

# SENIOR SHOWCASE

2017-2018

Where Our Students Become Our Teachers

## Music Performances, 3:00—4:00 pm, Thompson Recital Hall

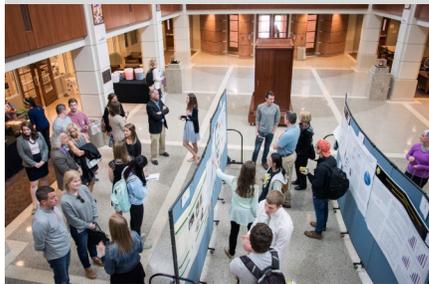
**Mei Fujisato, violin and Tony Weinstein, piano, *Violin Sonata No.3 In D Minor, Op.108, Iv. Presto Agitato, Johannes Brahms (1833-1897)***

**Logan Dell'Acqua, baritone and Amanda Hopson, piano, "Luke Havergal" John Duke (1899-1994)**

**Tyler Schaefer, saxophone, "Flamenco" Christian Lauba (B. 1952)**

**Angel Riley, soprano and Laura Brumbaugh, piano, "My Man's Gone Now" From Porgy And Bess, George Gershwin (1898-1937)**

**A full program is available in Thompson Recital Hall**



## Poster Presentations, 4:00—5:00 pm, Julian Atrium

### **1- Elizabeth Aguilar, Chemistry And Biochemistry, *Delivery Of Naked Plasmid Dna As A Gene Therapy Approach In A Murine Muscular Dystrophy Model***

Muscular dystrophies encompass a diverse group of genetic diseases ultimately leading to progressive muscle degeneration. The most severe form of muscular dystrophy is Duchenne Muscular Dystrophy (DMD), which causes fatality due to heart and diaphragm failure. I pursued a novel gene therapy experiment in the Calos lab, which utilized a plasmid DNA gene delivery vector. By integrating a strongly expressed copy of follistatin into the host genome, I demonstrated our plasmid gene therapy method may have provided some histological improvement to degenerated muscles. I obtained these results using H&E membrane histology, western blot, PCR, and IHC analysis. These findings demonstrate this therapy may restore damaged muscle function in DMD mice. Because this gene therapy vector differs from current capsid containing approaches, this novel approach may have the potential to integrate healthy copies of genes to address disease symptoms and lead to effective treatment of these genetic diseases.

### **2- Nan Ash, Biology, *Environmental Variations And Saponaria Officinalis Pigmentation***

*Saponaria officinalis*, or bouncing bet, is an exotic plant; its flowers change from male to female over the course of its life. The change in sex phase coincides with a transition from pale to pink color and an overall increase in size. The pink color is a result of anthocyanin pigments accumulating in the flowers. It is known that various stressors such as temperature and light induce extra anthocyanin production. I wanted to further investigate the effects of temperature, along with sun exposure on anthocyanin pigment production in a wild population of *Saponaria officinalis*.

### **3- Dallas Bell, Chemistry And Biochemistry, *Development Of Tandem Aldol-Epoxidation Flow Reaction***

Our lab has developed an aldol-epoxidation reaction via batch process, which stereoselectively builds molecular complexity. Though the reaction showed successful accumulation of epoxide product, the batch process was unable to achieve scaling up for gram quantities. Transitioning the reaction to a flow process allows us to have greater control of the reactants when mixing, specifically to ensure correct stoichiometric proportions. We are now investigating a flow process using a HPLC pumps to ensure consistency in proportionality—specifically noting changes in flow rate and tubing diameter and length. This has so far provided more than 2 grams of epoxide from a single run.

### **4- Jacob Boudreau And Thomas Grier, Physics And Astronomy, *Surveying Light Pollution In Greencastle, In And Putnam County***

Light pollution is not just a problem for astronomers! Studies show there are significant environmental, economic, and societal impacts from light pollution. The goal of our research is to develop procedures for studying light pollution locally, which consists of Putnam County, Greencastle, and DePauw's campus. We hope to develop a long-term monitoring system to see how the ambient light in these locations are changing.

### **5- Jonathon Brugman, Computer Science, *The Inclusion Of Role Based Access Control And Unified Service Apis In Mobile Health Applications***

The rise of mobile health applications in recent years has required an increased need for security and interoperability within and between these applications. The HL7 has developed the Fast Healthcare Interoperability Resources (FHIR) standard in order to ease integration between all new technologies being developed. The development of healthcare information technology (HIT) systems caused it to become necessary to create a stable way to safely interact with multiple external HIT systems. Each of these HITs use their own methods of access control and own security measures. This creates a situation in which it becomes advantageous to create application programming interfaces to consolidate calls to a particular set of methods related to one particular field using role based access control (RBAC). This is demonstrated through the construction of the MyGoogle API which connects to multiple health and fitness related APIs, including OpenEMR health records and Google Fit datastores, in order to create a unified HIT system. The MyGoogle API includes HAPI FHIR capability to increase interoperability between many third party health applications. One of these applications being ShareMyHealth, a fitness application, which is also used to demonstrate the importance and implementation of RBAC.

### **6- Emily Budde, Science Research Fellows, *Neural Correlates Of Ethical Decision Making: Why Do We Do Bad Things?***

Information security has become a growing problem in businesses, and their employees are their number one threat to security. Our ERP study looks into the how people think about violations and why they commit them. So far evidence shows a differentiation in how we think about breeches and the people who choose to commit them. We see correlations between self-control and moral potency to the likelihood for someone to promote an information security breach.

### **7- Haley Chute, Geosciences, *Mars: Lithospheric Flexure Of The Tharsis Montes Complex And It's Relationship To Its Tectonic History***

The Tharsis Montes Complex is a group of volcanoes on the surface of Mars. The mass of each individual volcano affects the top most layer of Mars by pushing it down with its weight. In our study, we are mapping the tension exerted on this layer by a volcano that is similar to the youngest volcano in the complex, Ascræus Mons, and seeing how it has created surface features observed in previous studies. The two features we focus on are terraces, or shelf like bodies, and surface rifts. We use a modeling software to map where the tension is on the surface and match that with our focused features around Ascræus Mons. We concluded that our model matches the presence and estimated distance of 150-250 km of rifts and terraces surrounding Ascræus Mons. We also concluded that there is trapped magmatic melting underneath the volcano causing the layer underneath to abnormally thicken. The size and width of this melting underneath largely affects the tension exerted. The crustal underplate that matches with the tension seen on the surface is of a size that is about 1-2x as wide as the volcano's radius, which is around 220-440km.

### **8- Tyler Holt, Kinesiology, *Eccentric Angle Range Effects On The Shift In The Length-Tension Curve Following Mvc Of The Hamstring***

An exercise bout of maximal eccentric contractions induces muscular soreness and damage that are more extreme than maximal concentric contractions. These types of movements are prevalent in certain sporting activities such as sprinting, jumping and kicking and examining the effects of eccentric training may allow for better athletic performance, injury prevention and rehabilitation techniques. This study is being conducted because current literature regarding muscle lengthening has yet to examine the specific ranges in which the most muscle damage occurs during a maximal eccentric muscle contraction.

### **9- Victoria Jennings, Peace And Conflict Studies, *Conflict At Standing Rock: A Multi-Stakeholder Approach To Addressing Ongoing Disputes Over Consultation, Sacred Land, And Environmental Risk Posed By The Dakota Access Pipeline***

This body of research considers the conflict between the Standing Rock Sioux Tribe, Energy Transfer Partners, and the U.S. Government in the case of the construction of the Dakota Access Pipeline and the protests at Standing Rock. The author will conduct a thorough conflict assessment and analysis to inform the creation of a multi-stakeholder process that seeks to address ongoing disputes between the parties about the development of sacred land, existing consultation and permitting processes, and environmental safety management.

# Poster Presentations, 5:00—6:00 pm, Julian Atrium

## 10- Meagan Khan, Biology, *Understanding How Environmental Stressors Affect Production Of Hypericin By Hypericum Perforatum In The Nature Park Quarry*

*Hypericum perforatum*, also known as St. John's Wort, encounters unavoidable environmental stressors such as strong light, herbivory and low availability of water. Plants may respond to such stressors by slowing their growth or altering their production of defense chemicals. We compared the effects of light intensity and artificial herbivory on *Hypericum perforatum* in the Nature Park. We investigated the production of hypericin, a defense chemical that is used medicinally by humans, over a 17-day period. The results showed that shaded plants produced slightly more hypericin in the leaves, especially after herbivory. This may be due to shaded plants experiencing less stress in the bright, dry quarry, thus having more resources to make defensive chemicals.

## 11- Kylie Morris, Kinesiology, *Inclined Treadmill Resistance Training As A Means To Improve Sprint Performance In Division Iii Football Players*

One aspect that separates elite athletes from sub elite is the ability to perform short burst acceleration during a bout of exercise. Incorporating inclined treadmill training into a resistance training regimen increases stride length and frequency just as much, if not more than just a basic resistance training workout. The primary purpose of this study was to determine if inclined treadmill resistance training is effective in improving sprint speed, stride length, and stride frequency for the acceleration phase of sprinting and overall 40 m sprint time in NCAA division III football players.

## 12- Megan Odaniell, Psychology And Neuroscience, *Women, Anger Suppression, And Depressed Mood: The Role Of Social Power*

Female undergraduate students were paired with either a male or a female confederate and asked to solve a logic puzzle task. Additionally, participants either completed practice trials of the logic task before working with the partner or were given no prior exposure. Confederates were instructed to elicit anger in the participants; participants then completed a number of self-report measures relating to mood, emotional regulation, and social power. The researcher hypothesized that participants would show the highest anger suppression when working with a male confederate, and that those in the male/expert condition would report the highest levels of depressed mood.

## 13- Daniel Schultz, English, *Re-Evaluating The Place Of The Commonplace Book*

My presentation is on a faculty-led research project in which I participated: I transcribed an 17th-18th century manuscript attributed to Thomas Parker, then I created a "digitization manual" which outlined the important people, places, and things in that same manuscript. I spent several days at the Lilly Rare Book Library at Indiana University, and I also attended a coding conference at the University of Pittsburgh-Greensburg. Ultimately, my transcription and digitization manual will help other researchers find information related to Parker more quickly and efficiently.

## 14- Natalie Sheeks, Psychology And Neuroscience, *Flow-Ers' Through The Lens Of The Hexaco Personality Model*

We examined whether the HEXACO Personality Model was predictive of Flow propensity. We hypothesized that relationships would exist between specific HEXACO components and Flow. Specifically, Emotionality was expected to be negatively associated with Flow, whereas Humility-Honesty, Extraversion, Agreeableness, and Emotionality were expected to be positively associated with Flow. The Dispositional Flow Scale-2 (DFS-2; Jackson & Marsh, 1993) and the HEXACO-60 (Ashton & Lee, 2009) were administered to 372 undergraduate and Mechanical Turk participants via an online questionnaire. Our significant results expanded on previous studies examining the individual role of traits in predicting Flow. Each HEXACO trait, except Honesty-Humility, was moderately associated ( $r \geq .30$ ) with Flow propensity.

## 15- Samuel Showalter, Mathematics, *Optimizing Credit Card Fraud Detection With Limited And Imbalanced Data*

Fairly recently, machine learning has automated much of the fraud detection process, notifying banks of -- or even blocking -- potentially fraudulent transactions instantly. However, fraud as a practice is evolving, and fraud is rare relative to all transactions. This imbalance starves models of the content necessary to detect fraud. Regardless, recent surveys have found credit card fraud alone to cost companies billions every year. This study assesses different sampling methods as well as several machine learning algorithms for their ability to reduce fraud costs. Additionally, a genetic algorithm identifies if an ensemble of the best models can outperform its individual components.

## 16- Madeleine Storm, Psychology And Neuroscience, *Eating Disorders In Men: Examining Trends Of Bias And Neglect*

Eating disorders have long been considered a female issue, but recent evidence indicates that men also struggle with eating pathology and that their needs are largely overlooked. Men often do not seek treatment because of the accompanying stigma or because they are unaware that men can have eating disorders. For men who do seek treatment, screening measures frequently overlook the presence of disorder because the constructs assess female concerns. To address this gap in clinical understanding, the present study sought to identify predictors and negative psychological outcomes associated with binge eating—the most common form of disordered eating among men.

## 17- Taras Tataryn, Computer Science, *Perltwit: Examining Phishing In Social Media*

Approximately 500 million tweets are sent per day, as a result, it has become a popular platform for mounting/conducting phishing attacks. In fact, a good amount of these tweets may contain private/sensitive data and malicious URL's. Our project focuses on mining Twitter data and filtering it across a specific list of phrases and examine if the tweet contains malicious URL's by undergoing deep link inspection and certificate examination. Finally, our project can prevent further phishing attacks on social media by spreading awareness using a Tweet Bot, and utilize the data from these tweets to produce valuable analytics.

## 18- Michelle Wiebe, Biology, *Optimization Of The Crispr/Cas9 System For Arginase Knockout In Plasmodium Falciparum*

Half of the world is at risk of contracting malaria. The majority of deaths due to the disease occur in children under the age of 5. Although recent preventative measures have helped alleviate the burden of disease, increasing drug resistance observed in malaria parasites highlights the need to identify new targets for therapeutic intervention. Recently, it was discovered that *Plasmodium falciparum* parasites developed non-genetic resistance to the drug halofuginone by increasing their intracellular proline concentration. This discovery provides an opportunity to study the mechanisms of non-genetic resistance in *P. falciparum*. This project aimed to knock out arginase, an enzyme involved in the conversion of arginine to proline, in *P. falciparum* parasites using the CRISPR/Cas9 system.

# Classroom Presentations, 4:00—5:00 pm

Facilitator: Professor Sunil Sahu, Political Science

Julian 151

## Ryan Garrigus, History, *"Raging Against The Machine: Fred Hampton & Mayor Daley's Struggle For Chicago"*

The FBI's Assassination of Fred Hampton and politics of race in Chicago: Under the leadership of J. Edgar Hoover, the Federal Bureau of Investigation launched a secret war to target the Black Panther Party (BPP) and other civil rights organizations. Fred Hampton, a successful organizer and charismatic young man was head of the Chicago Chapter of the BPP. He was seen as a great speaker and leader for the organization who never resorted to violence. Hampton was interested in promoting black empowerment and in motivating other African Americans into joining the movement. The purpose of this topic is to explore the tactics taken by Mayor Daley, with the aid of the FBI, to quell civil rights movements and separate the city of Chicago to black and white. He took many angles to achieve this, from building highways to separate communities and a lethal approach of assassinating Fred Hampton. I want to explore how Hampton and other civil rights leaders were able to sidestep Daley and build their own community up without the aid of the government, one that was trying to suppress them and demean them. What was the greater effect on the African American community by Daley and why was Hampton a threat to Daley, the FBI, and the white way of life in the city of Chicago. What was Hampton's impact that caused his death and what could we learn from him and apply to today?

## Victoria Houghtalen, Political Science, *Patterns In The American Regime And Possibility Of Disruption: Evaluating Donald Trump's Effect On Stability*

This essay explores how four books present patterns in the American regime and the possibility of disruption. The American regime has identifiable patterns across time; these regular forms and conditions lead to greater stability in a regime. Yet these stable patterns can encounter disruptions, or disturbances that interrupt an event or process. Observers of the American political system may have recently perceived a massive disruption: the election of the (traditionally) politically unsavvy, reality television mogul, Donald J. Trump. The four books predate the Trump presidency, so the essay will examine if the Trump presidency is a massive disruption or perhaps a sensationalized regular occurrence. I find that Donald Trump disrupted previously stable patterns in the American regime--but he has not yet terminated all of them.

## Nathaniel Reed, Political Science, *Is R2P Dead?: A Comparative Case Study Into The Persecution Of The Rohingya And Previous Humanitarian Interventions*

Paragraphs 138 and 139 of the Responsibility to Protect outcome document represent a shift in our conception of sovereignty from the state to the individual. By reinforcing this kind of sovereignty, the international community made a promise to intervene in cases of mass atrocities. The doctrine has flaws that challenge its status as a

“new” international norm. These flaws are found in the inconsistency of its implementation. By evaluating the cases of Rwanda, Libya, Syria, and Myanmar, I establish thresholds for intervention and evaluate rather the Responsibility to Protect will be invoked for the Rohingya people of Myanmar.

Julian 152

**Facilitator:** Professor Matthew Balensuela, School of Music

**Emily Chen, School Of Music, *Alive And Well: The New Lute Tradition's Path To Sustained Relevance And Authenticity***

Although the lute was once a staple of Elizabethan culture, the tradition declined into obscurity. Since the 1970s Lute Revival, the goal of lutenists has not been to create historically accurate music, but music that resonates authentically with contemporary listeners. I trace the new lute tradition's emergence by analyzing scholarship on lute music and ornamentation from before, during, and after the Lute Revival. I then compare recordings of Dowland's lute song "Come Away" to show the lute tradition's expressive creativity, which has rendered the lute a fresh and relevant instrument today.

**Rachel May, English, *Stories Of Betsy***

"Stories of Betsy" is a creative nonfiction project that aims to learn about my Grandma Betsy, who died when I was young. After speaking with family members, I narrate their stories and interweave them with photos and poems that convey my journey. While I sift through artifacts in my Grandpa's attic, I simultaneously sort memories and stories to synthesize who Betsy was for those who knew her best. The introduction reflects on the necessary consideration of questions that deal with truth, perspective, and the ethics of remembering.

**Meg Morrow, English, *Unattainable Perfection Under The Chivalric Code: Sir Gawain's Erasure Of Virtue Through Intersection***

In the fourteenth-century medieval romance *Sir Gawain and the Green Knight*, the titular character seems to embody everything a good, chivalric, Christian knight of King Arthur's round table should be. However, when read alongside another Arthurian legend that centers on Sir Gawain, "The Knight of the Sword", it becomes clear that Gawain is subscribed to an inherently contradictory code. The many virtues Gawain is called to embody simultaneously should ideally coexist, but end up fighting against one another; only one figure in the medieval period can successfully negotiate this sublime paradoxical intersection, and it's not the mortal Sir Gawain.

Julian 156

**Facilitator:** Jim Mills, Geosciences

**Nicholas Meszaros, Geosciences, *Constraints On The Role Of Packsaddle Schist Assimilation In The Petrogenetic Evolution Of The Medium Grained Granite Of The Kingsland Pluton, Llano Uplift, Central-Texas***

The 1.1 billion-year old granitic Kingsland Pluton is a surficial exposure of crystallized magma located in the Llano Uplift of Central-Texas. One locality, known as Kingsland Slab, has field evidence that the pluton melted and assimilated surrounding rock as it crystallized. Utilizing petrographic, geochemical, and computational methods, the feasibility and effects of assimilation on the Kingsland Pluton were assessed. Trace element abundances, rock-mineral textures, and thermodynamic phase-equilibria models collectively favor a moderate to high degree of assimilation of rocks with ~65% SiO<sub>2</sub>. Assimilation may therefore play a more significant role in the chemical evolution of the Kingsland Pluton than previously thought.

**Hannah Nelson, Biology, Development, Innervation, And Involution Of A Transient Cement Gland In A Giant Danio (D. Cf. Malabaricus): The Role Of Retinoic Acid**

Cement glands are organs that secrete a sticky mucous. Using florescent imaging, a cement gland like structure has been discovered within the Giant Danio (D. cf. Malabaricus). The development of this structure, as well as the development of the embryo, has been documented. A variety of stains has been used to deduce what type of glycoconjugates make the development as well as what nerves innervate the organ. In addition, the disappearance of this gland has also been studied. Using Retinoic Acid (RA) the altered development of the gland was also studied. Details into the development and secretion of this mucous from this newly discovered organ will give insight into properties that could end up generating a reliable underwater glue.

**19- Sarah Farmer, Environmental Fellows, Sculpture and Sustainability**

In my studio critique I was challenged on my cellophane use as my process of adding a heat source appeared to be unsafe/environmentally unfriendly. Through research into the chemistry of cellophane, I determined the material I was using was safer than expected. Cellophane is a plant-based plastic made from cellulose, which means it is biodegradable, compostable, and has similar emissions to burning wood. While the carbon disulfide in the production poses a pollution risk, it is still a more sustainable alternative to polymer plastics often used for packaging. This body of work begins to question the materials we use, considering their chemical nature, biological/environmental effects, and the ethics of use. When the viewer can't guess what the material is or how the object was produced, they are being forced into a new, interdisciplinary way of thinking.

Julian 157

**Facilitator:** Professor Christy Holmes, Women's, Gender and Sexuality Studies

**Rachel Higson, English, *Manning Up At DePauw: Performing Fraternal Masculinity On A Liberal Arts Campus***

This research explores DePauw's hegemonic, dominant masculinity and its effects on the men enacting it, men who express different masculinities, and women. The thesis combines nonfiction accounts of performances of fraternal masculinity that I have witnessed on campus followed by a sociological analysis of the interaction. My thesis aims to contribute to a new campus culture: one that does not steamroll expressions of masculinity, but rather, celebrates many different intersectional masculinities. This project aims to act as an intervention, invitation, and conversation within the DePauw community.

**Molly Madden, Philosophy, *Humility In Friendship: Self-Awareness Not Self-Deprecation***

In this three-part essay, I explore the role of humility in friendship. I first define the concept of friendship and analyze its value. Then I provide a Christian account of humility from Bernard of Clairvaux. Finally, I argue that in order to enhance friendships without a great risk of harming them, humility should be based on a more positive self-awareness not self-deprecation. Friendship is a paramount feature of the human experience, while humility is a largely debated character trait or virtue that depends on one's view of self. This essay uses a philosophical frame to combine ideas of psychology and human well-being.

**Samantha Ostreicher, Honor Scholar Program, *Belonging In This Place***

belonging in This Place examined student belonging on campus through student definitions of belonging placed in conversation with administration understanding of student belonging. Ultimately, the role of the Greek system was determined to be unavoidable when talking about student belonging on campus. This research was an attempt to wrestle with how to move forward in a productive direction and acknowledge the power that the dominant Greek system has.

Julian 159

**Facilitator:** Professor Jonathan Nichols-Pethick, Communication & Theatre, Media Fellows Program

**Zoe Hines, Computer Science, *EDI: An Email Dictating Interface***

The opportunities afforded by and discovered through email should not be closed off from anyone. The power of an email account is still not readily accessible to several types of users. The visually impaired are among the largest groups that often must go without. EDI (ee-dee), a Google Chrome browser extension, seeks to bridge this gap by making it easy to read and write emails with just voice alone. While EDI's target users are the visually impaired, it could easily be used as a hands-free emailing alternative or dictation tool. Voice was the original messenger, so stay in touch with EDI.

**Laurel Tilton, Sociology & Anthropology, *Modern Witchcraft In The Digital Age: Building Communities On Social Media***

In the United States, it seems that witches are often seen as either one of two things: a warty, hunch-backed costume for Halloween, or remnants of a time long past since the Salem Witch Trials. However, there are places where modern witches are alive and well in the United States. Buried among gifs of Harry Styles and cat videos, the social media site Tumblr is being used by those who practice witchcraft to build communities and share resources and ideas. My research explores these modern witchcraft communities made through the use of social media; specifically focusing on the way these beliefs and communities function in a digital space.

**Laurel Tilton, Media Fellows Program, *Straight White Men Have Said Enough About Video Games: Creating Inclusive Spaces For Video Game Discourse***

41% of gaming consumers are women. This statistic doesn't even begin to dive into other underrepresented minorities that are definitely playing video games, yet receive little to no adequate representation. Started by two queers, The Antepiece Podcast takes a stab at dominant patriarchal and misogynistic video game culture.

## Classroom Presentations, 5:00—6:00 pm

Julian 151

**Facilitator:** Professor Veronica Pejril, Director of Faculty Instructional Technology Support, Coordinator of MITC and Assistant Professor of Music

**Hyeree Ellis, Sociology & Anthropology, *Who Are You And Where Are You From?: The Challenges Of Identity Formation Among Military Dependents***

The transition to adulthood in the United States has varied considerably in the last several decades; many coming of age narratives no longer include the same experiences, opportunities, or even cultures. Children of service members, in particular, face unique challenges in forming their coming of age narratives, and a focused study on such experiences proves to be compelling. In a time of increasing globalism and need for cultural awareness, military dependents offer a valuable avenue to study the effects of premature exposure to distinct cultures, especially in relation to identity formation and becoming an adult.

**Elizabeth Getz, Education Studies, *Male Student Athletes Perceptions On Consent And Sexual Assault: The Impact Of Preferred Education Methods***

In an environment where sexual assault and harassment are flourishing, the current methods of prevention education must be investigated in order to determine how much impact they truly have on their participants. This study analyzes perceptions regarding the methods of sexual assault prevention education for male student athletes and looks to the perceptions of their head coaches due to their impact on said student athletes. Male student athletes received a survey to complete, while their head coaches were interviewed regarding their thoughts and perceptions. The results of this study challenge the current methods used to educate male student athletes on the concepts of sexual assault and its prevention.

**Spencer Schillerstrom, School Of Music, *The Elitism Of Jazz Music***

Jazz is an art form of expression that rose to popularity because of its accessibility and, more importantly, its free nature. As a result, jazz became a vehicle to break away from structure as it exposed the over controlling social constructs that continue to plague human culture today. At some point along the way, it turned into a very inaccessible, structured, and elite genre. So, what happened to jazz? By first surveying the development of jazz both socially and historically, this thesis correlates jazz's downfall with its adoption into the world of systemic education and hopes to provide suggestions to reform jazz education and provide a preservative model for the future.

Julian 152

**Facilitator:** Professor David Gellman, History

**Blake Beckemeyer, Honor Scholar Program, *Bach Passion Recitatives: Function And Meaning Of Accidentals***

J. S. Bach left two extant passions that narrate Jesus' arrest, trial, and crucifixion: the Johannes-Passion and Matthäus-Passion. These recitatives, which provide the biblical narration, have been long neglected by scholars because of their volatility. Yet, when analyzing them, this thesis shows recitatives were remarkable, careful constructions by Bach, where sharps and flats are used for transitions between narrative focuses, for theological emphasis, or for musical utility. The presentation includes performance and explanation of the examples from the music. The analysis can be used to discuss issues of anti-Semitism in the Matthäus-Passion and performance choices in modern performance.

**Connor Reed, Political Science, *The Rise And Demise Of The Islamic State: The Bush Administration, Broken Iraqi Politics, And The Growth Of Salafi Jihad***

The invasion of Iraq by American forces in 2003 deposed one of the most ruthless autocrats of the early Twenty First Century. Saddam Hussein's deposition opened the door for a new direction for Iraqi politics. Over a decade later and after the removal of American-led coalition forces in Iraq, it has become a warzone once again. The Islamic State in Iraq and Syria/Al-Shame/the Levant (ISIS/ISIL) has begun to control large portions of land in Iraq and Syria. This discourse will investigate the real causes of the rise and potential demise of the Islamic State.

**Connor Stader, History, *"Breaching The "Canonical Impediment": How Catholicism And The Separation Of Church And State Influenced The Politics Of JFK"***

The purpose of my thesis was to unpack Kennedy's relationship to religion as it related to his political identity. From Congress to the White House, Kennedy's stance on particular issues, including federal aid to parochial schools, fluctuated as his national and political prominence increased. Throughout his political career Kennedy masterfully struck a balance in catering toward Catholic and Protestant audiences, a tactic that was essential to winning the election of 1960.

Julian 157

**Facilitator:** Professor Tamara Beauboeuf, Women's, Gender & Sexuality Studies

**Emily Fox, Sociology & Anthropology, *Behind Fraternity Doors: Intimate Friendship And Homosocial Environments***

Hegemonic masculinity is characterized by aversion to emotionality, competition, and homophobia—traits that conflict with intimate friendship practices. An online survey sent to a sample of male students measured intimacy levels within participants' same-sex best friendships. The results of this survey along with interview data indicate that fraternity men construct spaces in which they may circumvent hegemonic standards of masculinity and partake in intimate friendship practices.

**Alaya Hardy, School Of Music, *From Black Faces To Black Bodies On Broadway: Black Women's Empowerment Shuffles Along***

Broadway musicals have historically been home to a more progressive school of thought than other media, where black bodies are stereotyped and limited to a narrow breadth of creativity and expression. However, roles for black women on Broadway still often perpetuate negative stereotypes. This paper will focus on black women's fight for positive representation on Broadway. I argue that despite continued challenges, there is one show in particular that has empowered black women: the case study of the 1921 and 2016 versions of Noble Sissle and Eubie Blake's revolutionary musical Shuffle Along.

**Shanae Nelson, Education Studies, *Afro-Caribbean Students' Interpretation Of Their Representation Within A Multicultural Framework***

This research examines the representation of Afro-Caribbean high school students' identities within a multicultural framework. By unearthing the complexity of Blackness and the growing number of Caribbean immigrants, this study exposes a gap within multicultural education. Within a multicultural framework, this research seeks to better understand how Caribbean students interpret their representations within the classroom. This study attempts to identify the different ways Caribbean students challenged dominant/stereotypical ideologies about their identities and which spaces, if not the classroom, informed their identities.

Julian 159

**Facilitator:** Professor Caroline Jetton, School of Music

**Ciara Mcmanus, Music Education/School Of Music, *On The Spot: The Effect Of Detail-Oriented Practice On Students' Confidence When Improvising In The Classroom***

In many large music programs, improvisation is sometimes introduced through standard chord progressions. This method of introduction may make students feel overwhelmed. Through my study, I wanted to document the effect of scale study on high school jazz students' ability to improvise around a simple four-bar progression. As a class, students worked through scales in three keys. Students were recorded on the first and last day of the study. These recordings were graded using a rubric assessing criteria such as rhythmic accuracy, overall effect, etc., and I concluded that students' ability to improvise improved by a small margin.

**Rachel Pearson, School Of Music, *If Imitation Is The Finest Form Of Flattery, Then Why Am I Being Sued?***

Russian composer Igor Stravinsky once mentioned "a good composer does not imitate; he steals." In jazz and classical music, musical borrowing and imitation is a societal norm and has contributed to the evolution and modern relevance of such musical styles. However, as copyright law has evolved, limitations have been placed on this system of imitation. On the contrary, copyright law is considered to be an important property law because of its ability to protect intellectual property. Without copyright law, creators would have no legal protection over their creations. Does copyright law and litigation help protect creative rights or do such laws inhibit expression and creativity? This paper will answer this question by observing several examples in past court rulings in regards to copyright infringement in the music industry as well as arguments supporting and opposing copyright law.

**Allan Whitehead, Music Education/School Of Music, *High School Jazz Band Students' Performance Of Scales And Modes***

The purpose of this study was to assess high school jazz ensemble students' ability to perform the Bb, F, and G Major, Mixolydian, and Dorian scales. Participants were sixteen high school instrumental students (7 seniors, 5 juniors, and 4 sophomores) enrolled at a large public high school in Indianapolis, Indiana. The scales were taught in the first ten minutes of class for two weeks (10 days). Various strategies were used to teach the scales including rote teaching, repetition, and meaningful learning. Results will be determined at the conclusion of the study.