Mafazy*
Sociology and Anthropology Department, Illinois Wesleyan University

Current research suggests that as many as 4% of all adults and 8% of children in the United States have been diagnosed with a food allergy or intolerance. Due to the the ambiguous nature of many food intolerances and food allergies and the high cost of medical diagnosis, many remain undiagnosed. Many individuals across the United States can not afford the additional cost of seeing an allergist, if there is one in their community. The amount of allergen-free food options at grocery stores is not regulated and less than five allergen-free food pantries exist in the country. These factors speak to how underserved people with food intolerances are in many communities. For this study I surveyed healthcare clinics, food pantries and food banks, and grocery stores in McLean County to determine whether or not they supplied specialized healthcare or food to individuals with food intolerances.

Oral Presentation O2.2

**US VS THEM AND THEM VS U.S. :
A COMPARATIVE ANALYSIS OF RECRUITMENT STRATEGIES
OF THE ISLAMIC STATE AND THE ALT-RIGHT**

Emily Brown and William Munro*
International Studies Program, Illinois Wesleyan University

This project compares the strategies to gain support employed by both the Islamic State and American populist alt-right movement. The Islamic State had recruited around 30,000 people by December 2015 due, in part, to their robust social media and online presence abroad. Meanwhile, in the United States, Muslims have experienced an abnormally high - and increasing - number of violent incidents since 2001 that target people rather than property according to FBI Hate Crime statistics. This rise in anti-Islam violence may be explained by a rise in the alt-right. A comparative analysis of the recruitment strategies of the Islamic State and the alt-right show that they both reflect violent extremist tendencies. In both cases, the use of social media and the internet creates conceptions of an exclusive community and normalizes violence against an obstinate other.

Oral Presentation O2.3

**THE FIGHT FOR INDEPENDENCE:
CATALAN POLITICAL INSTITUTIONS AND THEIR AFFECT ON
CATALUNYA'S MOVEMENT FOR INDEPENDENCE**

Megan Lemke and William Munro*
International Studies Program, Illinois Wesleyan University

The movement for independence within Catalunya has been gaining notice in the last 16 years. Yet, the movement towards independence has not progressed as much as expected. From the transition to democracy after General Francisco Franco died and his 35-year dictatorship came to an end, Catalunya quickly became a multiparty government. With multiple political beliefs spreading across the region, the movement for independence is inhibited since each political party has its own plan for Catalunya's political future. The division of political parties in combination with the Spanish government, who strongly opposes the idea of an independent Catalunya, has deterred Catalunya from making any progress towards independence in recent years, even after the multiple referenda that have been held around the region. Through comparison of party platforms this research analyzes how the political parties in Catalunya cannot agree on how to move forward to gain independence, even though a majority of the community would like to achieve independence. It also shows how the Spanish government has utilized their power to interfere with the movement's progress.

Oral Presentation O3.1, O3.2, O3.3

**CLIMATE CHANGE: INTERNATIONAL POLICIES AND
THEIR EFFECTIVENESS**

Elyse McCormick, Jake Morris, Maria Wipfler and Abigail Jahiel*
Environmental Studies Program, Illinois Wesleyan University

Climate change poses an immediate and widespread threat to life on Earth, due to its impacts on global habitats. Through different global political regimes, policymakers and scientists alike have tried to mitigate the environmental effects of climate change, striving for international cooperation. This panel will discuss current international agreements related to climate change and their effectiveness in protecting ecosystems and communities. The first paper will discuss the United Nations Framework Convention on Climate Change in relation to ocean acidification. The second paper will look at climate change in the Amazon rainforest and REDD+, an international regime to prevent deforestation. Finally, the third paper will discuss Arctic habitat change and indigenous rights as addressed through various multilateral agreements.

Oral Presentation O4.1

**HIV-RELATED PUBLIC HEALTH INITIATIVE BEST PRACTICES
IN SELECT INTERNATIONAL CITIES**

Madisen Vukich and James Sikora*

Sociology and Anthropology Department, Illinois Wesleyan University

HIV continues to be a major health burden across the globe, despite a growing number of public health programs meant to combat the disease. This study utilizes open-ended interviews with staff and administrators from public health programs and hospitals in Hanoi, Vietnam; Johannesburg, South Africa; Buenos Aires, Argentina; and cities throughout central Illinois in order to examine best practices of HIV-related public health initiatives. Health care workers described the general health profile of their local areas, as well as specific ways in which their organization addresses HIV/AIDS prevention and treatment. They also aim to expand an awareness of the population's status through testing, and educate on how HIV can be a manageable disease when medically treated. In all cases, stigma against the disease is the main limiting factor preventing people from accessing care and information about HIV, and so identifying best practices to help patients navigate this stigma can provide guidelines for a higher efficiency of care.

Oral Presentation O4.2

**UNDERSTANDING THE INFLUENCE OF SOCIAL ROLE
FULFILLMENT OPPORTUNITIES ON QUALITY OF LIFE FOR
INDIVIDUALS WITH DEVELOPMENTAL DISABILITIES**

Brianna Piro and Marie Nebel-Schwalm*
Psychology Department, Illinois Wesleyan University

The present study investigated the influence of social role opportunities on quality of life for individuals with developmental disabilities (DD). Literature suggests that without proper social inclusion, or the opportunity to participate in one's community, one's quality of life will not reach its highest potential (Reinders & Schalock, 2014). Individuals with DD are at a disadvantage because they lack appropriate social networks needed to obtain role opportunities. While the average network size of people without DD is 150 (Condeluci, et al., 2004), people with DD have an average of 22 people in their network (Forrester-Jones, et al., 2006). With so few people within their social network, access to social role opportunities is scarce for this population. The present study analyzed the effects of newly created social role opportunities on the quality of life for a small group of individuals with DD. Pre-test/post-test interviews were administered and a 6 week intervention was implemented with participants of a local social group in order to assess quality of life.

Oral Presentation O4.3

THE INFLUENCE OF CAMERA ANGLE ON PERCEPTIONS OF CONFESSIONS

Megan Smeets and Amanda Vicary*
Psychology Department, Illinois Wesleyan University

Of the 157 people who have been released off of death row, 28% of them confessed to their crime. There are numerous reasons why people may confess to a crime they did not commit, but often it is up to a jury to determine if the confession is false or authentic. One tool jurors may use to help make this determination is a video tape of the interrogation; however, recent research has found that the camera angle used in the video recording may elicit different judgments of the voluntariness of the confession. Specifically, previous research using simulated interrogations demonstrated that a confession with a suspect-focused video was perceived as more voluntary, while an interrogator-focused video was perceived as more coerced. The current study seeks to expand this idea by using an actual interrogation video (as opposed to a simulated interrogation conducted by actors) that has been edited to show either the suspect and the interrogator at the same time, just the suspect, or just the interrogator. Results will provide insight into whether the angle of the recording can influence jurors' judgments of the validity of a confession.

Oral Presentation O4.4

NURSES' KNOWLEDGE OF ALCOHOL-INTERACTIVE MEDICATIONS

Kyle Serafico and Carolyn Jarvis*
School of Nursing, Illinois Wesleyan University

Nearly 57% of adult Americans report drinking alcohol in the past month, and 41.5% of current drinkers take alcohol-interactive (AI) medications. Concurrent consumption of both substances can result in adverse interactions. Nurses are in a position to screen and appropriately teach patients. However, little is known about nurses' knowledge of AI medications. The purpose of this study is to determine nurses' knowledge of AI medications and factors that may affect knowledge level. The Jarvis Nursing Knowledge of Alcohol-Interactive Medications was developed and distributed to nurses employed by a large Midwestern health system. Nurses (n = 211) demonstrated lack of AI knowledge by correctly identifying AI medications only 56.3% of the time. Work environment, years of nursing practice, and educational level did not have a significant influence in AI knowledge. The authors conclude that AI medications should be emphasized in nursing curricula so nurses can exercise more vigilance in nurse-patient interactions.

Oral Presentation O5.1

**WOMEN IN POWER: VISUAL ETHNOGRAPHIES OF WOMEN
LEADERS IN BLOOMINGTON-NORMAL**

Lucy Bullock, Anna Kerr-Carpenter, Raelynn Parmely, Jordan Prats, Madi Vukich
and Rebecca Gearhart Mafazy*

Sociology and Anthropology Department, Illinois Wesleyan University

This session will feature 5-minute ethnographic films focused on the experiences of women leaders in the Bloomington-Normal community. The films feature excerpts of interviews and images that serve as visual metaphors of important aspects of the lives of the women under study, which the student ethnographers produced in collaboration with the women. Screening of the films will be followed by reflections by the student filmmakers, who will lead open discussion. Filmmakers include senior anthropology majors: Lucy Bullock, whose film features Jan Lancaster (LGBTQ+ community leader), Anna Kerr-Carpenter, whose film features Rabbi Rebecca Dubowe, MA (multi-faith leader), Raelynn Parmely, whose film features Mary Campbell, MSW (founder, Labyrinth House for Women), Jordan Prats, whose film features Judith Valente, MFA (journalist, WGLT), and Madisen Vukich, whose film features Barbara Nathan, RN (CEO, Westminster Village).

WOMEN'S
POWER | JUSTICE

Oral Presentation O6.1

**ARE YOU MY VENUS IN FUR?
MASOCHISM IN GERMAN LITERATURE AND FILM
THROUGH A DELEUZIAN LENS**

Kristen Andersen and Adam Woodis*

German, Russian and Asian Languages Department, Illinois Wesleyan University

In my project, I provide a contextual definition of masochism by analyzing Leopold von Sacher-Masoch's *Venus in Fur* (1870) using a theoretical framework proposed by Gilles Deleuze. I then apply this working definition to the portrayals of masochism in Frank Wedekind's plays *The Awakening of Spring* (1891), *Earth Spirit* (1895), and *Pandora's Box* (1902) in order to compare these with the contemporary films *The Piano Teacher* (2001) and *Nymphomaniac* (2013). While Deleuzian theory provides a lens for looking at masochism in terms of power, partnership, and sexuality, I also investigate gender performance and the heteronormative gender roles involved in masochism by considering the work of Judith Butler and queer theory. Close analysis of the way masochism functions in each work reveals key connections and similarities between the early plays and the more modern films. In each instance, the intentions behind the inclusion of the characters taking part in masochistic acts become evident, which serves to establish the connection between the literature and the films. Parallels between characters featured over a century apart are distinctly resonant despite the significant passage of time.

Oral Presentation O6.2

**THE INVISIBLE PROTAGONIST: A REASSESSMENT OF
BRECHT'S
*THE GOOD PERSON OF SZECHWAN***

Diana Moody and Adam Woodis*

German, Russian and Asian Languages Department, Illinois Wesleyan University

Often, we as readers are presented with a cast of characters, each of which is assigned a role in the text: protagonist, antagonist, mentor, tempter, etc. In many instances, these assigned roles are explicit; but occasionally, the lines between these roles become blurred. Such an occasion arises with Bertolt Brecht's play *The Good Person of Szechwan* (1943), where scholarship takes for granted that the character to whom the title refers is a prostitute turned businesswoman named Shen Te. I make the claim in my paper that the person to whom the title refers is not Shen Te, but instead Wang the waterseller. Though often relegated in scholarship to the status of supporting character, I argue that it is Wang rather than Shen Te that is the driver of the central ethical question of the play. I apply Brecht's own theater theory to a close reading of the play in order to illuminate Wang's standing as one of the play's most important figures and give him credit as the indispensable character that he is.

Oral Presentation O6.3

**AESOPIAN LANGUAGE OF SOVIET ERA CHILDREN'S
LITERATURE: TRANSLATION, ADAPTATION, AND ANIMATION
OF WESTERN CLASSICS**

Boryana Borisova and Marina Balina*
International Studies Program, Illinois Wesleyan University

Soviet writers frequently used social critique encapsulated in the form of children's stories since the beginnings of Soviet children's literature in 1918. *Translation* became one outlet for Soviet authors, who for political reasons were pushed to the outskirts of the Soviet literary scene. Russian children's authors adopted a special form of *retelling* the stories by retaining the plot line, but by tweaking the characters and original settings to make them more recognizable by the Russian readers. This art of retelling and resettling of western characters onto Soviet surroundings created a space for social critique that was distinguishable to a skillful adult reader. The story that enjoyed the most popularity was Boris Zakhoder's adaptation of A.A. Milne's *Winnie-the-Pooh* (1960). The central inquiries for my project will focus on how foreign classics were adapted and how they were converted into voice of freedom, democracy, and creative imagination through different media (*animation*).

Oral Presentation O7.1

**CRIME AND PUNISHMENT: THE CULTURE OF
THE ILLINOIS CRIMINAL JUSTICE SYSTEM**

Hannah Scatterday and William Munro*
Political Science Department, Illinois Wesleyan University

In the United States, criminal justice has been the subject of immense controversy and close examination throughout contemporary history. Several, like Michelle Alexander and James Kilgore have explored the intersections of race, class, and injustice in the legal system. This paper, however, aims to take a step back from federal, identity-focused analyses, and evaluate the criminal justice system with a broader lense on a smaller scale. The concept of a “culture of punishment” describes the legal system as a set of institutions and norms that are systematically excessive and arbitrary. Through the theoretical framework of historical institutionalism, I examine the formal rules, compliance procedures, and standard operating practices that constitute the culture of punishment in Illinois, and how it functions in practice. In conclusion, I further describe some of the literature’s explanations as to why the culture of punishment exists, and how it relates to the ideas illustrated by Alexander, Kilgore, and others.

Oral Presentation O7.2

**RICE SELF SUFFICIENCY AND FOOD SECURITY
IN THE PHILIPPINES**

Susan Tonin and William Munro*
Political Science Department, Illinois Wesleyan University

The Philippines have been advancing towards becoming a developed country. They have great potential since they are a great asset for sustainability and growth. One of the major factors that holds the country back though is food security. Food Security has doubled since 1990, but the level of food insecurity remains extremely high at approximately 66% of the population. The Philippine government has set out to tackle the problem through a policy of achieving rice self sufficiency. This paper analyzes why the policy of rice self sufficiency has been ineffective in reducing food insecurity sufficiently. In order to maximize food security/ rice self sufficiency, it is imperative to determine the major factors contributing to this issue. Focusing on the standard indicators of food security, availability and accessibility, the paper argues that there is low productivity gains and sustained high prices which constrain the access of the rural poor. This makes rice staple unaffordable to the rural poor. The data will be collected from the Philippine Statistics Authority and Ricepedia that both contain records of Philippine statistics. The conclusions hope to prove that these factors are the reason the country has not yet met rice self sufficiency.

Oral Presentation O7.3

**THE RELATIONSHIP BETWEEN EDUCATIONAL AND
DEMOGRAPHIC CHARACTERISTICS OF VIETNAMESE
CHAIRPERSONS AND THE PERFORMANCE OF THEIR FIRMS**

Thanh Vu and Michael Seeborg*
Economics Department, Illinois Wesleyan University

In recent years, human capital has become a distinctive feature of growth for companies. Therefore, understanding the effect of different human capital characteristics of managers on performance of firms has become increasingly important for every stakeholder. In this study, I follow about 200 of the biggest publicly traded companies in Vietnam in 2016 to see whether there exists a positive and significant relationship between the human capital quality of the presidents and the profitability of their corporations. Using the cross sectional data collected privately during my internship with Bao Viet Holdings, a top 5 financial institution in Vietnam, this project employs OLS regression analysis to test the hypothesis about this relationship. Results show that presidents who are female and have a doctorate degree tend to perform better. Surprisingly, the number of shares held by the presidents has a significantly negative impact on the profitability of firms as an addition in the number of shares a president holds decreases the excess returns on assets of his company.

Oral Presentation O8.1

**PERMANENTS OF TRIDIAGONAL AND HESSENBERG
MATRICES REPRESENTING RECURSIVE NUMBER AND
POLYNOMIAL SEQUENCES**

Ximing Dong and Tian-Xiao He*
Mathematics Department, Illinois Wesleyan University

Here presented a generalized approach to construct tridiagonal matrices and Hessenberg matrices representing recursive number sequences and recursive polynomial sequences so that their permanents equal the values of the recursive number sequences and the expressions of the recursive polynomial sequences.

Oral Presentation O8.2

TABULATION OF STRONG PSEUDOPRIMES

Tony Liu and Andrew Shallue*
Mathematics Department, Illinois Wesleyan University

The Fermat Theorem in number theory tells us that if a number is prime, a condition must hold. However, the converse of this theorem does not always hold true. Therefore, there exists some set of “fake” prime numbers which satisfy the theorem even though they are composite. The elements in such a set are called pseudoprimes. By extending the base number beyond 2 and forcing an extra condition, the concept of strong pseudoprimes was developed. In this research project, computer programs written in C++ were used to implement the tabulation of all strong pseudoprimes given an upper bound and a base number. Timings were performed to compare the differences of the new implementation versus the existing implementation in terms of their algorithmic complexity.

Oral Presentation O8.3

EXPLORING MULTIGRAPH PAIRS OF lKn

William O'Conner and Daniel Roberts*
Mathematics Department, Illinois Wesleyan University

This research lies within the fields of Combinatorics and Graph Theory. The purpose of this project is to determine and explore multigraph pairs of lKn , the complete graph on n vertices in which every edge is repeated l times. A multigraph pair is a pair of subgraphs of lKn which can be paired together to make lKn , and that satisfy certain other properties. In this talk, we derive results from patterns and general results for larger values to contribute to our overall understanding of graph pairs and graphs in general. We also show how this particular work can be related to other areas of mathematics.

Oral Presentation O8.4

2-(51, 6, 1) BLOCK DESIGNS

Wenting Zhao and Mark Liffiton*

Computer Science Department, Illinois Wesleyan University

A graph decomposition problem is a classical problem in combinatorics that involves breaking a large graph into small identical pieces. Mathematicians have a long history working on this type of problem, but many of the problem instances still remain unsolved. The major difficulty is that the search space for an answer is usually massive; to check every potential solution manually would take more than a lifetime (or the lifetime of the universe, even!). In this work, we are interested in looking at this old problem in a new way -- we explore it from a computational perspective. Computers are known to be great at doing repetitive tasks -- can we come up with a procedure for a computer to follow, or, say, encode the problem in a way a computer can understand, so that we could use a computer to solve it? We addressed the above questions by translating the graph decomposition problem into the Boolean Satisfiability Problem (SAT), a well-studied problem in computer science. Many efficient algorithms have been proposed in the past two decades. We explore whether the recent advances in the field enable us to solve more unknown cases in the graph decomposition problem.

POSTER SESSION A

9:00 - 10:00 a.m.

Odd-Numbered Posters

POSTER SESSION B

2:00 – 3:00 p.m.

Even-Numbered Posters

EDUCATIONAL STUDIES ORAL AND POSTER PRESENTATIONS - ES

State Farm Hall

Note: Student's name is underlined, faculty advisor designated with *

During each poster session the author will be present to discuss her or his research with conference attendees, and answer questions.

Please remove your posters from CNS Atrium by 3:30 p.m.

Poster Presentation P1

**THE ISOLATION, PURIFICATION, AND CHARACTERIZATION
OF FOURTEEN *MYCOBACTERIUM SMEGMATIS*
BACTERIOPHAGES**

Marissa Alcala, Alecia Beagles, Caroline Marchi, Samantha Ziomek
and Richard Alvey* and David Bollivar*
Biology Department, Illinois Wesleyan University

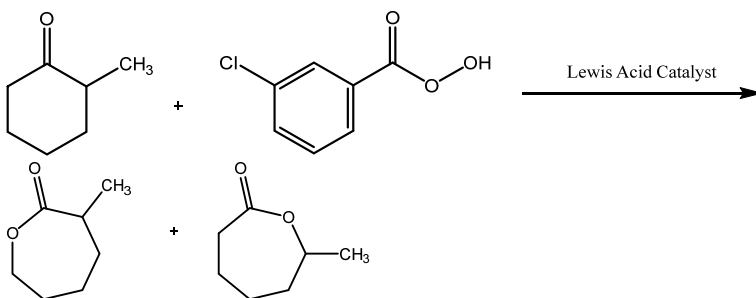
The overall goal of the SEA-PHAGES program is to utilize microbiology and bioinformatic techniques to study the characteristics of discovered bacteriophages. The collected data will contribute to the growing database of phage genomic information. Since bacteriophages are estimated to be the most numerous biological entities on earth, understanding the diversity of these entities is of significant biological interest. Bacteriophages from gathered soil samples were isolated utilizing the host *Mycobacterium smegmatis*, mc²155, through direct and enrichment procedures. During the Fall of 2016, fourteen *M. smegmatis* bacteriophages were isolated and streaked for purification. The fourteen phages were initially characterized by their plaque size and clarity, and their ability to form a lysogen. True lysogens were formed from nine of the fourteen isolated bacteriophages. Further analysis through electron microscopy lead to the determination of tail length and capsid size. Tail lengths ranged from 73 nm to 344 nm, and capsid diameters ranged from 60 nm to 95 nm. Electron microscopic analysis also allowed for the categorization of the fourteen bacteriophages into three classes: siphoviridae, myoviridae, and podoviridae. Twelve of the fourteen phages were classified as siphoviridae and two were classified as myoviridae. Specific phages, Squint, isolated by Alecia Beagles, and Tesla, isolated by Colin Page, were further analyzed because of their unique qualities highlighted during the isolation and characterization processes. The discovery of these fourteen novel bacteriophages is a step towards a greater understanding of phage diversity.

Poster Presentation P2

EFFECTS OF LEWIS ACIDS ON THE BAEYER-VILLIGER OXIDATION REACTION

Suchana Chaulagain, Samridh Gupta and Ram Mohan*
Chemistry Department, Illinois Wesleyan University

The products of the Baeyer-Villiger oxidation, viz. esters and lactones are useful synthetic intermediates and often difficult to make by other synthetic methods. There are many applications of the Baeyer-Villiger oxidation, some of which include the synthesis of antibiotics, steroids, pheromones, and monomers for polymerization. We have studied the effect of Lewis acids such as bismuth triflate, erbium triflate, and iron(III) chloride on the Baeyer-Villiger oxidation of various cyclic ketones. These catalysts are relatively non-toxicity, and non-corrosive. Preliminary results from this study will be presented.



Poster Presentation P3

**SCRAPE YOUR PLATE: UNDERSTANDING & PROMOTING
COMPOSTING HABITS ON A COLLEGE CAMPUS**

Lisa Cheng, Savannah Feher, Doninic Gambaiani, Tori Tiberi, Rachel Tomazin
and Linca Kunce*

Environmental Studies and Psychology Departments, Illinois Wesleyan University

A significant percentage of the nation's waste is compostable, but a majority of this waste ends up in landfills, which are quickly reaching capacity (Sussman, Grifford, & Scannell, 2013). Two studies were conducted to examine ways to improve the success of a composting system used by patrons of a college campus dining facility (i.e., composting--recycle--trash bins). In the first study, an educational intervention was used to broaden students' composting knowledge. Classes of students were either provided with information about composting (intervention group) or no information (control group). All participants then completed a survey about their attitudes, behaviors, and knowledge about composting. Overall, 97% of the 135 participants wanted the composting system to succeed, but only 25% reported that they always composted correctly. Intervention and control group participants did not differ in attitudes toward composting, however, *knowledge* of composting was significantly higher in the intervention group. In the second study, two waste audits were conducted (Fall 2016, Spring 2017) to assess the degree of contamination (i.e., non-compostable items) in the composting bins. Between these audits, several changes were made to enhance the clarity of the system (e.g., simplified signs, addition of lids on the composting bins). Preliminary analyses indicate substantially less contamination subsequent to the changes. Findings have implications for promoting proper composting habits on college campuses.

Poster Presentation P4

**POST-STROKE BEHAVIORAL DEFICITS IN MICE:
TWO MODELS COMPARED**

Cayla J. Dole, Emma M. Haan, Victoria Nemchek, Rachel Mavros and Abigail Kerr*
Psychology Department, Illinois Wesleyan University

Stroke is a leading cause of disability worldwide. Though current rehabilitative strategies improve quality of life for patients, they do not promote full functional recovery. Improving rehabilitation requires a better understanding of the mechanisms that underlie stroke injury and recovery; these questions are best explored in animal models. The current study directly compared behavioral outcome in two mouse models of ischemic stroke (vasoconstriction via endothelin-1 (ET-1) and photothrombosis). Sixteen mice were trained preoperatively on a reaching task to establish skilled motor performance. Mice then received ischemic stroke using one of the two methods. All strokes were administered to the forelimb representation area of motor cortex in order to disrupt performance of the previously trained motor skill. Beginning four days after surgery, mice were assessed for reaching proficiency daily for 14 days. Mice receiving photothrombotic lesions broke significantly fewer pasta pieces than mice receiving ET-1 lesion. Our results suggest that photothrombotic lesions result in greater behavioral deficits than ET-1 lesions. One common finding with rodent models of stroke, especially when induced by ET-1, is that animals exhibit spontaneous recovery that complicates interpretations of results. Our data suggest that photothrombotic stroke may be a better model of long-term behavioral deficit that could circumvent some of these issues.

Poster Presentation P5

**WHO IS BETTER OFF?: AN EMPIRICAL ANALYSIS OF
HOW SIBSHIP EFFECTS EARNINGS**

Cassidy Elgeness and Robert Leekley*
Economics Department, Illinois Wesleyan University

The economics of the family has become an increasingly popular topic in economics. Using the economics of the family theory and human capital theory, this study looks at how sibship effects earnings as an adult at specific ages. Sibship is defined in this study as the number of siblings in a family and where the respondent falls in the birth order. These theories both suggest that first born children would have higher earnings and that number of siblings is negatively related to earnings. The theory explains the potential relationship between sibship and earnings. Using OLS regression models this study predicts the \ln_WAGES when the respondents were 20, 25, 30, 35, 40, 45, and 48 as a function of birth order, number of siblings, and various control variables. The results from this study do not support the effect of birth order, however, the number of siblings has a significantly negative influence on earnings for ages 20, 25, 30, 35, and 40. Being in a smaller family has its advantage over being in a larger family, but it does not matter where you fall in the birth order.

Poster Presentation P6

**THE BIOINFORMATIC ANALYSIS OF A CLUSTER S
MYCOBACTERIUM SMEGMATIS BACTERIOPHAGE TESLA**

Janna Fitzgerald, Zoephia Laughlin, Colin Page, Bailey Reichert
and Richard Alvey* and David Bollivar*

Biology Department, Illinois Wesleyan University

The SEA-PHAGES program strives to increase undergraduate interest in biological research giving students the opportunity to participate in a hands on project concerning bacteriophages. This program expands the knowledge of its participants while increasing the diversity of the Actinobacteriophage database. The bacteriophage Tesla was collected in Oswego, Illinois by Colin Page, isolated at Illinois Wesleyan University, sequenced at the University of Pittsburgh and annotated at Illinois Wesleyan University. The objective of this project was to interpret the genome of Tesla and then compare the evolutionary relationship existing between the bacteriophage Tesla and the other seven bacteriophages within the S Cluster. A cluster of bacteriophages is a group that shares at least 50 percent of recognizable nucleotide similarities. The S Cluster is characterized by a lack of a tRNA gene, a large group of forward reading genes in the beginning of the genome with a smaller group of reverse reading genes toward the end, an average length of 64,955 base pairs, 95 percent nucleotide similarity, and having approximately 107 to 113 genes. To better understand the S Cluster, we annotated the genome of Tesla. From this data as well as genomic information of other S cluster phages found on the program Phamerator, it was found that many of Tesla's functions were shared with the other phages. In comparison with Marvin, the original member of the S Cluster, Tesla has 106 genes that are the same and 6 that are different. In the Tesla genome, 70 are hypothetical proteins and 42 were found to have their functions identified. Based on this information, we have learned that members of the S cluster are highly conserved but have some differences. This supports the mosaic nature of bacteriophage genomes.

Poster Presentation P7

**EFFECT OF AFFECTIVE STATE ON NEURAL AND
BEHAVIORAL INDICES OF SOCIAL EXCLUSION**

Tanya A.Gupta and Jason Themanson*
Psychology Department, Illinois Wesleyan University

Social exclusion is a universal and relatable phenomenon, with far-reaching and deleterious effects. The scientific examination of the ongoing processing of exclusion using the continuous data provided by neural event-related brain potentials (ERPs) provides valuable insight regarding one's cognitive processing of exclusion and its psychological consequences. Although several ERP studies of social exclusion exist using the Cyberball paradigm, there is a lack of information regarding different forms exclusion, as well as exposure to factors prior to exclusion which may modify its detrimental neural effects. The current study utilizes the measurement of continuous neural data as well as self-report measures to examine the neural effects of a novel ERP exclusion paradigm, called the Future Alone task. Further, the study employs the International Affective Picture System (IAPS) in order to observe the possible modification of ERP and self-report responses to different forms of social exclusion by changing one's affective state.

Poster Presentation P8

**PREDICTING AGGRESSION
USING EGO-DEPLETION, PROVOCATION, AND
DISPOSITIONAL AGGRESSIVENESS**

Grace Hanzelin and Marie Nebel-Schwalm*
Psychology Department, Illinois Wesleyan University

The I³ Meta-theory and the Perfect Storm Theory of aggression state that aggressive behavior is caused by an interaction between three elements: Inhibition, Instigation, and Impellance. Inhibition refers to factors that would contribute to a person refraining from a specific behavior, Instigation refers to the effects of exposure to something in a specific context that normally motivates aggressive behavior, and Impellance refers to factors that act with an instigator to enhance the likelihood of a behavior. Aggressive behavior is more likely to occur in situations that foster low inhibition and high instigation and impellance. Using this theory, we have sought out to predict aggressive behavior in college students, utilizing ego-depletion to manipulate inhibition, provocation to manipulate instigation, and dispositional aggressiveness, or trait aggressiveness, to measure our factor of impellance. We predict aggressive behaviors will be highest in situations with high instigation and low inhibition, and additionally that aggressive behavior will be highest within individuals who score highest in dispositional aggressiveness.

Poster Presentation P9

THE GENOMIC INVESTIGATION AND ANALYSIS OF SQUINT, A NOVEL J CLUSTER MYCOBACTERIOPHAGE

Tulasi Jaladi, Jessica Keen, Morgan Reish, Andria Talavera
and Richard Alvey* and David Bollivar*
Biology Department, Illinois Wesleyan University

The SEA-PHAGES program expands the knowledge of bacteriophages through extensive research completed by students isolating and annotating unique bacteriophages. During the fall of 2016, a J cluster bacteriophage, Squint, was isolated, purified and sequenced. The J cluster bacteriophages are characterized by their average genome size of 110,848 base pairs and average gene number, 235. The J cluster contains thirty-five members, which is relatively small in comparison with other mycobacteriophage clusters. DNA isolated from Squint was sequenced at the University of Pittsburgh, and annotated at Illinois Wesleyan University. Squint was discovered by Alecia Beagles in the Fall of 2016 from a soil sample collected in El Paso, Illinois. Using a variety of bioinformatics tools and databases such as DNA Master, HHpred, BlastP (of Phagesdb.org), Glimmer and Genemark, the genome of Squint was successfully annotated. One aspect of annotation is to search for predicted protein functions. HHpred and BlastP were utilized in the search for similar proteins. Protein functions identified were noted in the Squint DNA Master file, along with each gene's length (DNA Master), coding potential (Genemark and Glimmer), relation to genomically similar phages (BLAST), and Shine-Dalgarno site information (DNA Master). Based on our annotations, Squint contains a 110,240 bp long genome, 244 open reading frames (ORFs), and one tRNA. Through the annotation of Squint's genome, we discovered the unique organization of a new bacteriophage. The completed annotation of Squint will be sent to GenBank, where it will be added to an enormous database of annotated phage genomes

Poster Presentation P10

THE EFFECTS OF THYROID HORMONE ON CORNEAL INNERVATION

Vendana (Jill) Rajarathnam, Mansi Patel, Shinho Kim, Ngan Phan and Tyler Schwend*
Biology Department, Illinois Wesleyan University

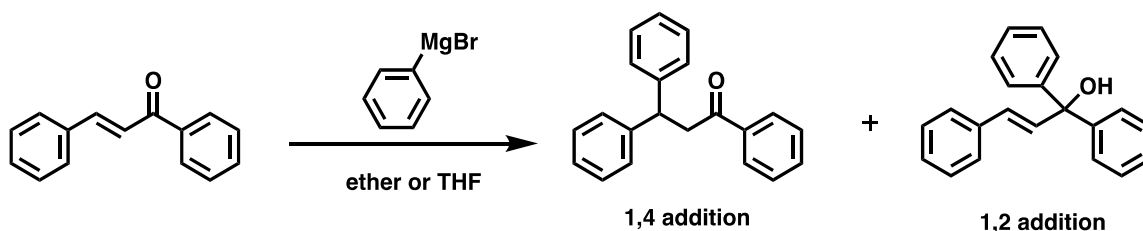
The cornea, the transparent tissue at the front of the eye, is the most densely innervated tissue on the surface of the body. The dense network of corneal nerves is crucial for the transmission of noxious environmental stimuli, thus playing a vital protective role in maintaining vision and eye health. Unfortunately, corneal nerves are often damaged following injury or modern corrective surgeries such as LASIK and cornea transplantation. Inexplicably, corneal nerves are very slow to repair or fail to do in some patients. Gaining a deeper understanding of the mechanisms that promote nerve growth into the cornea during embryonic development will enable scientists to design therapies aimed at enhancing nerve regeneration following cornea injury or repair. Among the molecules shown to influence the process of cornea innervation is thyroid hormone (T4). T4 is a major regulator of metabolism in adults, though its role in nerve development and regeneration is less clear. Previous work has shown that exposing chick embryos to T4 leads to increased penetration rates and branching of corneal nerves, such that a greater proportion of the cornea is innervated at earlier timepoints. These findings raise the intriguing possibility that T4 may be therapeutically useful in corneal nerves to regenerate at a faster rate following injury. Despite this, the mechanism of T4 stimulation of corneal nerve innervation is unknown. Herein, we address whether T4 directly (by action on nerves) or indirectly (by changing the biology of the cornea) regulates the developmental growth rate of nerves by monitoring how nerves respond to T4 treatments in living chick embryos.

Poster Presentation P11

STUDIES INTO ADDITION OF GRIGNARD REAGENTS TO CONJUGATED ALDEHYDES AND KETONES

Zachary Kinney and Ram Mohan*
Chemistry Department, Illinois Wesleyan University

Although the addition of a Grignard reagent to simple carbonyl compounds is well documented, the corresponding reaction with α , β -unsaturated aldehydes and ketones is not as well understood. The addition of a Grignard reagent to α , β -unsaturated aldehydes and ketones has been investigated. Several parameters such as effect of substrate, choice of Grignard reagent, solvent and temperature will be investigated. In addition the effect of Lewis acids in determining product composition (1,2- vs. 1,4- addition) will be studied. The results of this study will be presented.



Poster Presentation P12

**A NEW REHABILITATION METHOD FOR STROKE
REHABILITATION: A COMPARATIVE STUDY BETWEEN
THE PASTA MATRIX REACHING TASK AND
THE NOVEL REACHING TASK**

Shannon Maloney and Abigail Kerr*
Psychology Department, Illinois Wesleyan University

Stroke is a leading cause of disability worldwide. To promote better outcome for stroke survivors, scientists use animal models to understand basic mechanisms of stroke, rehabilitation, and recovery. Rodent models have revealed that skilled reach training (e.g., coordinated use of digits and limbs) promotes improved functional outcome following stroke. The single-pellet task (SPT) is widely used in rats; however, it can be an insensitive measure in other species, such as mice. The pasta matrix task (PMT) has been effectively implemented in mice; however, the task is limited by its required strength component. This study introduces a novel-reaching task aimed at overcoming the limitations of established tasks. Mice were trained on the PMT, SPT, or the novel task to establish the skill and determine the efficacy of each task. The novel task proved to be difficult for the mice, with performance levels reaching an overall average of 18.5%. After 20 days of training, performance did not reach an asymptotic level. Performance on the PMT and SPT resembled established levels of successful acquisition. Multiple modifications of the novel-reaching task apparatus were explored. Though a poor assessment tool, we believe the novel-reaching task may be particularly useful as a rehabilitative strategy due to the complexity of reach it promotes, which should stimulate high levels of neural plasticity. Findings from this study highlight the importance of drawing comparisons across reaching tasks and caution comparing different task results to one other. A follow-up study is underway whereby each task is compared for its rehabilitative benefits.

Poster Presentation P13

***BRACHIONUS PLICATILIS* ABILITY TO INGEST, DIGEST AND ASSIMILATE DISSOLVED ORGANIC MATTER**

Brianna Miulli and William Jaeckle*
Biology Department, Illinois Wesleyan University

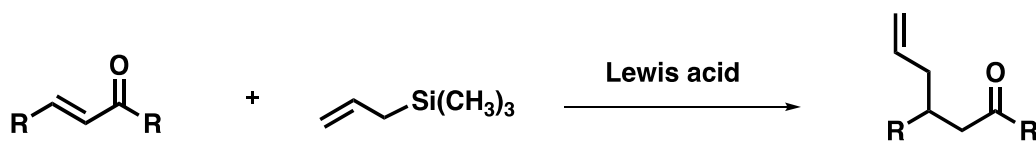
Brachionus plicatilis is a marine rotifer that feeds on particles ranging from ~1-20 μm in size. The abundance of such particulate organic materials in marine environments is exceeded by the amount dissolved organic materials (DOM) by a factor of ten. We tested the hypothesis that *B. plicatilis* can use DOM as food by investigating their ability to consume iron-containing molecules from seawater. Rotifers were incubated for five hours in filtered seawater (0.2 μm pore size, FSW) containing 1 mg / mL of an iron-containing protein ferritin, an iron-containing polysaccharide iron dextran (ID), and ferrous gluconate (FG); FSW acted as an experimental control. The presence of iron atoms in rotifers was detected after a one hour incubation in a 3:2 mixture of 1% potassium ferrocyanide and 2% hydrochloric acid; ferrocyanide ions react with iron atoms to form an insoluble product called Prussian Blue (PB). PB was present in the lumen of the digestive system of rotifers exposed to all iron-containing molecules; controls had notably lower levels of PB in their digestive systems. Stomach cells of rotifers incubated in ferritin and FG, but not ID or controls, contained PB as a uniformly distributed blue color and as discrete spots. These data reveal that some DOM, present within ingested water, can be absorbed by the cells of the digestive system of *B. plicatilis* and represent a potential source of food for rotifers.

Poster Presentation P14

LEWIS ACID CATALYZED 1,4 HOSOMI-SAKURAI ADDITION OF ALLYL GROUPS TO CHALCONES AND OTHER A, B-UNSATURATED COMPOUNDS

Jack Roireau, Brian Worby and Ram Mohan*
Chemistry Department, Illinois Wesleyan University

The Hosomi-Sakurai reaction provides a convenient way for the addition of an allyl group to ketones, aldehydes, acetals, imines, epoxides, and acid chlorides. But typically the reaction requires low temperatures, anhydrous solvent and the use of a corrosive catalyst, TiCl_4 . We have studied the utility of nontoxic and non-corrosive Lewis acids such as bismuth triflate, erbium triflate and iron tosylate for the allylation of a variety of chalcones. Preliminary results from this study will be presented.



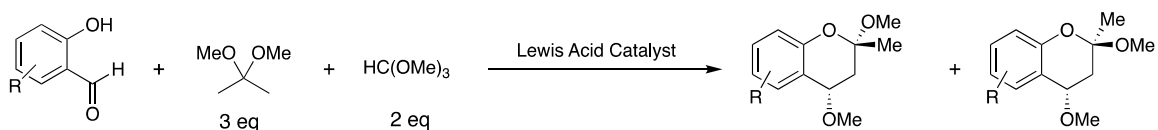
Poster Presentation P15

LEWIS ACID CATALYZED SYNTHESIS OF DIHYDROBENZOPYRANS

Ian H. Taylor and Ram Mohan*

Chemistry Department, Illinois Wesleyan University

Dihydrobenzopyrans are of interest as they possess antifungal and antibacterial properties, and are useful pharmaceutical intermediates. We have studied the utility of iron chloride, iron tosylate, and various bismuth salts as catalysts for the formation of the dihydrobenzopyran ring system from several substituted salicylaldehydes. In addition, the effect of solvent on this reaction is being studied. Preliminary results from this study will be presented.



R= OMe, Br, Cl

Poster Presentation P16

**ZEBRAFISH LOCOMOTION: UNDERSTANDING OF
BEHAVIORAL DIFFERENCES AS A FUNCTION OF
AGE AND SEX**

Tori Tiberi, and Brad Sheese* and Mark Liffiton*
Psychology Department, Illinois Wesleyan University

This study examined Zebrafish locomotion in the Novel Tank paradigm are related to age and sex of the fish. Zebrafish are an important model organism commonly used for research in neuroscience and psychology. Despite evidence of variations in behavior as a function of both age and sex, the majority of studies on Zebrafish behavior have ignored these factors. The current research seeks to expand our understanding of behavioral differences as a function of age and sex through the use of an automated tracking system that allows us to utilize a larger sample than has been used in previous studies and to make very fine-grained analyses of behaviors. The sample consisted of 60 fish (25 female, 35 male; 36 older, 24 younger) that were monitored for 60 minutes following their introduction to a novel environment. The results indicate that females of both fish types show much lower activity levels during the first ten minutes than males.

Poster Presentation P17

FREQUENCY EFFECTS ON BEHAVIORAL ANALYSIS UPON SPINAL CORD STIMULATION

Randi Wilson and Joseph Williams*

Psychology Department, Illinois Wesleyan University

With an aging population, chronic pain has quickly become a world-wide epidemic. When traditional treatments, such as opioid medications, are not effective, spinal cord stimulation (SCS) can achieve a reported 50% reduction in pain scores. Low-frequency 50Hz SCS treatment has been used in patients since 1967, but carries a 30% failure rate. With the introduction of higher frequency SCS, better efficacy is being observed. In this study, the spared nerve injury model for neuropathic pain, involving transection of the sciatic nerve, was implemented in male Sprague-Dawley rats. Groups of animals were implanted epidurally with a stimulation lead connected to an external spinal cord stimulator. SCS was continuously applied for 42 hours. The study included six treatment groups (n=10) with varying stimulation frequencies and currents as well as control groups to account for lead implant, injury model and naïve animals (n=7). Behavior of pain-like behavior (hypersensitivity) was assessed before surgery (baseline), before treatment (5 days post-surgery) and after 24 and 42 hours of treatment. This poster will address whether varying stimulation parameters may optimize the efficacy of SCS in relieving chronic pain.

Poster Presentation P18

**OPERANTLY CONDITIONED PLACE-AVOIDANCE
IN ZEBRAFISH (*DANIO RERIO*)**

Tanya A. Gupta and Brad Sheese* and Mark Liffiton
Psychology Department, Illinois Wesleyan University

Zebrafish (*Danio rerio*) are commonly utilized in neuroscience and psychology for genetic, pharmacological, and developmental research. Zebrafish have been shown to be capable of learning through classical and operant conditioning. The current study examined conditioned place-avoidance through operant conditioning in zebrafish, using a novel automated data collection system. In a ten-minute training period, fish reliably learned to avoid shock by restricting their movement to a randomly assigned side of the tank. In a follow-up assessment period with no shock, we found that on average, within 40 minutes, fish no longer avoided the side of the tank previously associated with shock.

EDUCATIONAL STUDIES

POSTER PRESENTATIONS - SESSION 1

April 8, 2017, 9:00 – 10:00 am

SFH FOYER/SFH 101

1.1 Martha Aguirre

1.2 Macie Gillis

1.3 Morgan Houk

1.4 Brian Yager

1.5 Emily Leiner

1.6 Cody Murphy

1.7 Meg Stanley

1.8 Elizabeth Hart

ORAL PRESENTATIONS - SESSION 2

April 8, 2017, 10:00 – 11:00 am

SFH 102

MODERATOR: AMBER STRINGER

2.1 Amy Sanchez

2.2 Elaine Coppe

2.3 Brooke Langley

2.4 Troy Huber

POSTER PRESENTATIONS - SESSION 3

April 8, 2017, 11:00 – 12:00 noon

SFH FOYER/SFH 101

3.1 Calen Crim

3.2 Faith Richard

3.3 Kaitlyn McCormack

3.4 Olivia Simkins

3.5 Tie Sun

3.6 Catherine Tatsuguchi

3.7 Tristan Smith

3.8 Jocelyn Vanderwiel

Poster Presentation ES P1.1

**BUILDING GLOBAL CITIZENS: THE BENEFITS OF TEACHING
TOWARDS COMMUNICATIVE PROFICIENCY IN THE
FOREIGN LANGUAGE CLASSROOM**

Martha A. Aguirre and Leah Nillas*
Educational Studies, Illinois Wesleyan University

In the current globalized world, foreign language educators are changing their teaching methods in the classroom. The American Council on the Teaching of Foreign Languages (ACTFL) are recommending teachers to implement a framework that prepares students to be communicatively proficient in a foreign language, rather than solely learning linguistic structures. The ACTFL World Readiness Standards and the ACTFL Performance Descriptors for Learning Languages allows educators to accurately measure student improvement by observing what students can do in real life situations while promoting the use of the target language in meaningful cultural contexts. The purpose of the self-study was to identify the benefits of teaching towards communicative proficiency by analyzing how well the standards and ACTFL's three modes of communication were used in the classroom. Data gathered for this self-study include lessons plans, videos, and student assessment samples. There are many potential challenges when implementing this proficiency framework, but according to research, when implemented correctly, students are able to produce language that is readily available for real-life use.

Poster Presentation ES P1.2

**CRITICALLY ENGAGING STUDENTS USING
SOCIAL JUSTICE TOPICS IN CHILDREN'S LITERATURE**

Macie Gillis and Leah Nillas*

Educational Studies, Illinois Wesleyan University

Second grade students engaged in literature that focused on how their actions affect others, cultural differences, and family differences. This study was conducted to detect how students engaged with these various social justice topics. These topics were incorporated into the regular curriculum during reader's workshop and small reading groups. There are many books teachers may be using already that they could integrate a social justice lesson into that would engage students in the lesson (Pohan, 2013). Engaging students in literature is particularly important because engagement involves students being motivated and actively participating in what they are being taught (Barkley, 2009). Data was collected through field notes that included observations and student quotes, lesson plans that kept track of the literature used in teaching language arts, and student reflections on how their actions affect others. Integration of social justice topics engaged students to actively participate in discussion, ask questions, and find connections to themselves and the world.

Poster Presentation ES P1.3

**BREAKING THE NORM:
A CLASSROOM WITHOUT INCENTIVES**

Morgan Houk and Leah Nillas*
Educational Studies, Illinois Wesleyan University

It is common practice for teachers to implement incentive-based behavior programs into their classroom management routine. This use of external motivators is a way to reward students for behavior and academic performance that is already expected of them (i.e., staying quiet in the hall, turning in homework). However, external motivators tend to diminish any opportunity for students to develop intrinsic motivation. There is a strong relationship between intrinsic motivation and student achievement (Ryan & Deci, 2009). Having students that are intrinsically motivated highlights the fact that they have found a topic in which they are passionate and as a result, will work harder and enjoy learning. This self-study includes a qualitative analysis of data (i.e. field and anecdotal notes, lesson plans, reflections) and a review of current research. This self-study investigates specific strategies teachers can use in order to foster intrinsic motivation that instills an overall passion for learning.

Poster Presentation ES P1.4

**EFFECTIVE READING INTERVENTION STRATEGIES
FOR ELEMENTARY STUDENTS WITH AUTISM**

Brian Yager and Leah Nillas*

Educational Studies, Illinois Wesleyan University

According to the Center for Disease Control and Prevention (2012), autism spectrum disorder (ASD) is prevalent in 1 in 68 children ages 3-17, with the rate increasing every few years. For a number of students diagnosed with ASD, learning impairments may accompany their autism and limited communication skills make traditional teaching methods more difficult (Mule, Volpe, Fefer, Leslie, & Luiselli, 2015). With an increasing number of students diagnosed with ASD in the classroom, identifying practices that improve students' reading abilities remains a vital concern for teachers. Little research, however, is dedicated to finding effective intervention practices specifically for students diagnosed with ASD. This literature review evaluates different reading intervention strategies that have been assessed for their effectiveness in improving students' sight word recognition and reading comprehension capabilities. Determining effective reading intervention strategies is crucial for teachers in making decisions in meeting the needs of students with ASD.

Poster Presentation ES P1.5

**READING INTERVENTION STRATEGIES FOR
ELEMENTARY-AGED STUDENTS**

Emily Leiner and Leah Nillas*

Educational Studies, Illinois Wesleyan University

The purpose of this research synthesis is to explore some of the effective reading interventions for elementary-aged students. Reading is a fundamental skill that is acquired during these early years, and if students are not able to read proficiently, they often fall behind in other subjects as well. While there are many academic articles addressing reading intervention strategies for children, a cohesive literature review that considers all aspects of intervention is nonexistent. Ryan & Bernard's (2003) techniques to identify themes are used to analyze the literature in this synthesis. The components of the literature are broken down into the skills for reading, fluency, and comprehension. Through the analysis of the articles, such themes as the duration, age, and focus of intervention are all important aspects to consider. It is important that educators are aware of skills and strategies they can use for struggling elementary-aged readers.

Poster Presentation ES P1.6

HOW CAN I USE TECHNOLOGY IN MY CLASSROOM TO IMPROVE STUDENTS' WRITING?

Cody Murphy and Leah Nillas*

Educational Studies, Illinois Wesleyan University

Writing has always, until recent developments, been taught through the traditional pencil and paper method. With the advancement in technology and its implementation in education, the traditional method alone is not enough. This research focuses on how technology can be utilized in the writing curriculum. For educators to successfully teach students how to use technology in their classroom they themselves need to know the benefits and drawbacks of technology. For my study, the effect of technology on student writing was observed in an urban classroom of fourth graders in a lower income community. My classroom had one-to-one access to a laptop cart. Students used Worldbook and Microsoft Word to create well developed research papers. I used Ryan and Bernard's (2003) source analysis tools, to look over student work samples and classroom field notes. Using this data the effects of technology on student writing was analysed.

Poster Presentation ES P1.7

**DIFFERENTIATION AND ITS EFFECT ON THE
DEVELOPMENT OF STUDENT STUDY SKILLS**

Meg Stanley and Leah Nillas*

Educational Studies, Illinois Wesleyan University

Differentiation is used by educators to better meet the needs of all students; yet, differentiation has been found most effective when students are a part of the discussion regarding their individual needs, learning styles and preferences in the classroom (Tomlinson, 2008). Making students aware of differentiation and choices in the classroom raises student self-awareness and the development of skills overtime. During my student teaching, I implemented differentiated review activities and began a dialogue with students about their learning preferences, studying habits, and experience with taking social studies exams. Over the course of the semester, students began choosing study materials that aligned with how each of them learned best. Through self-reflection activities, students better understood why their study habits and choices were effective or not. I utilized these self-reflection activities, field notes, and a summative survey as data sources to determine how differentiation impacted the development of student study skills throughout the semester. Students were enthusiastic about receiving guidance and information about effective studying; students became aware of the correlation between effective study habits and test performance throughout the semester.

Poster Presentation ES P1.8

CREATING CONNECTIONS IN A COLLABORATIVE CLASSROOM

Elizabeth Hart and Leah Nillas*
Educational Studies, Illinois Wesleyan University

Social well-being is an active part of every student's life in the classroom. The importance of fitting in with one's peers and having a pleasant experience in school is vital for students to learn well. I was given the chance to observe fourth grade student interactions during classroom work and decipher how it influenced the environment and relationships within that environment. In this qualitative study I look at the impact of different variables in the classroom such as seating arrangements, peer relationships, collaborative work, and how interactions between students influences their social well-being in the classroom. Through analysis of supporting literature and a critical analysis of the field notes, lesson plans, and student interactions I created and observed while student teaching. This study aims to find strategies that teachers can use to create the best environment for their students not only for learning but also for growing as young men and women.

Oral Presentation ES O2.1

**RESTORATIVE PRACTICES IN THE
ELEMENTARY CLASSROOM**

Amy Sanchez and Leah Nillas*

Educational Studies, Illinois Wesleyan University

Suspensions are still a widely used approach in school's discipline despite the lack of evidence that they prevent future misbehavior (Gregory, Clawson, Davis, & Gerewitz, 2016). Restorative practices are an alternative discipline method whose core values are to repair the harm, reduce the risks, and empower community. This approach focuses on developing coping and problem solving skills in students (Zehr,2002). The purpose of this study is to explore how incorporating restorative practices in the classroom promote students' awareness of their behavior. Different classroom practices and curriculum were implemented to develop students' understanding of their behavior. I found that incorporating aspects of restorative practices and implementing lessons on mindfulness promoted positive interactions between students and provided an opportunity for students to develop common language to identify and understand one's own feelings.

Oral Presentation ES O2.2

**TEACHING DIVERSE LITERATURE FOR SOCIAL JUSTICE
IN THE RURAL ENGLISH CLASSROOM**

Elaine Coppe and Leah Nillas*
Educational Studies, Illinois Wesleyan University

In racially and linguistically homogenous communities, a lack of diverse literature can lead to a lack of diverse perspectives within the classroom. In previous studies, researchers found that after teachers incorporated multicultural literature in the classroom, students were able to notice oppression and discuss its effect, relate to the characters and their situations, and move from empathy to action through global citizenship. This study aims to identify how incorporating multicultural literature in a secondary English classroom can impact students' perceptions of the lives of others. This study was conducted in a rural high school with a class of fifteen sophomores and juniors. The students engaged in whole class and small group discussions where students reacted to the varying perspectives of characters and worked on individual reflections about what they discovered in the literature. The data includes student work samples, student surveys, teacher field notes, and teacher reflections. In today's classrooms, empathy and understanding are invaluable learning outcomes, and this study identifies students' reactions to multicultural literature in their homogenous classroom.

Oral Presentation ES O2.3

**SCHOOL-BASED SOCIAL SKILLS INTERVENTIONS
FOR AUTISTIC CHILDREN**

Brooke Langley and Leah Nillas*
Educational Studies, Illinois Wesleyan University

Autism Spectrum Disorder (ASD) is linked with symptoms often centered on social skills (Shore, 2001). Different models have been employed to increase such social skills for ASD children in schools. The purpose of this literature review is to enhance knowledge about social skills interventions, synthesize ways for such interventions to be successful, utilize of different aspects of social skills, explore training for teachers to employ such tasks, and integrate such therapy into an inclusive classroom (Batten, 2005; Denning, 2013; Stormont, 2013; Whalon, 2015; Camargo, 2016; Kasari, 2016). Focused on evaluating intervention strategies, this literature review elaborates on all concepts related to such interventions in lieu to classroom inclusion for ASD children. The research studies included in the review were chosen based on significant findings, detailed descriptions of all areas involved in intervention, and continuity of social skills intervention subgroups such as peer intervention and group intervention.

Oral Presentation ES O2.4

**REPURPOSING CLASS TIME: THE FLIPPED
CLASSROOM MODEL**

Troy Huber and Leah Nillas*

Educational Studies, Illinois Wesleyan University

When teaching secondary mathematics, teachers face the challenge of engaging students in the content. Bergmann and Sams (2012) proposed the *flipped classroom* as a method of engaging students through the repurposing of time spent in class. The flipped approach modifies traditional instruction as students use online video resources to prepare for class and in-class time is devoted to problem-solving activities and facilitating individual instruction. This self-study sought to explore the effectiveness of the flipped classroom on students' learning, motivation, and engagement. Lesson plans, field notes, and students' exit slip and survey responses were collected from three Honors Geometry classes to investigate learning within the flipped classroom. Findings indicated that the flipped approach engages students in active learning and discovery, increases students' vocabulary development, and fosters independent mathematical thinking. The students responded well to this instructional strategy and demonstrated an increase in cognitive engagement and understanding using this approach.

Poster Presentation ES P3.1

**FOSTERING STUDENT ACADEMIC GROWTH THROUGH
THE STANDARDS BASED GRADING MODEL**

Calen J. Crim and Leah Nillas*

Educational Studies, Illinois Wesleyan University

This research discusses the implementation of standards based grading within a secondary social studies classroom and how this system effectively promotes student learning and academic growth. I discuss the experiences and quantitative data derived from previously implemented standards based grading systems by educational professionals as well as provide a comprehensive look at my own implementation experience with the system. Using data from my classroom, I explain how I analyzed my data sources, including field notes, student records, and student work to interpret how my students responded to the standards based grading model used in my classroom as well as to analyze student performance throughout the semester. This includes types of assessments implemented, grading scales and standards, and student reactions. The research from this study displays that standards based grading can foster higher levels of student performance through implementation of classroom learning objectives and a focus on growth rather than grade.

Poster Presentation ES P3.2

STUDENT CHOICE OF MATHEMATICS STRATEGIES

Faith Richard and Leah Nillas*

Educational Studies, Illinois Wesleyan University

Teachers are faced with a wide range of abilities in their classrooms every day and are always looking to reach all students' needs. To differentiate instruction, a teacher can use a "variety of sense-making activities or processes through which students can come to understand and own information and ideas" (Tomlinson, 1995, p. 2). When students are introduced to different strategies and allowed to choose when to use them, they often had an increased understanding of the material (Maloy et al., 2014; Baroody et al., 2013). This study investigates the relationship between students' choice of mathematics strategies and their skill mastery. First grade students were taught mathematics strategies and expected to use them. Data was collected from field notes, student work, and weekly student anecdotes. Relating to current research, it is essential to provide students with a number of mathematics strategies to enhance their learning and increase their understanding of concepts.

Poster Presentation ES P3.3

**ACADEMIC ACCOMMODATIONS FOR STUDENTS
WITH MENTAL ILLNESSES**

Katie McCormack and Leah Nillas*
Educational Studies, Illinois Wesleyan University

The purpose of this research was to discover what effective strategies teachers can implement to effectively accommodate the learning needs of students diagnosed with mental illnesses. The literature explores different symptoms shown by students with mental illness, as well as the role of the teacher in accommodating their students' academic needs. Furthermore, different teaching strategies, including Stormont's (2015) implementation of mood monitoring, behavioral monitoring, and adaptive thinking skills, are presented to demonstrate their effectiveness in assisting students with mental illnesses to reach their academic goals. The research was located through peer-reviewed academic journals published in the past 10 years, and assessed on their ability to provide effective examples of how teachers can recognize and accommodate students with mental illnesses. This study will serve both teachers and students with mental illnesses, as it will provide in-depth analysis of the needs of these students as well as how to effectively accommodate them in the academic setting.

Poster Presentation ES P3.4

EXPLORING CREATIVE WRITING APPROACHES AND IMPACTS TO WRITING DEVELOPMENT

Olivia Simkins and Leah Nillas*
Educational Studies, Illinois Wesleyan University

Creative Writing is a way for students to express their own thoughts and ideas through imaginative writing (YourDictionary 2016). This process is often flexible and develops over time. It is important to allow students to choose a process that works for them and strengthen their writing by utilizing a particular technique such as technology or student journals. Often, students do not get the chance to do so. During my student teaching placement, I analyzed data collected from a second grade classroom after I introduced different writing techniques such as journaling, digital story telling, and note taking. Students were not prompted and their work was not revised by anyone else. It was purely up to the students what they wrote about. It is important for students to be able to structure their work in any way they wanted to because this allowed them to think creatively and in a way that supported their success. After implementing different writing approaches, I analyzed student journals and digital story telling apps. This consisted of delving into my students' work to look for recurring themes by applying repetitions, transitions or similarities or differences in the students' different writing pieces. I also looked for improvement of spelling and grammatical errors throughout their writing pieces. When I analyzed notes taken from the field, I looked for commonalities between the entries and I also looked to see if there was any missing data from what I had observed. Results support that introducing different writing techniques improved spelling, vocabulary and increased creativity in student writing.

Poster Presentation ES P3.5

**LEARNING EXPERIENCES OF ASIAN INTERNATIONAL
UNDERGRADUATE STUDENTS IN U.S. UNIVERSITIES**

Tie Sun and Leah Nillas*

Educational Studies, Illinois Wesleyan University

The number of Asian international undergraduate students in U.S. universities is constantly increasing. This significant increase in number impacts universities in regards to its mission statements, administration system, academic atmosphere, and school environment (Andrade, 2008; Bertrand & Lee, 2012; Huang, 2006). The purpose of this literature review is to help administrators and educators in U.S. universities to effectively know the overall academic performance and college life of Asian international students by introducing their learning experiences through demonstrating data and examples from existed studies. Also, this research synthesis provides college administrators and educators with practical strategies to enhance the learning experiences of Asian international undergraduate students through analyses of successful case studies from various universities across the country. Selected research studies from relevant journals reveal that learning experiences of Asian international undergraduate students have a close relationship with the administration of universities and teaching strategies of educators (Constantine, Kindaichi, Okazaki, Gainor, Baden, 2005; Hung & Hyun, 2010).

Poster Presentation ES P3.6

STUDENT LEARNING: PROCESS VS. PRODUCT

Cathy Tatsuguchi and Leah Nillas*
Educational Studies, Illinois Wesleyan University

Traditionally, students learn in a teacher-centered classroom, where the focus is solely on the teacher as opposed to a student-centered classroom where students and teachers share the focus. Recently, the debate of teacher-centered versus student-centered has come to the forefront of education. Teachers are always looking for ways to engage students in the learning process and several studies designed around student-centered teaching have indicated that student engagement and achievement increases when students and teachers share the focus in the classroom. During my student teaching experience in a fifth-grade classroom, I observed that many students were not actively engaged in the learning process. Majority of my students completed tasks with minimal effort when asked to demonstrate a specific skill, especially in mathematics. I implemented student-centered lessons in hopes of increasing student engagement. With these lessons, it is expected that students demonstrate responsibility for their learning as they work with peers and teachers to actively engage in the learning process.

Poster Presentation ES P3.7

HOW STUDENT LEARNING STYLES EFFECT ACHIEVEMENT AND PARTICIPATION IN MATHEMATICS

Tristan Smith and Leah Nillas*

Educational Studies, Illinois Wesleyan University

This study was conducted with the goal of finding an answer to how students with varied learning styles learn mathematics differently. Similar studies, such as one conducted by Mokmin and Masood (2015), found that students whose learning preferences were accommodated had higher average scores in mathematics compared to students whose learning preferences were not. In this study, I recorded observations about individual fourth grade students; how students responded to different activities to determine what learning styles were present in my classroom. Using these observations, I modified my classroom instruction and activities to better suit the learning needs of my students by adding in more activities with visual, auditory, and tactual elements. Through content analysis of field notes, student anecdotes, and students' homework/test scores, I explained a relationship between the Dunn and Dunn (1993) model of learning styles and the way in which my individual students learned mathematics. This study is significant because it demonstrates a correlation between student learning styles and their participation and achievement in mathematics.

Poster Presentation ES P3.8

BRAIN BREAKS AND STUDENT ENGAGEMENT

Jocelyn Vanderwiell and Leah Nillas*
Educational Studies, Illinois Wesleyan University

One of the most difficult jobs a teacher has is finding ways to keep students engaged throughout the entire day. In order to facilitate engagement in the classroom, brain breaks can be integrated into an every day routine. In this study, *brain breaks* refer to short physical activity breaks mostly consisting of aerobic-based dancing or stretching (Fedewa et al., 2015; Camahalan & Ipock, 2015). In this qualitative self-study, I discuss how the implementation of brain breaks can improve student engagement in their learning experience. *Engagement* is characterized by active participation in classroom activities and lessons as well as development of self-awareness of one's needs as a learner. Data was collected through field notes, lesson plans, and classroom observations in a first grade classroom of twenty-six students, four of which had IEPs. My findings support the idea that incorporating brain breaks in the classroom can foster student engagement.