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Ashley Barclay
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Faculty Sponsor: Adrienne Hacker-Daniels
Communication and Rhetorical Studies

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Alyssa Bice
Oral Presentation
Faculty Sponsor: Kallia Wright
Communication and Rhetorical Studies

I-03  The Role of Communication in ACL Recovery
CJ Hanna
Oral Presentation
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Communication and Rhetorical Studies

I-04  Energy Policy Debate
Ye Htet and Joel Cortes
Oral Presentation
Faculty Sponsor: Shawna Merrill
Communication and Rhetorical Studies

I-05  “The Medium is the Message” - Reading the New York Times From a Liberal Arts Perspective: A History of Whistleblowing
Abby Isham
Oral Presentation
Faculty Sponsor: Adrienne Hacker-Daniels
Communication and Rhetorical Studies

I-06  Oral Interpretation Panel
Donna Jenkins, Tyra Johnson, and Ar’Mand Erving
Oral Presentation
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Communication and Rhetorical Studies

I-07  Grief as an Illness: Communicative Support in Improving Outcomes for Those Experiencing Grief
Abbey Keller
Oral Presentation
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I-08  Every 19 Seconds: The Effects of Health Communication in Breast Cancer Patients
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I-11  Literary and Artistic Representations of Western and Non-Western Violence on the Cook Voyages
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English

I-12  Disability Rights are Human Rights: EN 430 Senior Seminar Presentations on Disability in Literature
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Faculty Sponsor: Kara Dorris
English

I-13  A Comparison of American Folk Music and Western European Art Music from 1830 - 1870
Abby Garrett
Oral Presentation
Faculty Sponsor: Nichol DelGiorno
Music

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Noe Cornejo
Oral Presentation
Faculty Sponsor: Nancy Taylor Porter
Theatre

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Mason Durdel
Oral Presentation
Faculty Sponsor: Aasne Daniels
Theatre
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Willem Kline  
Oral Presentation  
Faculty Sponsor: Aasne Daniels  
Theatre

I-17  Theatre Senior Showcase  
Jessica Korbel  
Oral Presentation  
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I-18  Theatre Senior Showcase  
Lauren Mulacek  
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I-19  Southeastern Theatre Conference - Convention Workshops in Tech & Acting  
Jordan Hall-Streater and Lauren Mulacek  
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World Languages and Cultures

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World Languages and Cultures

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Cynthia Sanchez  
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World Languages and Cultures

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Emily Benca, Andre Hester, Michael LaRusso, and Alexis Watson  
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World Languages and Cultures

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World Languages and Cultures

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Susana Gonzalez, Anthony Hand, and Aurhianna Sandefur  
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World Languages and Cultures
THE EXPANDED MOMENT

The Expanded Moment is defined as “slowing down to expand a moment [that] can stretch out tension.” Instead of speeding past a moment, artists often emphasize it by expanding the action. It is about being slowed down and looking at a frame by frame picture of a captured event.

For this project, the students were asked to find and film an “expanded moment.” Their moment is taking place in their new “normal” day to day lives. These times are personal, yet unrevealing about living in a new profound society; but easily presented as a story. This is a time where we all are discovering something new about ourselves. We are now faced with the question: will we continue with the same thoughts of life and ourselves? If not, what will we see?

ARTISTS:

Gina Taylor
Maddie Schoenfeld
Rebecca Ring
Jalen Ash
Montana Gilbert
Ashlynn Hagg
Grace Zachary
Devin Tynan
Ariel Rhoades
James Pressey
Kelisy Grob
Raul Rubalcava
Kenzie Prewitt
Nancy Cisneros
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<td>Anthony Hand</td>
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<td>An update on research in the Florida Panther National Wildlife Refuge aimed at long-term conservation of epiphytic orchids</td>
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<td>Larry Zettler</td>
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<td>Laura Corey</td>
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<td>Madison Niederer, Omar Urquiza, Ye Htet, Jonah Pattie, Son Diep, and Adam Lee</td>
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<td>Caitlin Vasquez-O’Brien</td>
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<td>II-08</td>
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<td>Caitlin Vasquez-O’Brien</td>
<td>Psychology</td>
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<td>II-09</td>
<td>Disrupting the corneal stroma through collagenase treatment and its effect on lens regeneration in post-metamorphic Xenopus laevis.</td>
<td>Lindsay Alewelt</td>
<td>Paul Hamilton</td>
<td>Biology</td>
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<td>Development and Sexual Dimorphism of the Human External Occipital Protuberance</td>
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Chemistry

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Lindsay Bruce
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Faculty Sponsor: Jocelyn Lanorio
Chemistry

II-17 Ruthenium(II)-catalyzed transfer hydrogenation of 1-phenylalcohol
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Chemistry

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Chemistry

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Alexis Coffey and Lydia Fuchs
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Psychology

II-20 The well-chaperoned extracellular vesicle: their presence in neuropathologies
Brooke Metzger
Poster
Faculty Sponsor: Jeremy Turner
Psychology

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Poster
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Psychology
III-01  An Economic Evaluation of the National Park Service  
Molly Gearin  
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Faculty Sponsor: T.J. Devine  
Economics

III-02  Harvesting Jacksonville’s History  
Abby Garrett, Stacy Bile, Ibrahim Kamal, Nely Muñoz  
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Faculty Sponsor: Samantha Sauer and Jenny Barker-Devine  
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III-03  Mathematical Analysis of Ranked Preference Voting  
Caden Beddingfield  
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Political Science

III-04  What’s In A Name?  
Grace Vestal  
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Sociology
ORAL PRESENTATIONS

COMMUNICATION AND RHETORICAL STUDIES

Ashley Barclay
Faculty Sponsor: Adrienne Hacker-Daniels

A typical individual wanting to know what is going on in the world of politics uses the internet as a primary source for gaining knowledge about current topics. The internet includes a variety of media outlets with an abundance of information. But some internet sources tend to falsify information about political leaders to influence individual or group political decisions. Most false information on the internet can wreak political havoc and sometimes lead citizens to make very poor choices. This presentation further discusses how false news, also known as “fake news,” can jeopardize a political leader’s career, campaign, and or reputation. Facebook and Twitter have been particularly susceptible to the dissemination of false news. This presentation explores two cases, one having had, and one potentially having serious, even dire consequences. One case involves the conspiracy theory of Hillary Clinton running a sex trafficking scheme circulating the internet. The second case involves the false information disseminated about the Coronavirus. This presentation offers some solutions for navigating these problems within the legal and regulatory realms.

I-02  How Effective Communication Affects Experiences with Arthritis
Alyssa Bice
Faculty Sponsor: Kallia Wright

Arthritis is a disease that can plague anyone regardless of sex, age, or race -- arthritis does not discriminate. One in five US Americans will or does suffer from a form of arthritis in their lifetime (Wiet, Boyle, & Bass, 2019). In this presentation, evidence is provided via qualitative interviews with two individuals and their first-hand experience with arthritis. Their responses revealed that although arthritis may not be seen as a “serious” disease, there is still a need for social support and accommodations in the individuals’ daily lives. Their reflections aligned with previous research that showed 80% of individuals with arthritis have some degree of difficulty with their mobility, and 20% include completing ADLs (activities of daily living)(Wiet, Boyle, & Bass, 2019). The second level of analysis used to understand the findings is understanding and acting outpatient empowerment. The interviewees showed that understanding how to represent yourself in front of your physician you can better improve your discussion of accommodations. This may lead to positive social support that individuals need when struggling with a disease. This paper presentation analyzes concepts about how to effectively communicate about one’s arthritis physically, emotionally, and socially.

I-03  The Role of Communication in ACL Recovery
CJ Hanna
Faculty Sponsor: Kallia Wright

Muscular injuries are a common phenomenon at all levels of athletic participation. With hundreds of thousands of diagnosed cases in the United States per year, anterior cruciate ligament tears (ACL) occur at a high rate in sports for such a terrible injury. Because of this, the focus of my case study revolved around the experiences of two division three athletes who suffered from different degrees of ACL tears during and before their time at Illinois College. To understand not only the physical damage, but the effects the injury had on their mental health and social wellbeing, I conducted qualitative interviews and found common themes between the two cases. Both participants demonstrated the importance of having a strong social support network, which gave them the mental strength they needed to push through a grueling recovery process. Additionally, physical maturity is a common argument. Finally, education and prevention are a key aspect for reducing ACL injuries. These themes were analyzed further with academic research. To further analyze the themes I applied a health communication concept, patient identity, which illustrated the impact the injuries had on the social support and attitudes toward themselves. This presentation focuses on ACL tears, the toll on the injured, and the importance of social support on these patients.
I-04  Energy Policy Debate
Ye Htet, Joel Cortes
Faculty Sponsor: Shawna Merrill

Successful democracies thrive via robust debate and deliberation over policy decisions. One of the most pressing issues of our generation is that of climate change, and members of the Debate & Speech team have thoroughly researched various energy policies. Throughout the 2019-2020 academic year, the National Forensic Association Lincoln-Douglas debate resolution has been as follows: “Resolved: The United States federal government should implement an energy policy that substantially increases investments in one or more of the following domestic energy sectors: nuclear, hydroelectric, geothermal, wind, solar.” Engaging in a 1-on-1 policy debate format, two students debate the merits and drawbacks of a real congressional energy bill. Using evidence, argumentation, and other persuasive skills, this debate reveals the challenges inherent in large-scale decision making and sheds light on critical issues of our time.

I-05  “The Medium is the Message” - Reading the New York Times from a Liberal Arts Perspective: A History of Whistleblowing
Abby Isham
Faculty Supervisor: Adrienne Hacker-Daniels

The term “whistleblower” has frequently been featured in political news stories. The American Heritage Dictionary defines “whistleblower” as “one who reveals wrongdoing within an organization to the public or those in positions of authority.” Americans have been using this word more and more, especially with regards to Trump’s impeachment hearings and subsequent trial. However, the term whistleblowing gained notoriety within the political realm in the 1970s due to Nixon’s Watergate scandal. This presentation traces the development of whistleblowing as integral to accountability and oversight in a democracy. Some whistleblowers have been deemed treasonous while others are regarded as heroes. The most influential instances of whistleblowing are examined, beginning with Daniel Ellsberg and ending with the warning by the anonymous whistleblowers which precipitated Trump’s impeachment. The legal and ethical ramifications of the whistleblowing act are explored as well.

I-06  Oral Interpretation Panel
Donna Jenkins, Tyra Johnson, and Ar’Mand Erving
Faculty Sponsor: Shawna Merrill

According to the Northern California Forensics Association, “Oral Interpretation is the process by which words are pulled from the page and given dimension in a reader’s voice and body. Practitioners of oral interpretation bring stories to life, serving as a vehicle for the messages of the text.” This extended session will feature three performances from members of the Debate & Speech team showcasing their oral interpretation events. In these performances, students select pieces of literature on relevant topics to perform within the context of an argument. Each event utilizes an introduction – a brief “break” from the performance where the student provides their own analysis – to craft their argument. Rather than utilizing facts and figures, this type of persuasion appeals to the natural storyteller in each human. “[S]tudents’ ability to identify and understand a range of possible emotional reactions to life situations that they have experienced only through a performance allows them to better “understand themselves, others, and the world around them” (Littlefield et al., 2001)” (Young, Henry, & Koch, 2017). Providing insight into complex issues like domestic violence, sexual assault, and grief, students engage in powerful perspective-taking.

I-07  Grief as an Illness: Communicative Support in Improving Outcomes for Those Experiencing Grief
Abbey Keller
Faculty Sponsor: Kallia Wright

Whether or not grief is an illness has been the topic of much discussion among psychologists and health officials alike. Up to ½ of people in the United States affected by the loss of a loved one will experience adverse effects to their overall health (Parkes, 1998). This qualitative study focused on the interviews of two people who experienced the same loss but experienced grief in vastly different ways. The findings revealed that both interviewees experienced some loss of identity and had their roles changed. However, both interviewees also found means of social support from people in their lives. To further analyze these findings, I connected the results with prior research on grief communication. As with prior research, the two grievers felt like they were missing something or were lost as they dealt with the pain of loss, and while grieving, changed their identity to fit with their new realities (Neimeyer, Klass, & Dennis, 2014). I conducted a second level of analysis by applying a health communication concept called the internal locus of control. A person will act on what they can control in difficult circumstances and both interviewees ended up doing this but in different ways. In this presentation I provide commentary on grief as an illness and how to provide communicative support to those going through the grieving process.

I-08  Every 19 Seconds: The Effects of Health Communication in Breast Cancer Patients
Grace Moore
Faculty Sponsor: Kallia Wright

I conducted a study on how communication affects those who have been diagnosed with breast cancer. Every 19 seconds someone is diagnosed, and the U.S. estimated in 2019 that 331,530 women and 2,670 men were diagnosed, and 41,760 women and 500 men died
I conducted qualitative research, interviewing two women who were diagnosed with breast cancer. After interviewing the women, I discovered the themes of doctor-patient communication and social support. The women noted that good doctor-patient communication gave them faith in the doctors, while social support made the journey more bearable. To further analyze the themes, I connected them with prior communication research conducted over a period of time. One of these connections found that effective communication between a doctor and patient helps patients trust their doctors more. The health communication concept I applied to further analyze the responses was personal identity. The women showed their personal identities through positive doctor-patient communication and social support they received during their journey. This paper presentation focuses on how doctor-patient communication and social support influenced the interviewed women during their journeys with breast cancer.

**I-09 Confederate Survival Strategies: Rhetorically ‘Re-constructing’ Reconstruction through the Pedagogy and Ideology of the New South**

**Sergio Pena**  
*Faculty Sponsor: Chris Oldenburg*

Nearly 154 years after the end of the American Civil War, furor for Confederate Lost Cause ideology persists and thrives among the memory of those who embrace their “Confederate heritage.” The decimation and desecration of the former Confederate States of America during the Civil War, and the ineffectiveness of the Reconstruction era left the region in need of a cultural and ideological revival. The era following Reconstruction in the region, known as the New South (1877-1929), was the ideal breeding ground for a unifying ideology to disperse across the region, and form an identity for Southerners to embrace, as well as make sense of the loss they experienced. The pedagogical and rhetorical tools used during the New South purposely created hegemony in thought and culture among the South. This paper studies how ideology post-Civil War was developed and preserved, and how it persists today by analyzing its cultural manifestations and machinations through different rhetorical artifacts.

**ENGLISH**

**I-10 Oceanic Music: How European Encounter in the Pacific Influenced the Popular Narratives Surrounding Indigenous Music**

**Jessamy Hintz**  
*Faculty Sponsor: Kacie Wills*

Oceanic music refers to the musical traditions of the indigenous people in Oceania, particularly in Polynesia, New Zealand, Australia, and other neighboring communities. During the late eighteenth- and early nineteenth-centuries, Europeans encountered and exchanged music in Oceania as part of a larger encounter/exchange of material culture. Through highlighting aspects of my Omeka digital collection, *Oceanic Music: How European Encounter in the Pacific Influenced the Popular Narratives Surrounding Indigenous Music*, I show how the literary and material culture produced in response to the Cook voyages illustrates the voyages’ impact on historical and contemporary reactions to indigenous culture in the Pacific, specifically Oceanic music. This presentation explores how the Pacific encounters led to reenactments of music that hold misrepresentations of authenticity and ultimately reimagine history. I argue how, even today, Pacific cultures and their music continue to be interpreted and assimilated, as in the recent Disney film, *Moana*. Through facts, narratives, and objects, multiple stories of Oceanic music are displayed to give a voice to those who have been silenced by history.

**I-11 Literary and Artistic Representations of Western and Non-Western Violence on the Cook Voyages**

**Ayden Thomas**  
*Faculty Sponsor: Kacie Wills*

While it valued rational thought, Enlightenment Europe upheld literature and art that communicated violent colonialist ideals. Literary and artistic depictions of the violence surrounding exploration made their way into popular imagination; these portrayals used the violent encounters of the voyages of Captain James Cook (1768-1779) to introduce Cook as a symbol of heroic civilization and Pacific Islanders as symbols of barbarism. Through an online exhibit, https://aydenthomas.omeka.net/exhibits, I analyze the fictional work *The Travels of Hildebrand Bowman* (1778) alongside works of art connected to the Cook voyages. My presentation, drawing from original archival research, will examine this relatively unknown literary work and establish its significance in the narrative of violent colonialism. My exhibit uses paintings as supplementary resources to create a deeper understanding of the text and the culture surrounding it. By presenting my research on an online platform, I combine visual and textual elements to comment on the conflicting ideals presented in Enlightenment literature and to make *The Travels of Hildebrand Bowman* and the events of the “Grass Cove Incident” accessible to a wider audience. Through my digital exhibit, I illustrate in a more meaningful way the means by which British popular imagination vilified Pacific Islander culture in the eighteenth century.
Disability Rights are Human Rights: EN 430 Senior Seminar Presentation on Disability in Literature
Simone Williams, Alexis Watson, Katelyn Hodgson, and Adrializ Acevedo
Faculty Sponsor: Kara Dorris

In EN 430, senior English majors researched and prepared conference-style papers revolving around aspects of disability in literature and in our culture today. For this Celebration of Excellence panel, 4 students present their papers and show the need for more disability awareness in and out of the classroom. Disability is a complicated and multifaceted subject; throughout history, societies have judged disabled individuals as different, as other, infringing on their civil and human rights. Historian Paul K. Longmore points out that since the ADA (American with Disabilities Act) was passed in 1990, our society is still struggling to create a disability culture, a culture of “alternate values,” that stems from disabled individuals themselves, a culture that prizes “self-determination” over “self-sufficiency,” “interdependence” over “independence,” “personal connection” over “functional separateness,” and “human community” over “physical autonomy.”

MUSIC

A Comparison of American Folk Music and Western European Art Music from 1830-1870
Abby Garrett
Faculty Sponsor: Nichol DelGiorno

The 1830s to 1870s, sometimes referred to as the Romantic era, was a time of drastic change throughout the world. Changes in societal and cultural values in the West, such as westward expansion in the US, creation and popularization of railroads, and the abolition of slavery in both the US and Europe, were not only depicted through art and literature, but also through music. Instrumental and symphonic music remained popular in Western Europe, but America sought to create its own unique sound, resulting in what we today call American Folk music. Three different characteristics, emphasizing nature, creating a sense of national identity, and storytelling with a main central theme, are present in music from both the Western European Art and American Folk music traditions from this time period. Through the use of several examples from both genres, this presentation will demonstrate how these musical styles include the common ideologies of the period.

THEATRE

THEATRE SENIOR SHOWCASE
The purpose of the Theatre Senior Showcase is to exhibit the strength and range of the student’s skills in their chosen area as well as their ability to articulate various techniques they have learned and applied that have helped them reach this level of achievement. It is intended to prepare them for the professional world of audition and performance

Theatre Senior Showcase
Noe Cornejo
Faculty Sponsor: Nancy Taylor Porter

Theatre Senior Showcase
Mason Durdel
Faculty Sponsor: Aasne Daniels

Theatre Senior Showcase
Willem Kline
Faculty Sponsor: Aasne Daniels

Theatre Senior Showcase
Jessica Korbel
Faculty Sponsor: Aasne Daniels

Theatre Senior Showcase
Lauren Mulacek
Faculty Sponsor: Aasne Daniels
Southeastern Theatre Conference - Convention Workshops in Tech & Acting
Jordan Hall-Streater and Lauren Mulacek
Faculty Sponsor: Craig Steenerson

Lighting is one of the most important elements in theatre. The primary role of this design element is to provide the stage with illumination. The lighting designer assists in the evocation of emotions through the use of colors, textures and other effects with lights. Through the design, the lighting for a production can amplify other design elements such as costumes, props and the set. In the performing arts there are several styles of theatre such as dance, plays, musicals and operas. These different styles all provide the stage with illumination but their methods are drastically different from one another. At the Southeastern Theatre Conference, Jordan Hall-Streater attended several workshops focused on the methods used to design these different styles of theatre. With these styles the use of innovative technology and equipment can introduce new methods in the designing process.

At SETC Lauren Mulacek was able to attend several workshops regarding acting and directing. This opportunity allowed for Lauren to try and seek out workshops pertaining to information that is not offered within the Department of Theatre at IC. Some of these included acting for the camera, musical improvisation, directing in the round, singing and the Alexander technique, how to market yourself as a professional actor, talking cold readings, and much more. She even had the opportunity to work one on one with trained professionals on perfecting one of her audition cuts for a song that she ended up using to prepare for a local audition. In my part of the presentation Lauren plans to cover the information she learned as well as some of the valuable skills she gained at this conference. Lauren would like to demonstrate some of these techniques and skills as well as some of the exercises she learned in these workshops.

WORLD LANGUAGES AND CULTURES

How to Save the World
Charlotte Crofton
Faculty Sponsor: Bernd Estabrook

The world is a polarized place and people struggle to communicate. At this time, there are increasing difficulties in communicating with people and in standing firm in how we communicate with people and how we perceive each other. This turmoil is not unknown to the history of humanity. There have been numerous times in which people fail to see other people as human beings. Such times include displacement of indigenous people, World War II, and the Civil Rights Movement. These times demonstrate a failure in humanity that has led people to wonder if the world can be saved, or if there are people to save the world. Through an examination of the words of Dietrich Bonhoeffer during the second world war, the answer for saving the world can be found. Bonhoeffer’s purpose and inspired writing demonstrate the duty we owe to all people and the broad perspective we should all try to maintain in our daily interactions. Bonhoeffer’s words of social duty and responsibility are most applicable to the current state of humanity while in the midst of the outbreak of the coronavirus. Bonhoeffer’s writings, specifically Gott als Vormund?, Gefährdung und Tod, and Das Ende der Religion, demonstrate the social duty and responsibility we have to those around us, specifically in the context of the outbreak of the coronavirus in the United States. His views establish the truth to how we should carry ourselves and how we may be able to save the world.

Qualitative Comparison of Rural Healthcare in the United States of America, Ecuador, and Cuba
Anthony Hand
Faculty Sponsor: Steven Gardner

Nations around the world struggle to determine how to manage rural healthcare. This study compares the accessibility of rural health care in the USA, Ecuador, and Cuba to discover common themes and solutions to universal problems. For the purposes of this study in the United States, personal observations and interviews were conducted in rural clinics around Jacksonville, Illinois. In Ecuador, formal interviews were conducted over a three-week period with patients, nurses, and physicians in a small, public rural clinic near Cuenca, Ecuador. In Cuba the functionality of the healthcare system was examined in Pinar del Rio. Interview questions were focused on overall accessibility of healthcare in these countries. It was found that all areas struggle with lack of access to equipment. While healthcare costs in the United States are high, Cuba and Ecuador both provide public healthcare free of cost. However, Cuba is only able to provide universal access through underpaying doctors and strictly controlling its people’s behavior. In Cuba and Ecuador, government regulation has helped to produce greater access. And people generally have expressed satisfaction with the system. However, even in these systems there are important deficiencies and challenges to overcome regarding providing access to quality healthcare.

The US-Cuba relations through Fernando Ortiz’s work: Research on Literature and Anthropology
Nely Muñoz
Faculty Sponsor: Diana Grullón-García

Doing research as an undergraduate student lays the foundation for the development of critical thinking. This work focuses on how this critical process is seen both in literature and in anthropology. In particular, I analyze the relationship between the United States and Cuba through the
writing of the Cuban essayist and anthropologist, Fernando Ortiz. Ortiz’s famous essay called Cuban Counterpoint: tobacco and sugar, as well as unpublished letters and other articles served as secondary texts of importance for the understanding of Cuban culture and the transculturation process that occurs in Cuba. The term “transculturation” is of interest in the analysis of the relationship between the United States and Cuba given the link between Ortiz and the American anthropologist, Melville Herskovits. This concept seeks to accurately describe the process of contacts between various cultures and the creation of new cultural identities. As a student of international studies and business administration, I show how the study of culture and literature is important to address issues related to cultural diversity and undertake international business projects with critical foundations in literary research to understand historical and cultural contexts in different places from your own.

I-23 The Perverse Cycle of Depopulation in Puerto Rico
Cynthia Sanchez
Faculty Sponsor: Diana Grullón-García

Recent data on the population of Puerto Rico demonstrates a significant decrease, and the nation is projected to have fewer inhabitants on the island in the years to come. These studies have not emphasized how the US’s role in Puerto Rico’s politics and economy has been deteriorating the nation, leading it to its potential downfall. My paper addresses the issue of depopulation since the removal of Section 936 in Puerto Rico while paying attention to the economic crisis and its political influence coming from the US. I will be looking at the history of Puerto Rico’s economy since the US’s invasion but focusing on legislation and events after 2006. I will also bring up how its current colonial status hinders economic development, which has led to a decrease in population and, therefore, worsens the economic crisis. I argue that the loss of population in Puerto Rico is due to their current status as a territory of the US because legislation passed by the mainland has affected their economy and led to an uncontrollable public debt. In conclusion, this project, by closely examining the recent waves of migration in Puerto Rico, sheds new light on how the US’s influence on the island has not been for the economic benefit and welfare of its citizens but rather the US itself.

POSTERS

WORLD LANGUAGES AND CULTURES

UNDERSTANDING A “FOREIGN PERSPECTIVE”: EXPERIENCING THE LENS OF THE “OTHER” THROUGH STUDY ABROAD
In the course IS 204, Integrating Cross-Cultural Experiences, one important aspect for students who studied abroad is subsequently to incorporate perspectives gained into their life and academic work back at Illinois College. This Spring, students who had been abroad last Fall chose following three topics to present on posters to the IC community:

I-24 Understanding a “Foreign Perspective”:
Experiencing the Lens of the “Other” through Study Abroad: Diet and Environment
Emily Benca, Andre Hester, Michael LaRusso, and Alexis Watson
Faculty Sponsor: Steven Gardner

In this poster, the diet and the environment of Scotland, Northern Ireland, Germany, and South Africa are explored with comparisons made between them and with the United States. The results vary by country and serve to provide perspectives on global climate change, food, and the environment that we can compare to those that dominate in the United States. We have found that in general, the food in the countries where we studied was of better quality and healthier than what we have generally eaten in the United States. As for the environment, the European Union’s overarching policies take global warming seriously and provide stricter measures to combat it, while we see that the United States’ response is inadequate. South Africa, on the other hand, is the frontlines of climate change, as a severe drought has affected the diet and overall health of the impoverished sectors of the population.

I-25 Understanding a “Foreign Perspective”:
Experiencing the Lens of the “Other” through Study Abroad: Education, Funding, and Access
Susana Gonzalez, Anthony Hand, and Aurhianna Sandefur
Faculty Sponsor: Steven Gardner

Despite its universal importance, education is not uniform across cultures. Differences may exist in pedagogy, funding levels, and structure. Examining the education systems of Ecuador, France, and Puerto Rico provides Americans with refreshing ideas and perspectives that open the mind to possibilities of different systems that are equal or better in quality to their own. Being open to other concepts in education is integral to an understanding that might lead to solutions to domestic problems in education. Thus, this poster evaluates foreign approaches to such aspects of education as specialization, structure, and funding in order to challenge assumptions of American students.
Understanding a “Foreign Perspective”:
Experiencing the Lens of the “Other” through Study Abroad: Political Involvement
Stacy Bile, Lucas Motley, Hateeyat Salifu, and Cynthia Sanchez
Faculty Sponsor: Steven Gardner

In this poster, we examine and compare attitudes toward political efficacy. By using examples such as Brexit and the yellow vest protest, we analyze and compare the citizens’ faith and trust in government and their belief that they can understand and influence political affairs. This poster focuses on the differences and similarities of political involvement in France, Puerto Rico, and Northern Ireland, helping the audience gain a better understanding of important issues in these countries and of the ways their citizens engage with the government to deal with them.
ORAL PRESENTATIONS

BIOLOGY

II-01  Seed germination of the rare Cigar Orchid (*Cyrtopodium punctatum* (L.) Lindley) in vitro
*Sylvester Benson and Fegor Imiye*
*Faculty Sponsor: Lawrence W. Zettler*

Once common and widespread in southern Florida, the Cigar Orchid, *Cyrtopodium punctatum*, is now regarded as one of the rarest orchids in that state with fewer than two dozen plants thought to remain in the wild. This species is typically found attached to large bald cypress trees (*Taxodium distichum*) as a massive epiphyte. The decline of this species began during the 1940s when large numbers of orchids were destroyed by logging practices. At maturity, large individuals produce 500 yellow-orange fragrant flowers pollinated by bees. Recent studies have also revealed that the natural bee pollinator may be extinct which could account for the decline in the orchid’s reproduction through seed set. The purpose of this study was to develop a protocol for growing the Cigar Orchid from seed in the laboratory on sugar-based agar media (P732) in a process known as ‘asymbiotic germination.’ In addition, we also inoculated seeds with a fungus (*Tulasnella sp.* ) on an oat-based agar medium (= symbiotic germination) that has shown promise in previous studies for its ability to germinate seeds more rapidly than sugar-based agar media. To date, seeds sown on asymbiotic media have germinated into seedlings whereas the majority of seeds inoculated with the fungus failed to germinate.

II-02  Using Transgenesis to Investigate the Role of Wnt Signaling During Lens Regeneration
*Anthony Hand*
*Faculty Sponsor: Paul Hamilton*

*Xenopus laevis* tadpoles have a unique ability to regenerate the lens after it has been removed from the eye. Remarkably, this is a form of *de novo* regeneration, indicating that the lens is not being regenerated from pre-existing lens cells. A previous study has shown that the level of Wnt signaling must decrease in order for regeneration to occur; however, it remains unclear if Wnt signaling must be inhibited in the neural retina or the cornea epithelium. Both tissues are required in order for a lens to regenerate, presenting an experimental challenge to investigate their unique roles. To solve this issue, transgenic tadpoles expressing a constitutively active form of beta-catenin were successfully generated for reciprocal transplants of wild-type and transgenic cornea and retina tissue. However, this construct had a “leaky” promoter resulting in unregulated expression, and it was unusable. We are now creating an alternative construct that will help to directly visualize levels of Wnt signaling.

II-03  An update on research in the Florida Panther National Wildlife Refuge aimed at long-term conservation of epiphytic orchids
*Michael LaRusso and Jiaqi Lu*
*Faculty Sponsor: Lawrence W. Zettler*

For nearly two decades, Illinois College students have traveled to field sites in Florida where they have studied wild orchids in their natural habitat. One site in particular – the Florida Panther National Wildlife Refuge (FPNWR) – continues to serve as an important location for ongoing studies involving the famous Ghost Orchid (*Dendrophylax lindenii*) and other epiphytic species threatened with extinction. Last summer (July 2019), we continued yearly field surveys of the Ghost Orchid in the FPNWR that initially began in 2015. In addition to presenting a summary of last year’s data, we will provide preliminary results of a new study designed to determine whether more epiphytic orchids colonize branches of Pop Ash (*Fraxinus caroliniana*) versus Pond Apple (*Annona glabra*). The impetus for the new study was prompted by the spread of the invasive Emerald Ash Tree Borer – an exotic beetle known for rapidly destroying *Fraxinus* species throughout North America. Currently, this beetle has been reported in central Georgia and is moving south. Should it reach orchid-rich southern Florida, there is a serious concern that *F. caroliniana* and its associated epiphytic orchids would vanish in the next decade.

II-04  The effect of *Plantago asiatica* Linné seed crude fractions on the diabetes model ob/ob mouse
*Lauren Leischner*
*Faculty sponsor: Laura Corey*

*Plantago asiatica* (PA) has been commonly used in Japanese traditional medicine to treat urinary disorders and inflammation. In this research, PA was tested for anti-inflammatory effects by nitric oxide (NO) assays and administration to the diabetes model ob/ob mouse. The methanol extract of PA was collected and was found to suppress NO, but showed cytotoxicity at high concentrations in lactate dehydrogenase assays. Three crude fractions of the methanol extract were obtained by hydrophobicity and administered to diabetes model mouse ob/ob mouse for
one week in standard feed at a concentration of 1%. The n-butanal soluble fraction B of PA lowered ob/ob mouse weight as well as lowered the perirenal adipose tissue weight. The pancreas weight of all fractions was decreased, but the blood glucose level did not significantly change. Diaion column chromatography was performed on fraction B and acetoside, known for its anti-inflammatory effects, was found in fraction B. These preliminary data point toward crude fraction B of PA potentially having positive effects in vivo.

**COMPUTER SCIENCE**

II-05  
**Development of a Generic Educational Advising Framework for Facilitating Students, Faculty, and Staff to Coordinate Study Plans**  
Madison Niederer, Omar Urquiza, Ye Htet, Jonah Pattie, Son Diep, and Adam Lee  
*Faculty Sponsor: Zheng Huang*

Understanding graduation requirements is essential for college students’ success. However, most college advising systems are hard to understand and make it difficult for students, faculty, and staff to track the student progress. Therefore, we are developing a framework to help students better track the requirement categories, to facilitate faculty advising of students’ with study plans, and to support the staff to follow the graduation status of the students. In order to elicit the requirement of the system and optimize the process of a classical Advisor-Advisee session, we used scenario-based design to interview faculty and students of one midwest university during their academic advising sessions. In this paper, we will demonstrate our system development of this framework, and instruct the users to use our framework.

**PSYCHOLOGY**

II-06  
**How Cleanliness of a Room Effects Generosity, Creativity, and Health Consciousness**  
Emma Chapman  
*Faculty Sponsor: Caitlin Vasquez-O’Brien*

Studies have shown that a clean smell can promote more virtuous behavior (e.g., Liljenquist et al., 2010), but Vohs and colleagues (2013) have shown that participants in a disorderly room are more creative while participants in an organized room are more generous and make healthier choices. The spring Advanced Methods and Statistics in Psychology class expanded upon this work and hypothesized that smell will increase generosity and health but decrease creativity, whereas order will increase generosity and health, but decrease creativity. Furthermore, it was hypothesized that a smell with an orderly room will increase generosity and health, while disorder with a smell will increase creativity. Participants completed a questionnaire measuring generosity and creativity in a controlled, randomly assigned setting in one of four conditions, where the organization of the room (clean vs. messy) and the smell (normal vs. lemon) were manipulated. After the questionnaire, participants were offered either a KitKat bar or an apple. Data from the questionnaire was analyzed using a factorial ANOVA in SPSS. The results demonstrated how the cleanliness of a room (either visual or olfactory) can affect generosity, creativity, and healthy choices.

II-07  
**Why Do I Feel Like a Phony?**  
Charlotte Crofton  
*Faculty Sponsor: Elizabeth Rellinger-Zettler and Caitlin Vasquez-O’Brien*

Imposter syndrome is the phenomenon in which a person feels as if they are an imposter and that they are just moments away from being found out as a fraud (Clance & Imes, 1978). This sense of feeling like a fraud has been documented in many groups including academics (Bothello & Roulet, 2018) and can result in an entirely capable person feeling as though they are incapable. A person dealing with imposter syndrome may utilize various techniques for combating these negative thoughts including establishing a growth mindset, combating fearful thought through reinforcement, and finding a community wherein one can express their concerns or feelings of inadequacy. The role of college honor societies in combatting imposter syndrome by training students in these techniques will be explored in this talk.

II-08  
**The Effects of Eating Habits on Mood**  
McKenzie Motley, Nancy Cisneros, Gianna Hines, and Jillian Powell  
*Faculty Sponsor: Caitlin Vasquez-O’Brien*

Eating habits are a key component in our physical health and well-being. While previous researchers have explored the effects eating habits have on physical health (e.g., Aune et al., 2017), the relationship between the number of fruits and vegetables and feelings of subjective well-being has not been specifically explored. Many individuals consider the daily intake of fruits and vegetables to be part of a healthy lifestyle (Slavin & Lloyd, 2012). However, many past studies regarding fruit and vegetable intake have failed to include questions with examples of accurate portion sizes (Kingsbury et al., 2016; Hoare et al., 2018). This study used a custom fruit and vegetable questionnaire (Thompson et al., 2002; Tasevska et al., 2011) to assess the effects of fruit and vegetable consumption on subjective well-being. We hypothesized that participants that consumed more fruits and vegetables would report greater levels of subjective well-being. We will discuss the findings in light of how the amount of fruit and vegetable servings consumed in a year relates to subjective happiness.
**POSTERS**

**BIOLOGY**

**II-09** Disrupting the corneal stroma through collagenase treatment and its effect on lens regeneration in post-metamorphic *Xenopus laevis*

*Lindsay Alewelt*

*Faculty Sponsor: Paul Hamilton*

*Xenopus laevis* tadpoles possess the ability to regenerate a new lens following its surgical removal (lentectomy), but the post-metamorphic frog lacks the ability to naturally regenerate lens tissue when completely removed. The precise reason this ability is lost remains unclear. Previous studies have demonstrated that the basal cells of the mature cornea epithelium are still able to respond to regenerative signals and express lens-specific proteins when cultured in the presence of the neural retina. These data suggest that the regenerative barrier may be physical rather than chemical, and that the development of the corneal stroma during metamorphosis may contribute to the loss of regenerative ability. In order to disrupt this physical integrity of the stroma, we are working to treat mature corneas with a collagenase enzyme that degrades collagen (a critical component of the corneal stroma) and assess corneas for structural degradation and lens regeneration. Identifying the nature of this regenerative barrier will provide critical insight into restoring this regenerative ability in the post-metamorphic frog cornea, a tissue that is structurally very similar to our own.

**II-10** Development and Sexual Dimorphism of the Human External Occipital Protuberance

*Taylor Halteman*

*Faculty Sponsor: Miranda Karban*

The external occipital protuberance is a defined bony protuberance on the posterior medial occipital squama. This protuberance is commonly argued to be larger and more projecting in males than in females, but little is known about the trait’s ontogenetic patterning. A previous study investigated the development of the trait using a 4-point anthroposcopic scoring system. This study aims to examine the patterning of external occipital protuberance development using more detailed geometric morphometric analyses. Longitudinal growth study cephalograms from 100 subjects (50 females, 50 males) were sampled, with each subject represented at 3 age points (age 1: 11y0m-12y4m, age 2: 13y7m-16y8m, and age 3: 17y11m-21y2m). A total of 3 landmarks and 30 sliding semi-landmarks were digitized along the superficial border of the occipital bone, and relative warp analysis was used to visualize the shape variation in the sample. Shapiro-Wilk and Kruskal-Wallis tests confirmed that the external occipital protuberance was larger and more pronounced in the male subjects than in the females, and the trait was found to become more pronounced with age. The results of this study support the validity of the previously developed scoring system, revealing distinct morphological differences between each of the four anthroposcopic points.

**II-11** Investigating Population Genetics by Using Microsatellite Data Within Illinois and Florida Populations of Evening Bats (*Nycticeius humeralis*)

*Alexa Jardenil and Lauren Leischner*

*Faculty Sponsor: Bryan Arnold*

*Nycticeius humeralis*, the evening bat, is a species that is found throughout the Midwestern and Southeastern United States ranging from the east coast to Nebraska and from southern Michigan into northern Mexico. We investigated population genetics to determine migratory patterns of evening bats by collecting bi-parentally inherited microsatellite loci data to later compare with variable mtDNA control regions. Microsatellite loci and mitochondrial sequences tend to show elevated levels of genetic diversity in different bat species, making them useful for determining differences between different populations of a single species. This information combined with maternally inherited mitochondrial markers can be used to determine the degree of differentiation between maternal colonies within a geographic region and in broad scale differences between widespread populations.

**II-12** Comparison of Cellular Proliferation in Undamaged vs. Damaged Lung Tissue in *Xenopus laevis* Tadpoles

*Anna Rathgeb*

*Faculty Sponsor: Paul Hamilton*

*Xenopus laevis* tadpoles are known for their regenerative capabilities during development prior to metamorphosis. Tissues such as the lens, tail, and limb bud all display regeneration after physical damage, but it remains unclear what other tissue types can respond to damage at a cellular level. Here we are investigating the response to damage in the developing lung. By tracking mitotic activity in a normal, developing lung and in a lung that has been mildly damaged via microsurgery, we can compare rate of proliferation and determine whether there is evidence of a cellular response. The thymidine analog ethynyldeoxyuridine (EdU) can be used to label any replicating cell and its progeny. The nature of EdU
To be dispersed to all daughter cells may be valuable when identifying proliferative response. Alternatively, use of a phospho-histone antibody would label mitotically active cells at the moment of fixation and may be significant in evaluating proliferative response. Ultimately, investigation into various methods of quantifying proliferative cells will allow for comparison between damaged and undamaged lung tissue to determine if developing tadpoles exhibit a proliferative response to lung tissue damage.

II-13  **Human orbit shape as an indicator of developmental age**

**Brenda Ruiz**  
**Faculty Sponsor: Miranda Karban**

The orbit’s function is to support, protect, and maximize the function of the eye. Eye growth directly influences development of the bony orbit, with axial length and equatorial diameter of the orbit increasing with age. Previous literature focuses on the size of the orbit. The purpose of this project was to investigate the relationship between age and orbit shape.

A longitudinal sample of cranial x-rays was collected from 36 subjects (19 female, and 16 males) at 3 different age groups: 8.0-8.9, 13.5-14.2, and 17.0-18.9 years. TPSDig2 software system was used to collect 1 landmark (ectocochion) and 15 semi-landmarks around the outline of each subject’s right orbit. Morphological analysis of variance (ANOVA) was run with R-software to test for sexual dimorphism and age variance between three age groups.

ANOVA results showed that sexual dimorphism was not significant when looking at the shape of the orbit at any of the three sampled age groups. Orbit shape, however, was shown to vary significantly with age. From age groups 1 to 3, the shape seemed to extend upwards towards the medial aspect of the face. Understanding ontogenetic change in orbit shape may be useful in forensic age estimation.

**CHEMISTRY**

II-14  **Synthesis of Indenyl Ruthenium Complexes with Target Ligands (Biologically Important Anticancer Complexes)**

**Akua Biaa Adu**  
**Faculty Sponsor: Jocelyn Lanorio**

Ruthenium complexes have emerged as an attractive anticancer alternative to platinum metal due to their low toxicity, probable different mode of action, and diverse synthetic chemistry. The interest in indenyl (Ind) ligand originates from its resemblance to $\eta^5$-cyclopentadienyl Cp/Cp* ligands. Indenyl ruthenium (IndRu) complexes are known to exhibit reactivity and steric features different from those of the corresponding Cp complexes, but evidence is still lacking or limited. We carried out the synthesis and characterization of a series of indenyl ruthenium complexes. Phosphites were also employed as ligand to some of the IndRu complexes that we synthesized. All prepared complexes were air and moisture stable. Furthermore, IndRu(PPh3)2Cl was found to be an efficient catalyst in the oxidation reaction of 1-phenylalcohol and acetone with higher % conversion and turnover frequency (TOF) than the traditional Ru catalyst, RuCl2(PPh3)3. Future work includes investigation of the catalytic efficiency of all the synthesized IndRu complexes in the chosen redox reaction, and investigation of their DNA-binding and/or antitumor activities.

II-15  **Syntheses and Application of Nickel-Phosphorus Complexes**

**Sunday Bobori**  
**Faculty Sponsor: Jocelyn Lanorio**

Suzuki-Miyaura coupling is a metal-catalyzed carbon-carbon bond reaction between organoboron and halide under basic conditions. Cross-coupling reactions are typically catalyzed by an expensive palladium (Pd) catalyst. Thus, complementary approaches to achieve such coupling are highly sought after. One attractive alternative involves the use of nickel catalysts due to nickel being readily available, less toxic, and cheaper compared to Pd. Nickel catalysis can also be used to form linkages between two heterocyclic fragments producing important classes of compounds that serve as building blocks of pharmaceutical drugs such as antipsychotics, among others.

A series of Ni-phosphorus complexes, NiCl2(DPPE), NiCl2(PPh3)2, NiCl2(BINAP), NiCl2(P(OPh3)2) and NiCl2(P(OEt3)2), were successfully synthesized and characterized. Most of the prepared nickel complexes showed 100% efficiency as catalysts in the chosen Suzuki-Miyaura cross-coupling reaction. However, the Ni-phosphites did not show a complete conversion of the cross-coupling reactants. It is recommended that investigation of the retrievability of the catalysts and determination of the exact action (e.g. % conversion & TOF calculation) of Ni-phosphite complexes in Suzuki-Miyaura reactions be done as future work.
Copper(I)-NHC-hydroxide complex as catalyst for cross-coupling reactions  
Lindsay Bruce  
Faculty Sponsor: Jocelyn Lanorio

N-heterocyclic carbene (NHC)-copper catalysts have received considerable attention in organic synthesis over the last two decades. Despite the popularity of copper complexes containing monodentate NHC ligands and recent development of poly(NHC) systems, their application in C-C and C-heteroatom cross-coupling reactions has been limited. Herein, we report the application of the copper-NHC-hydroxide, Cu(iPr)(OH), complex as catalyst for two different “green” cross-coupling reactions under atmospheric conditions in relatively short reaction time. Our system was designed and comprised of heterocyclic substrates, an alcohol solvent, and an internal standard for the quantitation of turnover frequency (TOF) of the Cu(iPr)(OH) catalysis reactions. The formation of the desired products, 5-(furan-3-yl)pyrimidine and 5-(2-methoxypyridin-3-yl)pyrimidine, were observed and their % conversion determined by 1H NMR spectroscopy.

Ruthenium(II)-catalyzed transfer hydrogenation of 1-phenylalcohol  
Sara Deddo and Jionna Harmon  
Faculty Sponsor: Jocelyn Lanorio

Catalytic transfer hydrogenation (CTH) is an efficient method for the conversion of unsaturated organic molecules into valuable products. Typically, a hydrogen donor such as alcohol is used as a convenient reducing agent and is oxidized to its corresponding ketone. Ruthenium, rhodium and iridium metal complexes have been reported for CTH.

We used a series of cyclopentadienyl ruthenium(II) complexes as catalysts in the transfer hydrogenation reaction of 1-phenylalcohol. Acetone is utilized both as a solvent and a hydrogen acceptor, Scheme 1. It was found out that one of the complexes synthesized, CpRu(PPh3)2Cl, acts as a highly efficient catalyst in different conditions. The % conversion and catalyst activity in one-hour reaction time for CpRu(PPh3)2Cl was determined to be 39.3% and 53 turnovers/h (TOF), respectively. All the synthesized compounds are air and moisture stable allowing reactions to be run in a simple vial and oil-bath set-up, without the need of the Schlenk technique.

Synthesis and Characterization of Imidazolium Ionic Liquids  
Sirikarn Phuangthong  
Faculty Sponsor: Jocelyn Lanorio

Ionic liquid is defined as molten salt. Its properties such as being non-volatile, non-flammable, and non-combustible makes it a promising alternative for volatile organic solvents. There are currently several reactions that use ionic liquid as solvent. Furthermore, because of its high thermal stability and low solubility in water and polar organic solvents, ionic liquid can be recycled and reused, making it more environmentally friendly and promoting green chemistry.

We carried out the synthesis and characterization of a series of ionic liquids based off imidazole. Preliminary use of [bmim]Br ionic liquid in a Suzuki-Miyaura cross-coupling reaction proved to be successful, particularly when with polar NiCl2(PR3)2 catalyst. Future work involves investigation of imidazolium ionic liquids as catalysts and optimization of conditions for their use as solvent and/or catalyst in Suzuki-Miyaura cross-coupling reactions.

PSYCHOLOGY  

Why the Gate Gets Closed: The Relation between Parental Depression and Gatekeeping Behaviors  
Alexis Coffey and Lydia Fuchs  
Faculty Sponsor: Caitlin Vasquez-O’Brien and Elizabeth Rellinger-Zeltler

Parental gatekeeping, complex behavioral interactions between parents in which one (typically mother) influences the parenting behaviors of the other through their use of controlling, facilitative, and restrictive behavior (Puhlman & Pasley, 2013), may increase depression (Cicolla & Luthar, 2019) or may itself be a result of poorer psychological functioning (Schoppe-Sullivan et al., 2015). Relations to positive personality (PP) are unknown. In a longitudinal study of N=145 parents (95% female), we tested competing models, with T1 depression (CES-D) and PP (self-report hope, optimism, self-compassion) as predictors of T2 (2.5 years later) gatekeeping (Van Egeren, 2002) and with T2 gatekeeping as an outcome or a predictor of T2 depression, to further unravel temporal precedence.

Controlling for partnership status (married/partnered vs. separated/divorced/single), sex, and socioeconomic status, the best fitting model indicated that T1 PP and T2 depression predicted T2 gatekeeping: t(77) = -2.06, p = .04; t(77) = 2.49, p = .02, accounting for 35% of the variance in T2 gatekeeping. It may be that gatekeeping is predicted by earlier positivity and is enmeshed with current depression.
The well-chaperoned extracellular vesicle: their presence in neuropathologies
Brooke Metzger
Faculty Sponsor: Jeremy Turner

Heat shock proteins (HSPs) function as chaperones under both normal and pathologic conditions. As chaperones they assist in protein folding, in holding protein complexes for current or future activation, and in degradation of senescent proteins for recycling of components and display for immune surveillance. During stressful situations, HSP quantities and/or activities increase as cells and tissues seek protection from insults. These insults can result in the cell surface display of HSPs, which can then lead to the surface display of HSPs on extracellular vesicles (EVs). HSPs present on the cell surface or in the extracellular space are regarded as “danger signals” in an ancient biologic paradigm. HSP-accessorized EVs may act as “danger boli”, carrying not only the HSPs, but hundreds of components of the stressed parental cell, capable of prompting differential responses depending on the status of the recipient cell.

Mindfulness and Stress/Anxiety
Kendra Ostermeier, Olivia Frichtl, Greg Saiki, and Brianna Smith
Faculty Sponsor: Caitlin Vasquez-O’Brien

To investigate mindfulness as a stress and anxiety reduction intervention, self-reported stress and anxiety in a 4-week mindfulness intervention group were compared to a 4-week active control group. The participants included students recruited from various Illinois College courses. All participants were given pre and post tests on self-reported stress and anxiety, using the Perceived Stress Scale (PSS-10; Cohen, Kamarck & Mermelstein, 1983) and Beck’s Anxiety Inventory (Creamer, Foran, & Bell, 1995). The experimental group watched a weekly 30-minute guided meditation video session and the active control watched 30 minutes of a children’s cartoon. Stress and anxiety pre-tests and post-tests were compared to see how the groups’ manipulation comparatively influenced measures. It was hypothesized that there would be a reduction in stress and anxiety due to the mindfulness exercises, even when the intervention was done over a shorter time frame than in past studies.

Child Effortful Control Mediates the Effects of Parental Personality and Warmth in Predicting Child Externalizing Behavior
Brenda Ruiz and Markie Mulchay
Faculty Sponsor: Caitlin Vasquez-O’Brien and Elizabeth Rellinger-Zettler

Parent positive personality (PP), attitudes toward parenting, and parental warmth predict child behavior problems (CBP) and effortful control (CEC; Eisenberg et al., 2005; Rea-Sandin et al., 2019). Longitudinal data were used to investigate if initial (T1) parent PP (optimism, hope, self-compassion), warmth, and perception of daily hassles predicted CPB 2.5 years later (T2) and whether those relations were mediated by CEC (assessed via 3 observational tasks).

Participants were 145 primary caregivers (95% female) and children age 4-12 (50% female) at T1. Longitudinal mediation was significant using the MLR estimator in MPlus; X2(2)=2.85, p=.24, RMSEA=.06, CFI=.99, SRMR=.02. A one SD increase of PP related to a .69 decrease in CEC and a one SD increase in warmth related to a .27 increase in CEC. Daily hassles were not significant. A one SD increase in CEC predicted a -.24 decrease in CPB. CEC significantly mediated the relation between warmth and CPB and between PP and CPB. The effects of PP and warmth on CPB were mediated by CEC. Surprisingly, PP correlated negatively with CEC and will be further investigated. Parent traits, perceptions, and behaviors may influence CPB by shaping CEC.

How Music Tempo Affects Anxiety Arousal
Emily Woods, Gracie Diehl, Jamiroquai Jackson, Kane Wildermuth, and Tinamae Yap
Faculty Sponsor: Caitlin Vasquez-O’Brien

Using self-report methods, Lilley and colleagues (2014) found that individuals who listen to slow music instead of fast music benefit from lower test anxiety. We predict listening to music with a slow tempo, defined as 90 beats per minute (bpm) or less, will display lower levels of anxiety while completing a math task when compared to listening to music with a fast tempo, defined as 150 bpm or higher. Illinois College students (N=100) were recruited to complete a math task in one of three music conditions (stress-inducing, relaxing, or no music). Participants were asked to complete a question packet that contained a double-digit multiplication task, the Westside Test Anxiety Scale self-report (Driscoll, 2004), the Abbreviated Mathematics Anxiety Scale (AMAS) self-report (Hopko et al, 2003), and a demographic questionnaire. While completing the math task, participants were asked to wear a pair of headphones that played stress-inducing music (166 bpm), relaxing music (59 bpm), or no music at all. Question packets were counterbalanced to avoid order effects. We hypothesize that music with a slower bpm will be associated with lower scores on test anxiety scales. This study provides support to movements to include instrumental music of a certain tempo during testing periods to lower anxiety and encourage an increase in academic performance.
ORAL PRESENTATIONS

ECONOMICS

III-01  An Economic Evaluation of the National Park Service  
Molly Gearin  
Faculty Sponsor: T.J. Devine

Some say that National Parks are priceless, but this terminology may lead policymakers to undervalue the benefits provided by the National Parks System. The value of all 419 sites managed by the National Park Service (NPS) while seemingly priceless, can be determined using economic techniques. The NPS’s mission is to preserve natural and cultural resources for future generations. This presentation details the non-market value of the NPS by analyzing user and existence values to determine the total social benefit of this agency. Beyond the sites themselves, markets are created in the surrounding communities, generating additional revenue and jobs by attracting non-local visitors. Examining the social benefit of the NPS, a disparity between the social benefit and the annual budget for maintenance is revealed. This creates a cycle of delaying maintenance projects at parks due to lacking funds, leaving necessary repairs unfixed. In addition, overcrowding and pollution can continually degrade the natural value of a site and funds are needed to prevent the cumulative degradation of the natural communities. The following investigation will document the unique value the NPS has to the American citizens of today and of the future, as well as the heightened need for increased funding rather than cuts in funding.

HISTORY

III-02  Harvesting Jacksonville’s History  
Abby Garrett, Stacy Bile, Ibrahim Kamal, and Nely Muñoz  
Faculty Sponsors: Samantha Sauer and Jenny Barker-Devine

In 2025, Jacksonville will celebrate its bicentennial, and the Khalaf Al Habtoor Archives can provide organizations and individuals with resources they need to tell their stories. We plan to do this through a history harvest, a public event where community members bring items of historical significance to be documented and digitized. These items are put into an online collection that is accessible to everyone. This presentation describes the work four Illinois College students completed as part of a grant-funded internship in May 2019, with each student focusing on four different aspects of conducting a history harvest. The communication and research intern met with members of the community, researched materials, and found the best ways to advertise the harvest. The public history intern put together a timeline of IC’s history and formatted design ideas for a future display on campus. The oral history intern interviewed three Congolese immigrants in Jacksonville to show Jacksonville’s diverse population and help share their story. The digital history intern found ways to share and organize the collections online and researched new technology to make that information more accessible. We will show how these four parts combined are important to capture Jacksonville’s history for centuries to come.

POLITICAL SCIENCE

III-03  Mathematical Analysis of Ranked Preference Voting  
Caden Beddingfield  
Faculty Sponsor: Dane Wendell

Can mathematical analysis help repair a broken electoral system? On election day, millions of Americans vote under the rules of plurality or majority voting. In this system, individual voters cast one vote for your favorite candidate and hope they win. However, places like Maine and New York City are experimenting with Ranked Preference alternatives. In these systems, individual voters rank multiple candidates according to their preferences, and even if their top-choice candidate cannot win, their vote can still factor towards their other choices. In this presentation, I analyze these systems from a mathematical perspective and discuss the benefits and trade-offs of each alternative.
Today, despite several advancements, women still face several inequalities compared to their male counterparts. Among those inequalities is the marital name choice that women are often pressured to make, but men generally are not. Although this concept has evolved since prior to the 1950s, many family units are still identified by the father’s last name, and women are traditionally the name-changers due to a patriarchal society that has been based on alleged history. After conducting several interviews and investigations regarding marital name changes, several patterns emerged about the tradition.