

## KEY:

Performing/Visual Arts  
Jewell Forum

ROOM	TIME	Title of Project	Abstract; Abstracts should be no more than 250 words in length	Type of Project	Presenter	Faculty Sponsor(s)
Gano Assembly Room	8:30 AM	The Foreign Emoluments Clause, President Trump's Business Ties, and Ethics	Serious debate has arisen about President Trump's ties to his businesses and the Constitution's Foreign Emoluments Clause-particularly the original public meaning of the word 'emolument.' More frequently known as the Title of Nobility Clause, the Clause reads as such:"No Title of Nobility shall be granted by the United States: And no Person holding any Office of Profit or Trust under them, shall, without the Consent of the Congress, accept of any present, Emolument, Office, or Title, of any kind whatever, from any King, Prince, or foreign State. (U.S. Const. art. I, 119, cl. 8.)"Legal scholars debate two key problems: 1) what does "office" mean, and 2) do ordinary business transactions constitute an "emolument"? For example, if foreign governments purchased copies of President Obama's memoir or rented suites at President Trump's hotels, would that be a prohibited emolument? In this presentation, I will argue that business transactions-even if they are conducted at arm's length-constitute an entanglement with the Foreign Emoluments Clause and Congress ought to enforce this provision by requiring President Trump to place his business interests in a blind trust.	Research Paper/Project	Eric Krieger	Dr. Gary Armstrong
Gano Assembly Room	8:50 AM	Going Dark: An Analysis of Kansas City's Cyber Resilience	Over the past decade, cybersecurity has become an alarming national security problem. While the United States has invested much in the way of offensive cyber weapons, it has neglected the security of its own institutions. In a world where states such as Russia, China, Iran and North Korea possess powerful arsenals of cyber weapons and a sophisticated understanding of how to use them, this vulnerability represents a significant threat. National security experts believe that some of these states may already have access to the United States power grid and they have the capability to shut down significant portions of it at any given time. Even though policymakers recognize the problem, they have done little to determine how critical institutions in major cities around the United States would respond. The purpose of this study is to examine how vital institutions in a city such as Kansas City would react to a cyberattack on the nation's power grid. Through interviews of individuals who work in critical institutions in the Kansas City area and the application of a model for resilience, I have put together an image of how the institutions we depend on in our day to day lives would respond to one of America's most profound and complex national security challenges.	Research Paper/Project	Drew Novak	Dr. Gary Armstrong
Gano Assembly Room	9:10 AM	Conservatism in America	This work examines American Conservative political thought since the inception of our Republic. Similarities in the political thought of three men from distinct eras in American history are illuminated: James Madison (among other Founding Fathers), Abraham Lincoln, and Barry Goldwater. Five principles are identified as characteristic of American Conservatism throughout American history. First and foremost, the Preservation of the Union guides the American Conservative. Liberty, that once radical notion that the individual is, and ought to be, an autonomous creature, also undergirds American Conservatism. Republicanism, i.e. the republican nature of the American Government, which simultaneously reflects yet mitigates the forces of democracy, has also frequently been the subject of a Conservative defense. The nuanced role of elites in the American Republic falls under the aegis of this principle and is also subsequently addressed. In addition, Conservatives have always been advocates of Federalism, the basis of our federal system-distinguishable from both a loose confederacy and from a centralized system. And, finally, Deference to the Founders ensures that American Conservatives abide by the these principles, and almost guarantees that they are the citizens who have given the greatest consideration to the dictates of the Founders, or to the wisdom of subsequent generations of Americans, as they pertain to matters at hand.	Research Paper/Project	Jameson O'Connor	Dr. Rein Staal

Gano Assembly Room	10:00 AM	Comparing and Critiquing the Institutions Used in Judicial Selection	In the United States, there are three methods of judicial selection: the federal system, direct elections, and the Missouri Plan. With the federal system, the executive branch nominates and the legislature confirms. With direct elections, citizens elect the judiciary. With the Missouri Plan, a commission of citizens selected by the governor, members of the bar, and the presiding judge of the respective court select a panel of nominees. That panel then goes to the governor, who chooses which of the panelists to appoint. There is no consensus as to which method of judicial selection is superior. The federal system earns praise for its strict adherence to checks and balances, but lacks opportunities for citizen involvement, against democratic principles. Direct elections give virtually total control to the citizens, but leave numerous opportunities for corruption and lesser-qualified members of the judiciary. The Missouri Plan attempts to balance the problems with the former two systems in an effort to be nonpartisan, merit-based, and democratic. However, numerous states have altered or rejected the plan because of its alleged failure to select the most qualified members of the judiciary and move the partisanship behind closed doors. In this research presentation, we will critically analyze these methods of judicial selection, concluding that the Missouri Plan is in need of serious reform if it wants to live up to its promises of being non-partisan and based on merit.	Research Paper/Project	Bailey Cordonnier, Madison Carroll	Dr. Rein Staal, Dr. Gary Armstrong
Gano Assembly Room	10:20 AM	James Garfield and William McKinley: Why These Two Assassinated Presidents Were Virtually Forgotten	The assassinations of Presidents Abraham Lincoln and John F. Kennedy left indelible marks on the American collective consciousness, yet the assassinations of Presidents James Garfield and William McKinley have been virtually forgotten. While most would assume that presidential assassinations entail a lasting legacy for the assassinated, the clear disparity between the remembered and the forgotten indicates that it is not solely the circumstances of death that solidify these presidents' legacies. A study of the historical contexts in which the assassinations occurred will reveal that legacy is determined more by three significant factors than the act of assassination itself. First among these factors is the ideological motivation of the assassin. Second, achievements during Garfield and McKinley's presidencies were overshadowed by succeeding office holders. Lastly, Garfield and McKinley were not made martyrs to the extent that Lincoln and Kennedy were.	Research Paper/Project	Savannah Hawley, Christina Kirk	Dr. Rein Staal
Gano Assembly Room	10:40 AM	Solidarity in the European Union: Precept or Duty?	The word 'solidarity' has been used in the European Union (EU) since its origins as the European Coal and Steel Community. The 2007 Lisbon Treaty uses the word 'solidarity' more than twenty times in a variety of policy areas without clearly defining its meaning, and its usage in the EU has become regarded by some scholars as lavish and inflationary. The EU's founding treaties have set goals such as promoting "solidarity between generations" and made vague expectations such as "Member States shall show mutual solidarity," but the use of the word 'solidarity' by EU member states and EU institutions in recent crises affecting the EU-namely the European sovereign debt crisis and the "Refugee/Migrant" crisis-has brought attention to conflicting understandings of the meaning of solidarity in the EU. Many believe that solidarity is one of the principle norms of EU. Others argue that solidarity is at best a precept and attempts to define the duties associated with it would create a crisis for the EU. Others argue that the EU is creating practical and enforceable legal obligations around the norm of solidarity. In my presentation, I will argue that solidarity is an unenforceable precept and that creating legal sanctions for failing to fulfill its alleged duties or act with political unity will convert it to something else. Solidarity in the European Union exists, but it is a fragile norm and unlikely to become stronger without EU member states showing solidarity even when others do not.	Research Paper/Project	Eric Krieger	Dr. Gary Armstrong
Gano Assembly Room	1:10 PM	Structure of 1.9Na2O.SiO2 Glass Determined by Electron Paramagnetic Resonance	Continuous wave Electron Paramagnetic Resonance (EPR) spectra have been obtained for the 1.9Na2O.SiO2 glass system. Experimental results suggest the presence of coupling between unpaired electrons and 23Na nuclear spins via electron-nuclear spin hyperfine interactions. In addition, spectral features indicate that hyperfine interactions exhibit two unique directions within the lattice. Given these observations, experimental spectra are modeled with MATLAB using Easyspin. Initial fits to the data yield the following values $g_{  }=2.3244$ , $g_{\perp}=2.0503$ and $(A/h)_{  }=443.7276$ MHz, $(A/h)_{\perp}=86.8772$ MHz. Additional fits to the data will be discussed during the presentation.	Research Project/paper	Denver Strong	Dr. Blane Baker

Gano Assembly Room	1:30 PM	Individuals' behavior regarding economic decisions under risk/uncertainty: An examination of EUT	The validity of Expected Utility Theory and its alternative theory (Regret Theory) on predicting individuals' economic decisions under risk and uncertainty is investigated in this article, along with a number of other factors including personality and risk-preference that we believe will effect choice-making behaviors. Overall, EUT and RT are challenged (invalid prediction) in this research, and the following conclusions are made: (a) people who self-reported to be more innovate and to be more willing at taking a higher leadership are more likely to be risk-taking. (b) most participants are risk-aversion no matter what initial status (win/lose) they were assigned to. (c) most people's risk-preference are consistent, especially when their initial expectations are met in the first game.	Research Paper/Project	Yutong (Thea) Liu	Dr. Michale Cook
Gano Assembly Room	2:30 PM	Compositions from New Orleans	Antonín Dvořák's Symphony No. 9 "From the New World" is exactly what its subtitle implies. Dvořák, a native Czech, wrote the piece while teaching at a conservatory in New York. He said he drew inspiration from the New World (hence the name), specifically from Native American melodies and African-American spirituals. However, the resulting symphony doesn't quite sound like either; in fact, it sounds more like the Czech style found throughout his repertoire. Nonetheless, the music, in addition to the sights, of the United States entered the creative mind of Dvořák and the unique symphony "From the New World" came out. Compositional inspiration can often take this form. The French "arabesque," though inspired by Arabic music and architecture, resembles in no way its source material. However, a distinct, embellished style sets it apart from other French compositions of its time. New sights are often an important source of inspiration for artists. An amateur composer myself, I decided to attempt to draw inspiration last summer from a true American melting pot: New Orleans. An epicenter of jazz, I dedicated myself to eat as many of my meals as I could at live music venues and write in-between. I took mass transit wherever I traveled, met and talked to people, and took in a lot of sights and experiences. I expected some kind of jazz-classical fusion work like Gershwin's Rhapsody in Blue. Indeed, I even sketched some themes for such a piece. What instead resulted was an outpouring of classical music for an ensemble I often write for: the clarinet quartet. It sounded quite different from what I've written before, and some movements like The Heat of New Orleans attempt to depict scenes from the Crescent City. Nonetheless, jazz melodies never popped into my head, despite listening to them for almost a week, but the input nonetheless produced a prolific output. Like Dvořák, I've drawn inspiration from a source to create something that hardly resembles its very source.	Performing/Visual Arts	Luke Lockhart	Dr. Langston Hemenway
PLC 112	8:30 AM	CAR-T Cell Therapy	The goal of this literature review is to educate and summarize the new "FDA-approved CAR T-cell therapies" (Immunotherapy Offers Options in Cancer Care, 2017). This paper explains the effects of CAR-T therapy on cancer patient outcomes as identified at an urban, teaching medical center. The research investigated was found via the electronic databases EBSCO, articles were also identified by an urban teaching hospital and sent via study group educator. There are various different cancer therapies available in current medical practice. The problem with today's cancer treatments is they eradicate the good and bad cells rather than just the cancer cells. Whereas, CAR- T cell therapy also referred to as Immunotherapy is, " is a biological therapy that uses the body's immune system to fight cancer" (Immunotherapy Offers Options in Cancer Care, 2017). Unlike radiation and chemotherapy, immunotherapy does not affect the patient's healthy cells but only targets the cancer cells. CAR- T cell therapy is currently in its clinical trial stages and being tested to treat leukemia and lymphoma.	Reserach Project/paper	Sarah Hunter	Dr. Aimee McDonald

PLC 112	8:50 AM	Investigation of the relationship of niclosamide induced apoptosis and autophagy cell death in MCF7 breast cancer cells	Breast cancer is one of the most commonly diagnosed cancers and is a major cause of death for women in the United States. Various treatments focus on cell death activation in targeted cancer cells. Autophagy, the cellular process of degrading cellular organelles and proteins, is normally a protective response to starvation. Recently, it has also been demonstrated to act as a unique cell death pathway. Apoptosis, cell suicide, is a well-characterized cell death pathway, and has often been the focus of investigation for inducing death in cancer cells. Autophagy and apoptosis are generally mutually inhibitory, but there have been cases observed in which autophagy may activate apoptosis. Niclosamide, a drug commonly prescribed as an anti-parasitic, has been identified as an autophagy inducer in MCF7 breast cancer cells. However, niclosamide can also induce apoptosis in cancer cells. This study investigates whether niclosamide induces apoptosis via the autophagy pathway, or an independent pathway. We exposed MCF7 breast cancer cells to varying concentrations of niclosamide and a known specific autophagy inducer, rapamycin, to investigate the incidence of autophagy compared to incidence of apoptosis using flow cytometry. We found that niclosamide is more potent than rapamycin, inducing autophagy on a different time scale, and producing more apoptosis than rapamycin. Future questions will investigate the mechanism of these observed differences in an effort to elucidate niclosamide's anti-cancer mechanism.	Research Paper/Project	Elizabeth Stevenson	Dr. Lori Wetmore
PLC 112	9:10 AM	Neurological Trauma Care and Disparities that Impact Patient Outcomes	Patients with TBI and other neurological manifestations as a result of trauma, account for more than 38% of Emergency Department Hospital visits (Jaja & Eghwrujakpor, 2014). In 2013, the CDC approximated that 2.8 million TBI-related ED visits, hospitalizations, and deaths occurred in the United States every year (Taylor, Bell, Breiding, & Xu, 2017). Given the statistics, it is imperative that more research be conducted on how to decrease brain injury fatalities in the United States, while also maximizing the quality of life in patients who survive. Findings from global research articles were used, and support the need for neurotrauma trained healthcare staff, and hospitals equipped to handle such cases. The purpose of this study is to show the importance of having equal access to a well-equipped healthcare team that can efficiently help patients with neurological injuries.	Research Project/paper	Marcia Caro	Dr. Aimee McDonald
PLC 112	10:00 AM	Progress Toward a Generalization of the Newton-Girard Formula	A symmetric polynomial is a polynomial in $n$ variables such that any permutation of the variables leaves the polynomial unchanged. This talk will present the progress towards proving a conjectured generalization of the Newton-Girard Formulas, which relate two types of symmetric polynomials: the elementary symmetric polynomials and the power sum symmetric polynomials. We have completed the case $\sum e^a = (1,1,2,3)$ and $n = 4$ and we will complete the generalization of this case when $\sum e^a = (a,a,b,c)$ and for some distinct non-negative integers $a, b,$ and $c$ and for any positive integer $n$ that is greater than or equal to 4.	Research Paper/Project	Macy Tush	Dr. Azadeh Rafizadeh
PLC 112	10:20 AM	Computational Investigation of Tryptophan Dimer Biosynthesis	Tryptophan is one of the essential amino acids that all living organisms need. It is a part of many reactions and can undergo dimerization, in which two tryptophan molecules combine. The creation of tryptophan dimers in the natural environment is one of the first steps in the subsequent biosynthesis of naturally occurring bacterial products, which have anti-tumor, antibacterial, and anti-fungal properties. The dimerization of tryptophan uses a variety of enzymes in the process to create the dimer. However, the reaction mechanism(s) under which these enzymes interact with tryptophan is unknown. Using computational software, we have calculated the binding energies of these enzymes with tryptophan as it goes through dimerization. Having the ability to evaluate the mechanism of this reaction will enable us to determine how this reaction is completed with the hope of being able to use similar enzymes to create novel tryptophan dimer products.	Research Paper/Project	Jesse Lundervold	Dr. Jason Morill
PLC 112	10:40 AM	THE STATISTICAL ANALYSIS OF THE EFFECT OF SABERMETRICS ON THE BALTIMORE ORIOLES	Sabermetrics is the statistical analysis of records to evaluate teams and players. This works purpose is to analyze the effect of Sabermetrics on baseball. In baseball it is used to optimize output in measuring and analyzing offensive, defensive, and pitching statistics. This study will look at the Baltimore Orioles and through using sabermetrics evaluate what the optimal lineup should be to produce the most output with the players available and compare it to the output the same team provided with the lineup they actually used.	Research Project/paper	Tyler Carpenter	Dr. Erin Martin

PLC 112	1:10 PM	The Gender of Resistance: Women in the American Revolution	This research project implements the increasingly popular practice of feminist historiography in its critical examination of the most important contributions made by women to the patriots' war effort in the American Revolution. The goal of this research is to create a comprehensive explanation of women's importance in the patriots' victory over the British; due to traditional historical practices, there are very few inclusive surveys of the subject. By examining an array of primary and secondary sources which provide insight into specific facets of women's roles in the American Revolution, this research ultimately supplies a greater understanding of how crucial women were to the success of the patriots.	Research Paper/Project	Hannah Fuhlhage	Dr. Christopher Wilkins
PLC 112	1:30 PM	Female Perspectives of Traditional Gender Stereotypes	Traditional gender stereotypes are characteristics that society has historically believed accurately described men or women. It was hypothesized that women in sororities would hold a higher rate of acceptance of traditional gender stereotypes than women not in sororities. Using the "Dimensions of Gender Stereotypes" created by Diekman and Eagly (2000), an internet survey was conducted targeting women attending William Jewell College to measure their acceptance of traditional gender stereotypes. The survey asked respondents about their beliefs of traditional male and female gender stereotypes, which each had subscales of cognitive abilities, personality traits, physical attributes, and negative characteristics. A total of 80 women participated in the survey, 31 of which were in sororities and 49 of which were not in a sorority. Independent-measures t-tests were conducted to examine the mean differences of acceptance of traditional male and female gender stereotypes between women in sororities and women not in sororities. While no findings were significant, all findings were in the predicted direction, that women in sororities accept traditional gender stereotypes to a higher degree than women not in sororities.	Research Paper/Project	Tiffany Eldridge	Dr. Keli Braitman
PLC 112	1:50 PM	The Exploration of the Number of Chromosome Copies in Cyanobacteria	Cyanobacteria is a bacteria phylum known to have polyploidy, or an organism with many sets of chromosomes. Depending on the strain, cyanobacteria ploidy ranges from as low as three copies to 218 genome copies (Griese, 2011). Bacterial strains are defined by their differences in genetic make up, so we assume there is a genetic factor that plays a role in determining the number of chromosome copies within a cyanobacteria species. Many studies have begun researching the mechanism of cyanobacteria replication, but it is still unknown why cyanobacteria have polyploidy, as it is most common to see bacteria as monoploid. We are curious if cyanobacteria know how many genome copies they replicate. Do cyanobacteria strains always make their minimum number of genome copies for survival? Do cyanobacteria just make as many copies of their genomes as time allows? If they know, do they know the volume of chromosomes they must copy, or how do they determine when there are "enough" chromosome copies made? Investigating cyanobacteria will expand upon our understanding of cell division and bacterial diversity.	Creative Project	Seki Anderson	Dr. Lilah Rahn-lee
PLC 112	2:10 PM	The Duchess of Malfi: An Echo Among Props	Prominently featured in the Elizabethan and Jacobean eras, the revenge tragedy investigates the relationship between truth and lies. To do so, many plays in this sub-genre of tragedy explore the boundaries between subjects and objects. Lies are perpetuated using objects, as is the case of the wax figures in The Duchess of Malfi. Likewise, the truth of a character's intent can be revealed in the personification of an object, as shown in the glove scene between Beatrice-Joanna and De Flores in The Changeling. In this analysis, Beatrice-Joanna and the Duchess are both subjects who suffer from rhetorical objectification. The object, when presented as a literal stage prop, is also effectively used to foreshadow impending assaults against both women, both directly and indirectly. Interest in the relationship between subject and object can be found in numerous publications from Andrew Sofer, who specializes in researching stage properties and their significance, to Peter Stallybrass, who analyzes the iconography of the glove and the sexualizing of the owner through penetration of the garment. Through a feminist reading of both The Duchess of Malfi and The Changeling, I propose that the vulnerability experienced by Beatrice-Joanna differs from the Duchess because of the former's willingness and the latter's resistance to engage in self-serving acts and revenge. Although both physically succumb to controlling forces, the Duchess further proves her inability to become an object by reappearing as the Echo after her death, the existence of the Duchess in a form that cannot be contained or physically defined.	Research Paper/Project	Rebecca Santiago	Dr. Sara Morrison

PLC 112	2:30 PM	The effect of ketone bodies on the lipid profiles of U87 glioblastoma cells	Previous research has indicated that a ketogenic diet has been a viable treatment option for epilepsy patients. In recent years, this research has been extended to other brain diseases. It has been hypothesized that exposing different kinds of brain cancer to ketogenic diets and conditions will make them more susceptible to radiation and other cancer treatment options. In this research, glioblastoma cells are exposed to varying levels of glucose with or without ketone bodies present, and the concentrations of different lipid molecules are measured through derivatization of the lipids to fatty acid methyl esters with analysis on a GC/MS instrument. It is hypothesized that when the cells are treated with ketone bodies in low glucose, a decrease in the fatty acid concentration within these cells will be observed. This hypothesis is formed under the idea that without glucose present, the cancer cells will be forced to utilize the beta oxidation pathway for metabolism of fatty acids instead. If this hypothesis is supported by this research, this could be an indication that the glioblastoma cells are under stress because they cannot take advantage of their primary metabolic pathway, which may provide valuable insight as to why the cells are more responsive to cancer treatments when the patient has been following a ketogenic diet.	Research Paper/Project	Alex Trask	Dr. E. Shane Price
WSC 107	8:30 AM	Statistical Sabermetrics Applied to the Anaheim Angels	The purpose of this work is to use statistical analysis to prove how Sabermetrics is changing the game of baseball in a significant manner, by applying it to the Anaheim Angels baseball organization. Sabermetrics was created by Bill James in 1980 to evaluate player performance based on statistical methods to measure offensive, defensive, and pitching performance. Sabermetrics is the statistical analysis of player records to evaluate and compare the performance of individual players to make the team better. This work goes to show how Sabermetrics works, where it originally came from, the basics behind the analysis of the statistics, and the application to the Anaheim Angels. After applying these methods to the Anaheim Angels, this will give results of an optimal lineup that should allow them to win the World Series.	research Project/paper	Brendan Beatty	Dr. Erin Martin
WSC 107	8:50 AM	Analysis of Relativistic Effects on Particle Motion in a Dipole Magnetic Field	Near Earth models of our planet's magnetic field can be modeled as a dipole. We are simulating the trajectories of atomic and subatomic particles in a dipole magnetic field, specifically within the Van Allen Radiation belts. The belts trap charged particles in the magnetosphere which helps to preserve the Earth's atmosphere. Many models have been created to model injection and loss values of protons due to storm sudden commencements and geomagnetic storms. The simulation was written in MATLAB to mathematically track the position of the particle via the Lorentz force equation. We calculated the longitude and latitude after every time step and use numerical analysis to determine the bounce and drift periods of each particle. Varying the parameters of the L-shell (2-7 Earth Radii), energy (10-1,000,000 keV), and pitch angle (5-85 degrees), we were able to appropriately analyze each motion. The data was compared to the current theoretical model and consistently yields errors of less than 1%. The simulation has potential to analyze motions over more realistic electric/magnetic fields as well as more complex motions due to electric field collisions among particles and space weather.	Research Paper/Project	Denver Strong	Dr. Blane Baker, Dr. Liu Kaijun
WSC 107	9:10 AM	Should All Hitters Increase their Launch Angle?	Recently in the game of baseball, many players have changed the path of their swing to increase their launch angle of the flight of the baseball off the bat. Increasing the degree of launch angle off the bat will cause hitters to produce more fly balls rather than ground balls. This change has caused lots of controversy as to whether it is more beneficial for each player to change their bat path. In this research I will determine whether there is a correlation between certain players height, weight, and the improvement or reduction in their production level when it comes to the statistical categories of on base percentage (obp), weighted on base percentage (wOBP), batting average, slugging percentage, strike out percentage, and wins above replacement (WAR).	Research Paper/Project	Robert Colburn	Dr. Erin Martin

WSC 107	10:00 AM	Divine Reactions to Unconventional Female Power in Canaanite Goddess Anat and Deborah and Yael of Judges 4 and 5	Judges 4 and 5 narrate an unusual case of women as Israel's saviors. Deborah and Yael hold central authority for carrying out Yahweh's wishes of defeating Israel's enemy. Deborah's command of Israel's defense and Yael's use of sensuality and deception to kill the opposing military leader, Sisera, subvert conventional ideas of divinely ordained female behavior. This research examines these phenomena in light of the ancient Canaanite goddess of love and war, Anat. Her ambiguity parallels that of Deborah and Yael, who engage in forceful warfare and powerful sensuality. All three figures' behaviors are not presented as exceptions to or transgressions of divine will but rather as aligning with it. Yahweh tells Deborah that Sisera will be delivered "into the hand of a woman" (Judges 4.9), and Anat's father and ruler of the Ugaritic divine realm, El, grants her apparently contradictory realms of operation. Consequently, all three exhibit characteristics of archetypical kingship that are almost exclusively associated with men in the Bible and in the Western literary tradition as a whole. These include wisdom, justice, fertility, and the ability to defeat chaos. These apparent exceptions to typical divine social constructions present an avenue for a more subversive, feminist understanding of divine attitudes toward "proper" female behavior, sexuality, and power.	Research Paper/Project	Erin Melton	Dr. Brendon Benz
WSC 107	10:20 AM	Fact vs. Fiction: Discovering the Truth Behind the Myth of the Mirabal Sisters	This research project examines the historical narratives of Caridad Svich's stage adaptation of Julia Alvarez's novel In the Time of the Butterflies. Because Alvarez wrote the novel as a work of historical fiction, several historical inconsistencies exist in the narrative presented by Alvarez and Svich. The goal of this research is to critically examine and compare this narrative and others presented by historians specializing in this area of Dominican history; ultimately, the product of this research is an accurate, comprehensive account of the era of Dominican history in which In the Time of the Butterflies is based.	Research Paper/Project	Hannah Fuhlhage	Dr. Chris McCoy
WSC 107	10:40 AM	Creating a New Consciousness Through a New Consciousness of Creation	Traditional interpretations of Genesis 1-3 promote the idea of a gender hierarchy where women were made to be subordinate beings created for the purpose of serving men. Though this reading does not reflect the nuances of the biblical narrative, it has allowed men to take possession of power and use it in oppressive ways against women. In his book Pedagogy of the Oppressed, Paulo Freire describes how people who have power exercise it against others through a method called prescription. Prescription, writes Freire, "represents the imposition of one individual's choice upon another, transforming the consciousness of the person prescribed to into one that conforms with the prescribers consciousness" (Freire, 47). Essentially, this is the method used in many Christian communities to promote the lifestyle of a "good Christian woman" that is supposedly informed by Genesis 1-3. According to Freire, one of the only ways to break free of this prescription is for women to be enabled to see for themselves the ways in which the former interpretation is damaging to their consciousness. Drawing on Freire's ideas, this presentation will demonstrate how this paradigm can be implemented with women who are in or come from oppressive church contexts. A comparison of texts from Genesis 1 and Genesis 2 and 3, including the order of creation and the source of creation, and a study of the meaning of such words as ÓófAdam ("man/humanity") and Óóezer ("helper") in the wider biblical context will highlight important nuances that get overlooked or concealed in traditional interpretations.	Research Paper/Project	Julia Parker	Dr. Brendon Benz

WSC 107	1:10 PM	Payday Loans: A Plague on Missouri's Poor	This research endeavor focuses on payday lending policy in the state of Missouri. There are two reasons for this. First, Missouri is one of the states with the most relaxed payday lending laws in the U.S. Second, the severe racial segregation in Missouri's urban areas, where payday lending firms are highest in number, challenges Murray and Putnam's assertions that the new class disparity is unrelated to race. While this might be true nationally, in specific states and regions, racial disparities have a significant impact on economic disparity. Part I of this essay will describe the problem: abusive payday lending. This section will apply Putnam and Murray's analyses by demonstrating that (1) payday lending creates cycles of poverty, leaving way for the rise of a new upper class and increased class disparity, and (2) racial disparities, while not as pronounced as before, still contribute significantly to economic disparity. Part II of this essay will list potential policy solutions and alternatives. Part III will provide counterarguments to these proposed policies. The policy debate on payday lending is centered around whether restrictions on lending would liberate borrowers from predatory lending and massive debts, or decrease access to necessary loans for working-class families to use on food and other necessities. Part IV will conclude by providing a final set of policy proposals, which includes a 36% cap on payday loan annual percentage rate.	Research Paper/Project	Madelyn Cox-Guerra	Dr. Gary Armstrong
WSC 107	1:30 PM	Oxford: A City Divided by Homelessness	Oxford is the least affordable city to live in within the United Kingdom. This means that the average wage divided by the average price of housing is the lowest of all cities in the country. This paints a stark contrast between the wealthy and destitute in Oxford, where thousands of students attend the University of Oxford. This project has two parts. First, it analyzes the local politics of Oxford and the pattern of increasing housing costs to explain the prevalence of homelessness in Oxford. Political tension prevents policies that solve homelessness from being passed. This conflict is primarily between the Labour Party and the Green Party. The Labour Party leaders in Oxford have rejected requests for squatting privileges for empty buildings during the winter months, as well as rejecting proposals to increase public lockers. Second, this essay examines possible policy and organizational solutions to the homelessness epidemic. The essay concludes that a political solution is necessary because the epidemic overstretched the resources of voluntary organizations in Oxford.	Research Project/paper	Madelyn Cox-Guerra	Dr. Gary Armstrong
WSC 107	1:50 PM	Affordable Housing and Evictions in KC, Then and Now	Kansas City, Missouri is home to an extraordinary income gap, geographically divided largely by the Troost line. A crucial factor in the creation and perpetuation of cyclical poverty is the shortage of livable, or even extant, affordable housing. This problem is exacerbated by the city's high eviction rates, particularly for low-income tenants of color. The factors allowing for this status quo include 20th century housing policies, government rhetoric, private-sector investment choices and policies, and the sociopolitical racial climate in the U.S. at large, and KC specifically, from the mid-1900s to now. An examination of the historical development of housing policy on national and state/local levels, beginning with the New Deal, will help explain the conditions conducive to concentrated poverty in public housing as well as the failure of public housing demolition to actually de-concentrate poverty and provide residents with socioeconomic mobility. Additionally, the media portrayal of public and low-income housing in KC will be interrogated, with consideration of the contribution of political rhetoric and public discourse. In addition to this policy study, the qualitative and quantitative research of Eviction KC, under the leadership of Tara Raghuvver, provides a framework to analyze the logistical and experiential impact of about 59,000 evictions in Jackson, Platte, and Clay Counties from 1999 to 2016. Building on this historical and research data, this study will address J.C. Nichols' role in shaping the geographical, socioeconomic, and racial structure of KC and his posthumous influence on city planning today.	Research Paper/Project	Erin Melton	Dr. Lori Wetmore

WSC 107	2:10 PM	Investigation of the impact of a Targeted Bone Development Gene Deletion on Heart Characteristics using Young and Aged Mouse Models	Heart disease is the leading cause of death for both men and women in the United States. Both cardiovascular disease and osteoporosis may be related by more than just aging. Research has shown that these two health problems share several common biological factors; specifically, low bone density (BMD) has been shown to be a risk factor in cardiovascular disease (Farhat and Cauley 2008). Low BMD has also been shown to correlate with left ventricular mass index (LVMI) in older women as well as correlate with left ventricular hypertrophy (LVH) in men (Huang and Li 2016, Lim et al. 2010). The Wnt/ $\beta$ -catenin cell signaling pathway plays a key role in bone development and maintenance. It has previously been shown that mice with a targeted deletion in a single allele of $\beta$ -catenin gene in osteocyte cells (HETcKO) have a reduced anabolic bone response after mechanical loading (Javaheri et al. 2014). This gene deletion resulted in age-related declines in bone properties and skeletal muscle function, with females being more severely affected at younger ages than males (Lara-Castillo et al. ASBMR 2016). Due to the link between heart and bone health we hypothesized that this reduced bone function may also alter the heart characteristics in aged mice. Heart weight (HW) to body weight (BW) ratio, as well as left ventricular wall thickness and total heart width, in 20 and 72-week old mice were calculated and averaged for control and HETcKO mice. To date, limited data indicates no significant alterations in heart characteristics.	Research Paper/Project	Davis Warton	Dr. Lori Wetmore
WSC 107	2:30 PM	Aquaponics in the Classroom	As a result of a longstanding relationship with Primitivo Garcia Elementary School, a team of Jewell professors and students began installing a sustainable aquaponics learning laboratory in this Kansas City Public School (KCPS). With funding from Campus Compact, the Kauffman Foundation and the Village Partners Program, the project was an interdisciplinary endeavor that began with the Non-Profit Department's development of a strategic plan for the aquaponics lab. This plan deemed the project viable, and construction and design planning began among the Biology, Chemistry Departments students and faculty. As construction was finalized, teacher training became the next priority. Using ideas from Jewell biology students, along with KCPS standards, I began to develop and design comprehensive lesson plans for the students to authentically learn about content related to the aquaponics system. After consulting the principal of Primitivo Garcia, I was tasked with creating weekly learning experiences in the aquaponics lab for fourth and fifth-grade students. I created thirty-one differentiated lesson plans. The learning experiences covered topics including: photosynthesis, life cycles, food chains, and metric system utilization. Once the lesson plans were completed, I assisted in the design of the laboratory classroom to finish the learning environment. The part of my project was completed by conducting an all-day training for the teachers to introduce and train them in implementing the new lesson plans. This presentation will cover the processes I used to develop the curriculum, lesson resources, classroom set-up, etc., and how I created and conducted the training.	Creative Project	Lydia Sturges	Dr. Lori Wetmore
Yates 210	8:30 AM	A future without the past: Perspectives on the progress of burgeoning Argentina	When Argentina's future as a nation was at a crossroads in the second half of the nineteenth century, two very different literary works provided insight to the importance of the country's development. Domingo Faustino Sarmiento was a South American politician, academic, and polemical figure who would later become President of Argentina. Facundo: Civilización i Barbarie, 1845, is a satirical story written to critique the leadership of then dictator Manuel de Rosas, while defining Argentina as effectively two countries, socially and geographically divided. These two distinct areas were regions of either "civilization" or of "barbarism." The civilized areas were "creole elite" cultural centers. The other area was the "pampas," the endless plains of the gauchos, Argentinian men who lived like western cowboys; as vagrants in the expanse too far from the city to subscribe to its influence. Martín Fierro, the epic poem of José Hernández, published in 1872, writes of the struggle and mischaracterization of the gaucho Martín Fierro, who seeks a simple life, faced with terrible situations. Fierro's struggles appear both very relatable and sometimes villainous. He is the 'other' part of the Argentinian population as suggested in Facundo. Societies do not progress without unified expansion. Sarmiento defines the lifestyle and stereotypes of the polarizing gaucho, uniquely Argentinian. As prolific as his contemporary, Hernández realized the raw humanity of the gaucho, and solidified the gaucho archetype as a symbol of	Research Paper/Project	Alex Blevins	Dr. Robert Wells

Yates 210	8:50 AM	Elitism in Humanities-Based Critique and its Impacts on Social Change, Exemplified through Reflections on Matt D'Avella's Minimalism	One of the roles of the humanities is that they, as Martha Nussbaum claims, contribute to social change by cultivating individuals to become democratic citizens who leads lives of critical thinking, empathy for others, and engaged living. Yet in a time of tremendous inequities, including an increasing lack of access to educational institutions teaching this citizenship, this classic view of humanities reveals the limited scope of liberal thought when it assumes there is a social base of faultless democratic institutions that could function completely equitably if only the correct kind of citizenship were cultivated. This contradiction has led others, such as Bruno Latour, to argue that the project of humanities-based critique is itself elitist and has "run out of steam." In this essay I critically examine both Nussbaum's and Latour's theories and argue that the purpose of the humanities is more as Loewy acquaint contends, to critique "established forms of collective life" and "nourish institutional critique." In the course of my argument I examine these humanities theories in their applications to real world systems of inequity and oppression, using as a reference point Matt D'Avella's documentary Minimalism, which advocates a lifestyle movement broadly characterized by living "small" in order to seek more meaningful relationships and experiences. However, this philosophy is largely advocated for by upper-middle-class Americans who have been able to accrue and subsequently shun material wealth. This cultural text is therefore helpful in examining the difference between changing individual perspectives and lifestyles and actual social change.	Research project/paper	Erin Melton	Dr. Jennifer Cotter
Yates 210	9:10 AM	US Imperialism in El Salvador	The history of El Salvador is full of war, poverty, and human rights violations. Though all nations experience hardships, in El Salvador these were the result of centuries of Spanish imperialism and then, beginning in the 19th century, of US-backed political dictators, US-led military operations, and economic arrangements that favored US interests. In addition, US leaders chose to ignore horrible accounts of human rights violations, choosing instead to continue supporting a government that exploited and abused its people. When many people remained silent, poet, author, and political activist Roque Dalton (1935-1975) chose to write about the injustices in his home country of El Salvador. Dalton was very critical of US imperialism in his essay Imperialismo y revoluci3n en Centroam3rica, specifically calling out the negative repercussions of US intervention. Using the works of Roque Dalton, my research focuses on how US intervention in El Salvador created a political, economic, and ideological dependency on the US. My presentation will analyze the devastating effects of US imperialism on El Salvador, ultimately concluding that El Salvador has been plagued by American "assistance" throughout history and still today.	Research Paper/Project	Samantha Schaer	Dr. Robert Wells
Yates 210	10:00 AM	Pragmatism and Prophecy: The Romans Responses to Oriental Religions	Since at least the third century BCE, the Romans had shown a willingness to add foreign divinities to their pantheon - as long as these divinities, their rituals, and their priesthoods did not seriously violate Roman cultural values or even seemed to meet a current need. Analysis of the import of several such divinities, including the Asiatic Cybele, Mithras, and Dionysus, reveals that the Roman Senate had developed a list of criteria to facilitate acceptance or rejection of imported cultus. By the first century BCE, Judaism and its central divinity, Yahweh, were certainly known to and accepted in the Roman world, if not in the official pantheon, since Romans could not properly worship both Yahweh and other divinities. Thus, the criteria were revised. When Christianity was introduced, not much later, the initial expectation indicates that the now revised criteria would apply. The reasons why this expectation was confounded, and the results for the subsequent relationship between Romans, Jews, and Christians, are investigated in this research.	Research Paper/Project	Alex Trask	Dr. Jane Woodruff

Yates 210	10:20 AM	Identity in Dominican Diaspora Literature in the United States	My proposed presentation is a section of my honors project, which examines constructions of identity in seven works of literature pertaining to the Dominican diaspora in the United States. The diaspora was a result of the Trujillo dictatorship, which ruled the Dominican Republic from 1930 to 1961. The dictatorship had very clearly racialized and gendered ideas of what it meant to be Dominican-Trujillo was the ultimate symbol of a light-skinned male with power over the women of the island. The diaspora created by those escaping from his oppressive regime and those migrating in its aftermath only served to further confuse the definition of Dominicaness. The navigation of identity in works of Dominican diaspora literature forces a reconciliation of Dominican and American identities, the conflicts between which are particularly seen in the gender politics presented in novels and short stories by Junot Díaz and Julia Alvarez. In Díaz's <i>Drown</i> (1996), <i>The Brief, Wondrous Life of Oscar Wao</i> (2008), and <i>This is How you Lose Her</i> (2012) and in Alvarez's <i>In the Time of the Butterflies</i> (1994) and <i>How the García Girls Lost Their Accents</i> (1991), the effects of the idealization of virile masculinity in Dominican culture manifest themselves in issues of sexual repression and dysfunctional romance experienced by the characters.	Research Paper/Project	Elizabeth Tucker	Dr. J. David Lisenby
Yates 210	10:40 AM	Monumentum aere perennius: Cicero and Roman Hegemony	Marcus Tullius Cicero's pivotal role in the final years of the Roman Republic, his impact upon republican political theory (particularly upon the thinking of the American "Founding Fathers"), and his rhetorical influence on later public figures such as Thomas Jefferson, Abraham Lincoln, and Winston Churchill, are all generally acknowledged by historians and political theorists alike. However, too many of these, e.g., Anthony Everett, Adrian Goldsworthy, and J. Budziszewski, have failed to recognize that Ciceronian political theory actually served as the foundational underpinning of the Romans' own provincial governance, including their justification for their hegemony as a "just" governance because it not only supported the "public interest" but also allowed the use of harsh measures, when deemed necessary, to maintain the Roman peace. This foundational centrality of Ciceronian thought to the governance of their imperium can clearly be seen in the Romans' provincial modus operandi during the period known as the Pax Romana (c. 27 BCE-180 CE), through an analysis of the nature of Roman governance in the geographically and culturally distinct provinciae of Britannia, Pontus, and Bithynia.	Research project/paper	Jameson O'Connor	Dr. Jane Woodruff
Yates 210	1:10 PM	Illuminating a Pattern of White Supremacy in American Authorship: Control of Texts by Pontiac, Tecumseh, and Phillis Wheatley	Throughout American history, white control over the lives and opportunities of marginalized people has been paralleled by white control over their authorship and texts. This literary control can be classified into two main categories: that of the actual alteration of text and that of framing, or how the presentation of the text by whites determines its message and reception for audiences thereby obscuring the original message of the author. This paper examines texts by three minority authors, namely Pontiac's "Speech at Detroit," Tecumseh's "Speech to the Osages," and various poems by Phillis Wheatley, explaining how each suffered under the aforementioned areas of white control. For the speeches of Pontiac and Tecumseh, the context in which each speech appeared affected its reception. The presence of Tecumseh's speech in a 19th century captivity narrative framed its meaning for white audiences. In the case of Pontiac's "Speech at Detroit," questions of veracity and authenticity are raised, particularly when noting Francis Parkman's-the speech is found in his <i>The Conspiracy of Pontiac</i> -purported reputation for fabrication of facts. For Wheatley, whites limited her authorship through her inability to be published in America-she had to travel to England to publish initially-and she had to make the subversion in her poetry subtle in order to be published at all. By examining the textual control over works by individuals of multiple ethnic backgrounds in multiple time periods, this paper will illuminate a pattern of white supremacy in American authorship and literature.	Research Paper/Project	Elliott Yoakum	Dr. Ruth Williams

Yates 210	1:30 PM	Music Transcends Borders	The Hall Family Summer Research Grant afforded me the opportunity to observe and experience the effects of diverse religious intersections in countries where Judaism, Islam, and Orthodox Christianity are more prominently practiced. My presentation will analyze the ways in which diverse peoples use music in times of crisis and trauma, with the intent of further understanding the benefits of the growing practice of music therapy. Jews, Muslims, and Christians not only share common theistic roots, but are affected by musical styles practiced in times of trauma. I will highlight specific experiences that I had in the various countries I visited, which include Israel, Palestine, Turkey, Greece, Macedonia, Serbia, Bosnia, Croatia, Hungary, and Ukraine, and will discuss the wide influence that Western culture and Pop music have on parts of the world unfamiliar to most Americans. My goal in presenting this research is to reveal several underlying common perceptions of marginalized cultures, religions, and countries, and demonstrate that people are alike in more ways than we might acknowledge. Music acts as a bond among those who find themselves politically, economically and religiously oppressed. Ultimately, music evokes emotion that transcends cultures and locations, connecting us all in our shared human experience. International borders do not hinder the depth to which we intentionally seek human understanding, as we so often believe they do, but rather encourage appreciation of differing experiences all around.	Research Paper/Project	Jacqueline Parson	Dr. Ron Witzke
Yates 210	1:50 PM	Traditions in Tension: Developments of Christian Beliefs in the First and Second Centuries	The teachings, or doctrines of Christianity are often perceived as having developed linearly and smoothly from the teachings of Christ to early Catholicism, after which there was little change until the time of the Reformation. However, Christianity did not always exhibit the monolithic face that medieval Catholicism put forward. Following the crucifixion of Jesus Christ, his followers spread his message across the ancient world and different interpretations of his teachings emerged among different regions and peoples. A comparison of the message of Jesus with the teachings of Paul of Tarsus will convey the earliest differences in theology that emerged in the early decades of what we now call Christianity. From the second century onward, variations within Christianity emerged, which only later were deemed "heretical." Gnosticism, represents a set of Christian beliefs that held a dramatically different view of the cosmic order and the human condition on Earth. Following the examination of theological development from Jesus to Paul, I will explore the gnostic example of an early tradition that lost the battle for Christian souls and was left in the ancient past.	Research Paper/Project	Andrew Ford	Dr. Bradley Chance
Yates 210	2:10 PM	Addressing Health Disparities in the LGBTQIA+ Community	Individuals that identify as members of the lesbian, gay, bisexual, transgender, queer and questioning, intersex, and asexual (LGBTQIA+) community experience higher rates of discrimination in health care setting when compared to their heterosexual peers, which is linked to decreases in physical and mental wellness. The goal of this literature review is to acknowledge what factors are linked to health disparities experienced disproportionately by the LGBTQIA+ community, as well as summarize the most effective ways to address these issues in a health care setting to better promote wellness in this community. The CINAHL database and PubMed Central digital archive database were employed in order to cater evidence for this review. Stigmatization, social distress, peer victimization, fear of rejection from family, fear of identity disclosure to health care providers, and other internalized factors are vexing issues (Hafeez et al., 2017). Additionally, a high percentage of LGBTQIA+ individuals experience multifaceted marginalization and disadvantages, such as low socioeconomic status, which can further complicate their ability to access services and education regarding their health needs. Unawareness of existing LGBTQIA+ specific health resources is an issue as well (Daley et al., 2011). Furthermore, health care providers often have deficient training and lack the appropriate knowledge of language used in regard to the specific needs of this community (Charest et al., 2016). Inadequate training allows for the continuation of discrimination, misconception, and bigotry, which leads to substandard medical treatment as well as an inflation of disease incidence and other detrimental health related factors. Physicians require increased awareness and visibility of specific challenges faced by the LGBTQIA+ community as well as recognize personal prejudice in order to provide more inclusive, high-quality, evidence-based care and welcoming, affirming environments (Law et al., 2015). Integration of pertinent educational curricula and training regarding the needs of this population is also necessary to bridge the gap in this health inequity (Desrosiers et al., 2016). In general, both structural and individual changes are needed in order to address health disparities, and more research is required in order to better understand the specific needs and challenges faced by the LGBTQIA+ community.	Reserach Project/paper	Paige Soukup	Dr Aimee McDonald

Yates 210	2:30 PM	Creative Writing Project: "Those Summers"	The short story "Those Summers" follows a young woman's reflections on her childhood summers at her parents' lake condo, where she learned about hardship, love, and herself. The story experiments with second person point of view and past tense to create an atmosphere of nostalgia for this coming-of-age tale. As a creative writing project, "Those Summers" reflects the author's developing ability to balance character development with plot.	Creative Project	Kaitlyn O'neal	Dr. Mark Walters
Yates 221	8:30 AM	Flower Orientation Affects Butterflies in an Unexpected Way	In life, all organisms attempt to gain energy while expending the least amount of energy. Butterflies gain energy by foraging for nectar in flowers and maximize energy gain by minimizing unnecessary wing beats while foraging. We wondered if the orientation of a flower would affect the number of times a butterfly beats its wings. We believed that on a vertical flower, butterflies would beat their wings more time for stability. We then predicted that butterflies would beat their wings more times per minute on vertical flowers than on horizontal flowers. We recorded 100 videos of butterflies foraging on horizontal and vertical flowers. We measured the angle of the flower from the stem in degrees to classify it as horizontal or vertical. We then counted the number of beats per minute for each video. We performed several ANOVA's to determine the effects of wind, air temperature, and flower orientation on the number of wing beats per minute. We found no effect of wind or air temperature on wing beat, but our results for flower orientation were significantly significant ( $F(1,89)=6.9, p<0.01$ ). However, butterflies beat their wings more on horizontal flowers. We concluded that butterflies beat their wings more times on horizontal flowers due to thermoregulation. On horizontal flowers, butterflies are in a position to absorb more direct heat from the sun, increasing body temperature. Therefore, we hypothesize that butterflies beat their wings more often on horizontal flowers to dissipate heat. Further study measuring butterfly body temperature would verify this claim.	Research Paper/Project	Kelsey Lanteman, Austyn McIntyre	Professor Anne Nickel
Yates 221	8:50 AM	Role of Leg Length on Pollen Load of Moths and Butterflies	Pollination is a mutualistic relationship between insects and flowering plants, trading nectar for pollination services. Some insects are more effective pollinators than others due to body size, structure of mouthparts, hairiness, and behavior. The goal of our research was to understand how leg length differences between moths and butterflies may influence pollination. Our hypothesis was that pollen load will negatively correlate with leg length. Since shorter legs lead to the animal's body being closer to the flower, the insect with the shortest legs will have a higher pollen load because they will collect more pollen on their bodies while feeding on nectar. For our research, 23 wild-caught butterflies and moths were examined for leg length and pollen load. We measured the rear femur and thorax length of each specimen, and after removing pollen from the bodies, counted the number of pollen grains on each individual. We found that moths had significantly longer legs than butterflies when corrected for body size ( $p$ -value: 0.016; $F$ value: 6.93). Butterflies had significantly more pollen on their bodies than moths, with a mean of 450 pollen grains and 225 pollen grains for butterflies and moths, respectively. Therefore, pollen load was negatively correlated with leg length, and showed that the animal with the shorter legs, the butterfly, tends to carry the most pollen ( $p$ -value: 0.017; $F$ value: 6.78). In light of the decreasing population of bees, future research on the comparative pollen load of butterflies and bees is essential in discovering the effectiveness of future pollinators.	Research Paper/Project	Kayla Crowder, Isaac Chizhik	Professor Anne Nickel
Yates 221	9:10 AM	Is the invasiveness of bush honeysuckle ( <i>Lonicera maackii</i> ) due to evading enemies?: Testing the enemy release hypothesis	When invasive plants are introduced to an area they outcompete native plants for resources, which can lower biodiversity causing harm to the environment. The success of invasive plant species, like bush honeysuckle ( <i>Lonicera maackii</i> ), may partially be due to the lack of natural predators in invaded areas, known as enemy release. Honeysuckle experiences minimal herbivory and we aimed to examine if this was linked to release from enemies. We provided generalist webworms ( <i>Hyphantria cunea</i> ) with a choice of leaves from a native webworm host (maple) and bush honeysuckle to determine if the caterpillars would exhibit a preference. We hypothesized that webworms would prefer eating maple. Data indicated that webworms did not eat one leaf type more than the other ( $t(9) = -1.007, p = 0.3431$ ). We also investigated if webworm growth would be affected if fed exclusively honeysuckle. We hypothesized that eating honeysuckle alone would inhibit growth in the webworms. Results indicated that webworms gained significantly more mass when eating honeysuckle than when eating maple ( $F(1,18) = 9.57; p = 0.006$ ). Results show that webworms eat and even thrive on honeysuckle, so release from enemies does not directly explain the lack of herbivory seen in the field. Further experiments are needed to address and fully understand why webworms do not select honeysuckle as a forage plant, and if webworms could be introduced to honeysuckle stands for biological control.	Research Paper/Project	Aubret Kent, Jordan Day, Kylie Jorgensen	Professor Anne Nickel

Yates 221	10:00 AM	Educational Interventions to Reduce Heart Failure Readmission Rates	Almkuist (2017) describes how heart failure effects 5.7 million people in the United States and how one in four patients discharged with a heart failure diagnosis are readmitted within a thirty day period. Three factors contributing to increased readmission rates in patients with heart failure. These three factors include the level of patient education, execution of patient discharge plans, and coordination of care after a patient is discharged (Aspenson & Hazaray, 2012). Regarding patient education, Aspenson and Hazaray (2012) discuss how patients face challenges with medication, understanding the physiology of their heart failure, and not knowing who to call if they have questions. In order to reduce readmission rates, save hospitals money, and provide the best care to patients possible, nurses and other healthcare providers must educate patients and themselves throughout the entirety of their inpatient stay and provide a telehealth service following discharge (Aspenson & Hazaray, 2012).	Research Paper/Project	Elaine Barella, Emma Jones, Katie Jones	Professor Lindsey Carlson
Yates 221	10:20 AM	Pawsitive Interactions: a pilot program	This past fall, I partnered with Kansas City Pet Project to launch a pilot animal fostering program on campus, called Pawsitive Interactions. The program was introduced to the campus by first having two resident directors participate in fostering. Katie Lisle, in the upperclassman dorm Semple, fostered dogs and Sydney Cotton, in the freshman dorm Eaton, fostered kittens. The goal of the program was to provide additional enrichment to campus life by creating a firsthand experience for students to interact with, and learn about how they could help homeless animals in our community. Students wrote bios about the foster dogs' personalities and took wonderful photos, which were made available on the shelter's website for potential adopters to see and are key marketing tools in promoting shelter animals. This presentation will discuss the background that went into setting up the program, provide an overview of how the program ran this past year, and assess the viability of the program's future. I will share the year's adoption statistics of the program and the happy adoption stories that went with them. Additionally, the current foster dog at the time will be involved in the presentation.	Creative Project	Riley Siuda	Ms. Katie Lisle
Yates 221	1:10 PM	World War Two Documentary	Since the end of World War Two in 1945, society has tried to understand the atrocities that happened during the war. Often times in doing so, the emotion and humanity are stripped away, sterilized, and put into a text book. In the summer of 2017, I used my journey grant to embark on an incredible journey across Poland. During this time I was able to go to several W.W.2 museums, and see many memorial sights. More importantly, I was able to document several hours worth of my grandparents childhood memories of World War Two. For my presentation, I would like to share a small portion of these stories along side some of unique experiences and lessons that I learned while in Poland. Below is a link to view a short documentary of their stories: <a href="https://www.youtube.com/watch?v=2QWrI0rvOH8&amp;t=73s">https://www.youtube.com/watch?v=2QWrI0rvOH8&amp;t=73s</a> .	Performing/Visual Arts	Sarah King	Ms. Sara Round
Yates 221	1:30 PM	"Conflict (noun)." A Self-Published Book	For those of us privileged enough to live far from the borders of the world's great wars, it can be difficult to comprehend that experience. Typically, as an attempt to understand these realities, we collectively refer to them as "conflict," despite lacking a nuanced understanding of what this term implies. "Conflict (noun)." is a book intended to address this ambiguity; to highlight the nuances of conflict and to explore the reality that the word "conflict" is a collective term referring to diverse and unpredictable situations. This book is not intended to provide thorough analysis (nor analyses) of contemporary conflicts. This book is intended to highlight diversity, humanize distant realities and compel readers to question their own experiences. This book features testimonies from individuals affected by conflict throughout the Middle East, Eastern and Central Europe. Six conflicts, different in size, nature, scale and location are represented and the perspectives of people from contrasting backgrounds are presented. I have published this book to challenge binary, black-and-white conceptions of conflicts and illuminate the assumptions we make every day when we interact with and interpret the world from only our own perspective."	Creative Project	Sofia Arthurs-Schoppe	Dr. Deborah Chasteen

Yates 221	1:50 PM	Genocide and Ethnic Cleansing	Project Thesis: The US has said that the Rohingya crisis in Myanmar is a case more of "ethnic cleansing" than genocide. Governments frequently make this distinction to avoid action in genocide. This project will argue that ethnic cleansing (without foreign intervention) will almost always lead to genocide, and therefore the international community should always oppose ethnic cleansing. This project is intended to showcase the current weaknesses present in the UN definition of genocide. We have chosen to focus on ethnic cleansing, an act that is almost always a precursor to genocide, in order to demonstrate that the horror of genocide can be avoided by more focus on ethnic cleansing. Our project will use the Rohingya crisis to explain the distinction. We will also critique the argument from Chaim Kaufmann that forcible population transfers can lead to peace. We will argue that the international community should transition to a Responsibility to Prevent which would justify intervention in both cases of genocide and ethnic cleansing.	Research Paper/Project	Blaike Cook, Troy Williams	Dr. Gary Armstrong
Yates 221	2:10 PM	Human Trafficking Policy and the Impact on the Nonprofit Sector	Public policy on human trafficking is a highly contentious topic in the United States. One type of public policy that has been successful in countries outside of the U.S. is the Nordic Model. The Nordic model allows individuals practicing prostitution to seek help for medical and legal purposes with no legal repercussions. The buyer of these services however, does face legal repercussions if caught. My research is focused on the benefits of this model while examining the impact of the model on Nonprofit Organizations. I will argue that this model is beneficial for all parties involved: the seller, buyer, legal professionals, and nonprofits. Using knowledge I gained through a study abroad course on sex trafficking this past Summer, in Copenhagen, Denmark where prostitution is legal, my research will demonstrate the benefits of the Nordic model within the nonprofit world in the United States. Finally, I will examine how local nonprofits are responding to the rise in human trafficking in the past few years.	Research Paper/Project	Taylor Ekart	Dr. Tom Vansaghi
Yates 221	2:30 PM	U.S. Foreign Policy, the Liberal Democratic Peace, & Regime Change in the Middle East	This Project will examine the Liberal Democratic Peace Theory (LDPT) and its utility while creating United States foreign policy. The LDPT states that no two liberal democracies have engaged in war with each other because of their similar values and institutions, leading many to believe that war and conflict can be eradicated by the spread of liberal democracy. This is significant because the Theory has undergirded decades of U.S. foreign policy and has been advocated for by both Republicans and Democrats-it is generally accepted that the U.S. should support liberal democracy wherever it might spring up around the globe. However, I contend that the practicality of the LDPT has a serious weakness. Since liberal democratic regimes interact with illiberal regimes in their regions under classical geopolitical precepts, spreading liberal democracy to either an individual state or to only a minority of states within an illiberal region does not increase the prospects for regional peace and stability. I will argue in particular that justifying the Iraq War by spreading democracy would fail the problem I propose.	Research Paper/Project	Jameson O'Connor	Dr. Gary Armstrong
Yates 222	8:30 AM	The Impact of the Brain on Learning	It is well-known that the brain directs the functions of the human body. One of its primary functions is that of learning. As stimuli are introduced, neurons fire through the brain in order to make connections to already existing neurons. These connections, also known as synapses, are what enable students to learn and remember information for years to come. Classrooms across the world are designed with the goal of furthering students' learning; therefore, understanding the way a student's brain operates should be important to educators everywhere. Recent brain research has proven that there are environments and mental states in which the brain is better able to learn. In this presentation, we will discuss how emotion, motivation, and movement influence the quality of student learning.	Research Paper/Project	Lydia Sturges, Abigail Shultz, Carley Wood, Jacqueline Leonard, Molly Meeks, Rebecca Blair	Dr. Jeanine Hastings

Yates 222	8:50 AM	The Flint Water Crisis: How Lead Exposure Effects Stem Cells	In 2014, the Flint Michigan Water Crisis exposed potentially 100,000 residents to lead-contaminated water. Lead is known to negatively affect development, lead to infertility, and even premature death. Previous research has demonstrated that embryos exposed to lead show serious developmental and cognitive defects. However, the effects of prenatal lead exposure on stem cells are unknown. Developing embryonic cells begin as pluripotent stem cells, differentiating into different cell types over time. Our research aims to study the effects of lead on stem cell determination, differentiation, and cell death of neurons. As embryos develop, stem cells are signaled to become a particular cell type, and then are able to physically become that cell type. Because lead exposure during pregnancy can cause birth defects, we hypothesize that, after treatment with lead, we will observe hindered determination and differentiation, as well as increased levels of apoptosis. This research will give a better understanding of how developing embryos are affected by exposure to lead toxicity due to its effects on differentiating stem cells.	Research Paper/Project	Clayton Mansel, Jesse Rose, Shaneann Fross	Dr. Bhupinder Vohra
Yates 222	9:10 AM	Understanding the Role of Golgi Fragmentation in Axon Degeneration	Continuous wave Electron Paramagnetic Resonance (EPR) spectra have been obtained for the $1.9\text{Na}_2\text{O} \cdot \text{SiO}_2$ glass system. Experimental results suggest the presence of coupling between unpaired electrons and $^{23}\text{Na}$ nuclear spins via electron-nuclear spin hyperfine interactions. In addition, spectral features indicate that hyperfine interactions exhibit two unique directions within the lattice. Given these observations, experimental spectra are modeled with MATLAB using Easyspin. Initial fits to the data yield the following values $g_{\parallel}=2.3244$ , $g_{\perp}=2.0503$ and $(A/h)_{\parallel}=443.7276$ MHz, $(A/h)_{\perp}=86.8772$ MHz. Additional fits to the data will be discussed during the presentation.	Research Paper/Project	Tana Pottorf	Dr. Bhupinder Vohra
Yates 222	10:00 AM	How Does Social Justice Apply to a Critical Thinking College?	This presentation will outline the experiences of five Jewell students at the 30th annual Creating Change conference. Each student will discuss main ideas and suggestions that they have to benefit the Jewell community and augment the work currently being done by the diversity and inclusion plan that was presented at the beginning of this school year. Topics will include: increasing political engagement, particularly using the work done by the Trevor Project; debunking myths of social justice and ways to work towards its relevance on Jewell's campus; bringing awareness of international crises to campus and how to become more informed and supportive of international communities; increasing support for marginalized students on campus; and understanding how white supremacy conditions us in our every day lives. Overall, this presentation's goal is to reinvigorate Jewell's commitment to social justice and show that it is integral to building a critically thinking community.	Creative Project	Elliott Yoakum, Samantha Fulte, Emily Hemphill, Jacqueline Pasron, Spencer Ruwe	Dr. Rose Reynolds
Yates 222	10:20 AM	International Day of Women and Girls in Science: A Review	Just as in many other specializations, there is a vast gender gap within STEM. According to the National Science Foundation's (NSF), Science and Engineering Indicators of 2016, women make-up half of the total U.S. college educated workforce but less than 30% of the science and engineering workforce. One initiative that has been established to reduce this gender gap is the International Day of Women and Girls in Science, an annual event celebrated on the 11th of February and protected by the United Nations General Assembly Resolution 70/212. This year three Jewell students traveled to the United Nations Headquarters in New York City to attend a conference pertaining to the third International Day of Women and Girls in Science. Through this presentation two of these students will present a review and summary of the topics discussed at this conference as well as comment on how these findings can be applied to higher education, including on Jewell's campus.	Creative Project	Sofia Arthurs-Schoppe, Sam Flute	Dr. Maggie Sherer

Yates 222	10:40 AM	How Shall I Proceed?	From the Civil Rights Movement of the 1960's to the Million Man March in 1995, civil disobedience has been a vehicle used to question the majority and to denounce systematic oppression against the marginalized. Ongoing events in our country continue to inspire protests though many forms have been met with disapproval. It is the continued opposition to varying forms of protest i.e. kneeling, hashtags, marches, and political statements made outside of the political sphere, that inspired the creation of How Shall I Proceed? Protest and poetry are interrelated by three mutual components: inspiration, content, and form. Protest, much like poetry, is inspired by incidents which call for attention. The content is what needs to be said. Form is crucial in both protest and poetry because the content can be life-altering but if the form is not chosen with intent, the inspiration and content can be overshadowed. Influenced by hundreds of hours of reading political poetry, political commentary on race, gender, ethnic relations, and visiting the Missouri History Museum for the exhibition entitled #1 In Civil Rights, this collection is both personal and public. This collection addresses topics ranging from police brutality to sexual harassment, ethnic erasure, and the uncertainty surrounding ethnic hybridity in the current (un)United States. How Shall I Proceed? offers an academic look at the creation of poetry in varying forms while questioning the effectiveness of strict/fluid form in protest and considering the sphere of influence every individual has, whether on the page or in person.	Creative Project	Rebecca Santiago	Dr. Ruth Williams
Yates 222	1:10 PM	Factors influencing neophobia and its short-term repeatability in the Florida Scrub-Jay ( <i>Aphelocoma coerulescens</i> )	Neophobia is defined as fear and avoidance of novel objects. In birds, neophobia is correlated to boldness (or shyness), tolerance of environmental changes, risk avoidance, territorial defense or exploration, and thus contributes to forming the personality of an individual bird. Because the Florida Scrub-Jay ( <i>Aphelocoma coerulescens</i> ) depends on post-fire successional stages of oak scrub in Florida, they experience a wide range of habitat structure. Our goals were to examine how neophobia varies relative to successional stage and to assess factors that influence the short-term repeatability of neophobia. We conducted this research at Archbold Biological Station in Lake Placid, Florida. We conducted repeated neophobia trials for 36 juvenile jays from 19 territories and assessed latency to enter a baited trap one day after being banded. We gave individuals 600 seconds to approach a novel object and measured neophobia as latency to eat in the presence of the object. Latency in neophobia trials was not correlated with latency to approach a baited trap the day after a bird was trapped, suggesting that neophobia and fear may be distinct behavioral responses. Results of neophobia trials were not repeatable. We also found no relationship between habitat structure and neophobic behavior: neophobia of jays from open habitats did not differ from those in denser habitats. We conclude that neophobia is more dynamic than previously believed, and that the Florida Scrub-Jay exhibits behavioral plasticity. In addition, further research is necessary to determine the degree to which the jays associate novelty or reward with the novel objects.	Research Paper/Project	Johanna Alpert	Dr. Rose Reynolds
Yates 222	1:30 PM	Can Worms Help Us Cure Breast Cancer? Exploring the Utility of Model Organisms	Novel drug discovery studies on humans are inherently difficult due to organismal complexity, long lifetimes, ethical considerations, and expense. Therefore, our current knowledge of human disease at the molecular level is derived from the study of simple, low-level organisms such as bacteria, worms, zebrafish, and mice. In the last hundred years, researchers have discovered that the molecular mechanisms underlying many disease pathologies is astonishingly conserved from single-celled organisms to humans. However, any particular organism may not be an effective model for every disease. This leads one to ask: what sorts of considerations must be made in evaluating a model organism's usefulness? This presentation will discuss various factors that affect model organism studies through the lens of <i>Caenorhabditis elegans</i> a soil-dwelling roundworm used to study human hereditary breast cancer. Harmful mutations in the human BRCA1 and BRCA2 tumor-suppressor genes increase a woman's chances of developing breast cancer by over the course of her life as much as 72%. <i>C. elegans</i> contain an orthologous gene <i>brc-1</i> and studies show similar functionality between the <i>brc-1</i> and BRCA genes-highlighting <i>C. elegans</i> as an alluring model organism candidate for drug discovery.	Research Paper/Project	Clayton Mansel	Dr. Rose Reynolds

Yates 222	1:50 PM	Wait and Seed- Building a School Garden	Urban gardening is the practice of growing food in an urban or suburban environment. In January of 2017, I began planning one of these gardens to be placed on the Miller Park Campus in Lee's Summit, Missouri. The programs on this campus are part of the R7 district, and serve special needs kids of all ages and abilities. With my Journey Grant, I designed and installed a garden space composed of five raised beds and two peach trees in an unused area of grass on the property. Since its completion, the garden has been a resounding success. The students enjoy having a garden on campus, both as a place of learning and relaxation. The garden will continue to be utilized for years to come. Kids will better understand where their food comes from, and additionally, be inspired to try vegetables they may not have been exposed to otherwise. For example, students in the GREAT Program have already had the opportunity to try roasted carrots and okra. The garden also offers the added benefit of being a place where students can go during the day to get out of the classroom and interact with nature. They learn responsibility by taking care of these plants and experience pride when seeing them grow. If more gardens like this were installed in schools, more students would be given the opportunity to benefit from these experiences.	Research Paper/Project	Paige Shoemaker	Professor Kevin Shaffstall
Yates 222	2:10 PM	A Probabilistic Analysis of the Card Game "Lost Cities"	We used standard tools of combinatorics and Markov chains to study the card game Lost Cities. Lost Cities, like Monopoly or Risk, is a game with a mixture of chance and strategy that can be modeled via Markov chains and hypergeometric distributions. Applying these tools, we derived formulas assisting in game play strategy by calculating expected wait time for receiving high-scoring cards and by calculating probabilities of accruing certain amounts of points that dictate loss or victory.	Research Paper/Project	Valerie Yeutter	Dr. David McCune
PLC Third Floor	3:00 PM	Summer with Sunny	As part of the Business Capstone, we were tasked with creating a product or service targeted to a specific consumer base. Through this project we will develop a product similar to that of the "Elf on the Shelf" concept. "Summer with Sunny" is a product that is targeted to Generation Y parents who will use Sunny as a tool to help contain, entertain, and utilize as a behavioral teaching tool for their children during those three long summer months. Sunny, much like Elf on the Shelf, will come with a book that depicts Sunny's summertime leading up to the start of school. Along with the book the customer will receive Sunny the doll. The parents can utilize Sunny in any way that they desire; however, the goal of the doll is to incentivize children to behave well for their parents while on summer break.	Creative Project	Nichole Marquis, Karoline Wiens, Taylor Friesen, Madison Giles, Will Hyde	Professor Shelly McVay
PLC Third Floor	3:00 PM	Study Abroad in South Korea	I used my Journey Grant to study abroad in South Korea for the fall of 2016. I was also awarded one of the Department of State's Benjamin A. Gilman International Scholarships to intern with the National Security Language Initiative for Youth for the summer of 2017. Living abroad in Korea four times has shown me a different part of our world and has shaped my future career interests. The American media focuses more on Korean politics and the relationship between North and South Korea. There is more to Korean culture and I want to share insights about their society, such as how it is both traditional and modern. For example, since the Korean war, South Korea has been influenced by the West and this can be seen through something as simple as food in restaurants where modern and traditional dishes are served side by side. Furthermore, although their society is mostly collective, it now contains the importance of the individual developing themselves (ex. through tutoring and extra curricular activities). Finally, because of their history, education is an essential aspect of the Korean society. It has had a major role in developing their economy and society. The pressure to succeed is very high among the population and there have been more Koreans going overseas to study as well as foreigners going there. English is also taught in schools and their spoken and written language now consists of many English words.	Poster	Sandra Adams	Ms. Sara Round
PLC Third Floor	3:00 PM	Veterans Community Project - Pryor Legacy Project 2018	This year, the senior Pryor class is partnering with the Veterans Community Project in order to supply our nation's veterans with dignified housing and the resources to support themselves. We will be presenting our logistics, project successes, and the need of the community we will be serving.	Creative Project	Nichole Marquis, Karoline Wiens, Luce-Virlynn Apollon, Troy Williams, Jason O'Connor	Professor Kevin Shaffstall

PLC Third Floor	3:00 PM	Liquid Release Mechanism (Theatre)	Carrie the Musical, based off of Stephen King's novel required some tricky special effects. One of these effects would occur during the prom scene when Chris and Billy dumps a bucket of pigs blood on Carrie; when she is announced as Prom Queen. Where as the solution to the special effect may sound like an easy one, it was actually trickier than imagined. We needed a liquid which would be seen as red from the audience, but would not stain Carrie's prom dress. We also needed to make the liquid being poured easy to clean up, and easy to refill. The bucket used as a prop was not a reliable tool, so we needed to find a way that would ensure the blood hitting only the top of Carrie's head.	Poster	Sequoia Crissman, Joseph Duncan	Dr. Nathan Wyman
PLC Third Floor	3:00 PM	Emergency Department Overcrowding and Excessive Patient Wait Times	Emergency department (ED) overcrowding and excessive patient wait times have become a topic of discussion worldwide (Somma, Paladino, Vaughan, & Lalle, 2014). The purpose of this literature review is to examine the cause, effect, and possible solutions to these current issues in the ED. These problems impact patient care and treatment and lead to a higher morbidity and mortality rate (Yarmohammadian, Rezaei, Haghshenas, & Tavakoli, 2017). A literature review was completed utilizing the EBSCO database and Google Scholar. Findings showed that team collaboration, ED strategies, education, and detailed discharge instructions are only a couple of ways nurses can help improve the functionality and wait times of the ED (Collis, 2010; Bozzolo, Beck, & Wang, 2013; Taylor & Nayak, 2012; Lehtonen, Lukkarinen, Kamarainen, Rautava, Parviainen, & Palomaki, 2016; Yarmohammadian et al., 2017; Anderson, Dobkin, & Gross, 2014; Somma et al., 2014). This study has important implications for nurses, as they are at the forefront of patient care and can make a large impact in the way the ED functions by performing accurate and necessary nursing interventions in a timely manner and utilizing their knowledge and skills to notice changes in a patient's health status.	Poster	Brandy Caulwell	Dr. Aimee McDonald
PLC Third Floor	3:00 PM	Abundance and Diversity of Bacteria on Student ID's vs. Driver's Licenses: Identity Busters	College students often use and touch their Student IDs throughout the day to access buildings, purchase food and beverages, or to eat in the cafeteria. Most students also have a driver's license, however this identification card is not used as often throughout the day as a student ID is. We hypothesized that a Student ID would carry a greater abundance and diversity of bacteria than a Driver's license would. We swabbed 12 student ID's and 12 Driver's licenses with sterile swabs and water to collect bacteria. The samples were transferred to agar plates and were incubated for 48 hours to let the bacteria grow. After conducting a one-way ANOVA statistical test, we concluded that there was no significant difference between the abundance of bacteria on Student ID's vs. Driver's licenses. We also found that the Driver's licenses had a greater diversity of bacteria, as 5 morphospecies were identified. Biologically, we may not have collected enough bacteria when swabbing the plastic cards, which could have impacted our results. To improve our study, we would sample a larger surface area of the identification cards and expand our data collection beyond the William Jewell College campus.	poster	Hannah Jacobs, Claire Burch	Professor Anne Nickel
PLC Third Floor	3:00 PM	How does Intermittent Fasting Impact Adult Health?	Intermittent fasting has been practiced in religion for thousands of years; Christians during Lent, Mormon's one Sunday per month, and Muslim's during Ramadan. But in the last five to ten years, book titles on fasting have exploded. Why the sudden interest in fasting? For some, it may be that fasting is easier for accomplishing weight loss than restricting calories every day, and for some, it may be perceived health benefits. This literature review sought to understand the impact of intermittent fasting on adult health. An electronic search using PubMed, Cochrane, and CINAHL was performed. Academic journal articles related to intermittent fasting and health, published within the last five years, and available in full text were key criteria. A total of 257 articles were evaluated. Eight articles met the purpose of this review. Overall, intermittent energy reduction (IER) or intermittent fasting dietary methods show equal to or greater weight loss than continuous energy reduction (CER) and IER shows improvement in many health biomarkers (Alhamdan, Garcia, Alvarez, Alzahrnai, Karanxha, Stretchberry, Contrera, ... Cheskin, 2016; Arnason, Bowen & Mansell, 2017; Barnosky, Kroeger, Trepanowski, Klempel, Bhutain, Hoddy, ... Varady, 2017; Harvie, Sims, Pegington, Spence, Mitchell, Vaughan, ... Howell, 2016; Headland, Clifton, Carter & Keogh, 2016; Horne, Muhlestein & Anderson, 2015; Lettieri-Barbato, Giovannetti & Aquilano, 2016; Michalsen, Chenying, Kaiser, Ldtke, Meier, Stange & Kessler, 2013). Knowledge of new options for weight loss and the ability to improve health for the growing population of overweight, obese and chronically ill adults will benefit nursing and all health care providers. However, larger and longer-term human studies with more rigorous methods, including safety data, are necessary before being able to recommend IER.	poster	Terri Norris	Dr. Aimee McDonald

PLC Third Floor	3:00 PM	The Role of Maternal Health on Pregnancy Outcomes	Many factors influence the growth and development of individuals across the lifespan (Silbert-Flagg, 2018). The incidence of obesity and chronic disease is increasing, as well is pregnancy and birth complications (Balogh, 2015). The purpose of this comprehensive literature review is to identify the relationship between maternal health and weight and pregnancy outcomes, both maternal and fetal. Research findings from this study explore the impact of maternal nutrition and overall health on pregnancy, fetal development, labor and delivery, and postnatal growth and development (Averett, & Fletcher, 2016; Balogh, 2015; Brantsvitter et al., 2014; Feresu, Wang, & Dickinson, 2015; Fridman et al., 2014; Stachowiak et al., 2013; Wahabi, Fayed, Alzeidan, & Mandil, 2014). Silbert-Flagg (2018) identified nutrition education and health promotion as a major aspect of nursing; as a result, it is important vital that health professionals to be aware of the research findings. Eight articles studying maternal health and pregnancy outcomes were selected for review using PubMed and CINAHL. Each article was analyzed for validity and limitations were considered. After reviewing the data collected and interpreted for each research article, it was determined that maternal perinatal health does in fact influence fetal and maternal health outcomes during and after pregnant (Averett, & Fletcher, 2016; Balogh, 2015; Brantsvitter et al., 2014; Feresu et al., 2015; Fridman et al., 2014; Stachowiak et al., 2013 Wahabi et al., 2014). Maternal obesity, poor nutritional intake, diabetes, and comorbidities increase the risk of adverse pregnancy outcomes outcomes and impaired fetal development (Brantsvitter et al., 2014; Feresu et al., 2015; Wahabi et al., 2014; Fridman et al., 2014).	poster	Hannah Cloeter	Dr. Aimee McDonald
PLC Third Floor	3:00 PM	Chaparral	The chaparral is a hot and dry biome characterized by plains and rocky hills covered with shrubs, which is susceptible to fires. Chaparrals are found along the west coast of the United States, the northern coast of Africa and the southern coast of Europe bordering the Mediterranean ocean, with smaller biomes in South America, South Africa, and Australia. In the United States, the chaparral can be found in California. Plants in the chaparral include the blue oak, coyote brush, common sagebrush, fairy duster, manzanita, chemise shrub, and the scrub oak. Plants are often characterized by having tough leaves and spines for protection against predators. Animals in the chaparral include the aardwolf, black-tailed jackrabbit, cactus wren, golden jackal, and mountain lion. Animals in the chaparral are adapted to be hardy so they may consume many types of plants or be omnivorous. The specific plants we will be researching are the manzanita, the scrub oak, and the chemise shrub and we will be examining how the plants have adapted to live in the chaparral. Threats to the biodiversity of plants include excessive fires caused by fuel treatments performed by fire agencies that have caused many of the native shrub species to be overtaken by weedy grassland.	poster	Elizabeth Ellis, Cora Olivarez, Spencer Steward	Professor Anne Nickel
PLC Third Floor	3:00 PM	Temperate Deciduous Forest	The temperate deciduous forest is a biome dominated by broad-leafed trees and evergreen cone-bearing seed plants. The trees lose their leaves seasonally, and the color of the leaves change in fall as temperature and precipitation levels drop. Temperate forests are located in North America, Europe, and Asia. In North America, the forests occupy 26 states, extending from Florida to Texas and Minnesota. Large animals found in temperate forests include timber wolves, bears, mountain lions, bobcats, deer, and moose. Smaller animals include raccoons, squirrels, chipmunks, and rabbits. Plants commonly found include large trees, shrubs, ferns, and mosses. The dogwood tree, oak tree, lady fern, and ephemeral bluebell plants will be described in this poster. The life cycles, characteristics, features, and adaptations of these plants and the diseases that affect them will be described. The plant biodiversity of the temperate deciduous forest is threatened by deforestation and acid rain. Deforestation occurs when humans clear trees in forests to use as lumber or to make space for industry and agriculture. Each year, 18.7 million acres of forest are lost. This threat could be reversed through planting more trees, or advocating to stop deforestation. Acid rain, caused by industrial and vehicular emissions, also threatens the plant biodiversity of the forest as leaves are damaged and begin to produce fewer and smaller seeds. Acid rain began affecting forests in the 1950s, when coal plants began releasing pollutants into the air. The impact of this acid rain could be reversed through burning fewer fossil fuels.	poster	Asa Mpuan, Hannah Jacobs, Katelyn Keyte, Aaron La Paz	Professor Anne Nickel

PLC Third Floor	3:00 PM	Desert	The biome researched in this project is the hot desert. This particular biome covers roughly one fifth of the Earth's surface, and has an annual rainfall of less than 50 cm. Taking into account the extremely low quantity of rain that falls in the desert, the biome becomes very hot and dry. Moreover, the primary geographical locations of deserts in North America are found in the Southwestern United States and Mexico. Other desert locations outside of North America include South and Central America, Africa, and Australia. Since the conditions of the desert are so harsh, the plant and animal species that live there depend upon adaptations. Plant species typically possess an extensive shallow root system in order to evade the effects of drought. Animals that live here are often small mammals and nonmammalian vertebrates (reptiles), as these species are able to store water and withstand heat. Specifically, our group explored these plant species: <i>Coryphantha recurvata</i> (cactus), <i>Argemone mexicana</i> (angiosperm), and <i>Prosopis pubescens</i> (mesquite). The research of these plant species revolved around the collective intersection of the features, characteristics, and adaptations are required to thrive in the cruel desert biome. As it has been stated previously, it is quite evident that the desert has exceptionally harsh living conditions. Additional threats to the biodiversity within this biome are viewed through the destructive practices of humans through agricultural irrigation and irresponsible use of off-road vehicles. Perhaps the underlining solution to these threats is reliant upon putting a stop to human intervention.	poster	Claire Burch, Luke Pierce, Bryce McGaughey	Professor Anne Nickel
PLC Third Floor	3:00 PM	Tundra	The tundra is the coldest and harshest biome in the world. It is located in Antarctica and the northern parts of North America, Europe, and Asia. Due to the extreme cold as well as the low precipitation, there are few species of plants and animals that can survive. The plants that can survive the tundra are mostly lichens, mosses, and small shrubs. The most notable animals found in the tundra are polar bears, arctic foxes, caribou, arctic hares, and wolves. Some migratory birds can also be found in the tundra during the warmer parts of the year. We will specifically focus on reindeer moss, dwarf birch, and arctic poppy in our project. We will give a general description of each plant and explain how that plant has adapted to survive the harsh conditions of the tundra. We will also discuss global warming, which is a major threat to biodiversity in the tundra. The fall freeze is coming later in the year and more permafrost is melting each spring so species that previously could not survive in the tundra are now able to inhabit it. Also, the melting of permafrost also contributes to global warming as 14% of the Earth's carbon is stored in permafrost. As the permafrost melts more CO2 is released making global warming worse. Global warming has occurred mainly over the last 50 years. It is possible to reverse the effects; however, it will require a significant commitment and many countries coming together to fix the problem.	poster	Kelsey Lanterman, Bryce Shepherd, Zach Riley	Professor Anne Nickel
PLC Third Floor	3:00 PM	Keep Off The Grass	Grassland makes up around thirty percent of the Earth's surface. In the continental United States, it covers around one-fourth of the country including the entire Midwest from north to south, and a small strip of land in central California. Around the world, grasslands are located in every continent besides Antarctica. Grasses and forbs dominate most of the plant life with few to no trees. Many animals in the prairie graze and feed on grasses and forbs including: bison, prairie dogs, prairie chickens, and various birds and insects. Some of the most well-known plants in the grassland include the big bluestem, the Great Plains white fringed orchid, and the white wild indigo. Information regarding these plants in this poster will cover each plant's tolerance to droughts, fire, and grazing, the physical characteristics of the plant, and how the threats to biodiversity affect each plant. The biggest threats to grassland plant diversity are overgrazing and the conversion of prairies to croplands. Overgrazing causes major changes in species composition, and the conversion to cropland has been in issue in developing nations across the globe. The solutions to overgrazing would be to manage the animals that are grazing the grassland and to use the land more efficiently. Solutions to the conversion to cropland include the government conserving grasslands by instating a state or national park.	poster	Kayla Crowder, Taylor Golden, Pharroh Gordon	Professor Anne Nickel

PLC Third Floor	3:00 PM	Boreal Forest	The boreal forest, also known as the taiga, has a moist environment with subarctic climate, long winters and short summers. Boreal forests are most commonly found in Russia and Canada. In the United States however, they are found in Alaska and the northern region of Washington. The taiga is covered heavily in coniferous trees. There are lots of mosses and lichens. Many trees in the taiga have long, thin, and waxy needles such as evergreen trees. In the taiga, animal life includes many species of birds and over 85 species of mammals. Some of these include bears, caribou, beavers, and lynx. The plants from the biome that will be discussed deeply will be the black spruce tree, blueberry shrub, and sphagnum moss. The distinct characteristics of the plants and how they've adapted to the biome will be examined. Two main threats to the taiga are deforestation and global warming. Many things we use every day are made out of wood and a lot of the wood we cut down is coming straight from the taiga. The second threat to the taiga is global warming. Animals here have adapted to a colder climate and are unable to survive in warmer environments.	poster	Rose Galetti, Sam Gettings, Caleb Houghton	Professor Anne Nickel
PLC Third Floor	3:00 PM	Extinction Coefficient of Germanium Nanoparticles	Germanium nanoparticles (Ge NPs) have a variety of uses, including as materials for solar energy conversion and optoelectric devices. Ge NPs experience quantum confinement when synthesized to a very small size (<24 nm), allowing properties to be tuned based on size. Particle size can affect the band gap of the NPs, with larger Ge NPs having a smaller band gap, while also changing the ability of NPs to absorb light, also known as the extinction coefficient. The type of molecule bound on the surface of the NPs offers another way in which the band gap can be tuned. Using a microwave-assisted heating method, oleylamine-capped Ge NPs were synthesized. Three different ratios of Gel2 and Gel4- were used to obtain different NP sizes. UV/Vis/NIR spectra were collected for a series of dilutions of each Ge NP sample. The Beer-Lambert Law was applied to calculate the extinction coefficient of each Ge NP sample and determine the relationship between size and this coefficient. Following a ligand exchange for dodecanethiol, the extinction coefficient of each newly capped Ge NP sample was also determined. Utilizing the extinction coefficient for these NPs allows the concentration of Ge NP solutions to be determined using absorbance spectroscopy.	Poster Presentation	Jesse Lundervold	Dr. Jason Morill
PLC Third Floor	3:00 PM	Acupressure and Its Improvement on Sleep Quality	Sleep disturbances are a common problem in Americans, particularly those suffering from health conditions. Pharmacological treatments are undesirable due to the cost burden and possible adverse effects. Acupressure - a component of Traditional Chinese Medicine involving manipulation of the body's qi, or energy - offers an alternative treatment for improving sleep quality. The purpose of this review is to examine the literature related to studies of acupressure and its effectiveness as a treatment for sleep disturbances in various populations. A search was conducted using multiple databases to identify the current literature related to acupressure as treatment for improving sleep quality. The nine selected articles address a range of populations and health conditions: one study involved specifically geriatric participants, although elderly patients were included in many of the other studies; one worked with cancer patients; two tested patients with renal disease; two focused on participants with cardiac conditions; one addressed postmenopausal women; and one was specific to adolescents. The evidence supports the effectiveness of acupressure as significant over control treatments in improving the quality of sleep in a variety of patient populations. In all studies examined, no adverse effects were observed with use of acupressure as a treatment modality. Based on the review of these nine studies, it can be concluded that acupressure is a safe, effective, and acceptable treatment option for improving sleep quality. This treatment method can be used by health care workers or taught to patients for self-administration, making it an effective, safe, and cost-efficient treatment to improve sleep in almost any patient.	Poster Presentation	Missy Thomassy	Dr. Aimee McDonald
PLC Third Floor	3:00 PM	Grocery Delivery Service Business Proposal	American citizens are constantly looking for ways to make their lives easier, and the use of technology is contributing to solutions for people. Grocery shopping is a task for which many busy people don't have time. Others with dietary restrictions struggle to find good food without visiting multiple stores. Our business idea helps with these problems by combining all products from local stores on one convenient website. The products that a customer chooses will then be delivered to the customer's residence at a specified time.	Poster Presentation	Paige Shoemaker, Shannon Ernst, Eric Smith, Evan Lott, Jordan Hamilton	Professor Shelly McVay

PLC Third Floor	3:00 PM	Hereditary Spherocytosis and Elliptocytosis	Hereditary Spherocytosis and Elliptocytosis effects about 1 in 2000 people in the United States and is a condition which causes symptoms akin to anemia and more drastic symptoms. These diseases effect the formation of red blood cells due to problems in the integrity of the cytoskeleton. Humans cannot be ethically studied, thus it is crucial to find a model organism to examine the mutations which cause these diseases in humans. If a model organism has an ortholog to the human gene which codes for a similar protein, the research completed on this organism has greater implications and can be useful for humans. The purpose of this experiment is to determine if <i>C. elegans</i> is a good model organism for the study of Hereditary Spherocytosis and Elliptocytosis. In order to determine if it is a good model organism it must meet the following two criteria: 1) <i>C. elegans</i> must have a gene similar to the human gene which, when mutated, causes Hereditary Spherocytosis and Elliptocytosis; 2) The <i>C. elegans</i> mutant must have an easily observable phenotypic difference from the wild type worms. In order to meet the criteria two models were evaluated: phenotypic differences between mutant and wild type worms and RNAi-treated wild type worms. After examining the data collected we determined that <i>C. elegans</i> is a good model organism for the study of Hereditary Spherocytosis and Elliptocytosis. In particular, we found that the phenotypic model was effective for study whereas the RNAi model was not effective.	poster Presentation	Shaneann Fross	Dr. Rose Reynolds
PLC Third Floor	3:00 PM	Narcotic Agreements: Effectiveness and Opportunities for Improvement	Chronic pain impacts more than 50 million Americans and remains the most common reason people seek medical advice (Payne, & Twilman, 2010). It proves to be complex, difficult to treat, and frequently ill-managed. Effective treatment options are limited, leaving many clinicians returning to modalities that are historically proven effective, such as opioids. Compounding the issue, the United States is concurrently battling a drug abuse epidemic. The elucidation is not new; pain contracts have been present for decades and strongly encouraged by regulatory bodies, though their efficacy is questionable. When executed successfully, these agreements can serve as a means of communication displaying "deliberate and understandable language, framed in terms of safety, and implemented according to the principles of shared decision-making" between the physician, nurse, and patient (Tobin, Forte, & Mcgee, 2016). There are numerous debates surrounding the composition, implementation, and unintended consequences of behavioral treatment agreements. This paper examines supplemental evidence to establish the most beneficial practice for implementation of pain contracts.	poster Presentation	Kelly O'Hare-Baxley	Dr. Aimee McDonald
Peters Theater	1:10 PM	Live Event Lighting Technology, Programming, and Design	I will demonstrate current lighting design and equipment for theatre and concert performances. This demonstration will reflect extensive training I received in Las Vegas, NV and Kansas City, MO as part of a Hall Summer Study Grant. I will demonstrate Digital Multiplex (DMX) data control, moving light programming, and lighting design technique in an interactive presentation using lighting equipment on campus.	Performing/Visual Arts	Zoe Spangler	Mr. Nathan Wyman
Forbis Recital Hall	3:00 PM	Goethe's Mignon: A Comparative Analysis of Composer Interpretations	This lecture-recital is a 60-minute presentation that will explore six musical interpretations of "Kennst du das Land?" ("Do You Know the Land?"), sung by the character of Mignon in Johann Wolfgang von Goethe's <i>Wilhelm Meisters Lehrjahre</i> ( <i>Wilhelm Meister's Apprenticeship</i> , 1796). Of the four songs Mignon sings in Goethe's novel, "Kennst du das Land?" has most frequently captivated composers, and there are a total of 84 known musical settings of the poem. The settings by Robert Schumann, Zdeněk Fibich, Henri Duparc, Pyotr Ilyich Tchaikovsky, Franz Liszt, and Hugo Wolf are among the most popular compositions. During this presentation, I will explain the role of Mignon in Goethe's novel, as well as her significance for generations of audiences. I will perform these compositions while offering historical and analytical insight into each unique interpretation. Despite sharing a single source of inspiration, each composition varies greatly in texture, color, and atmosphere.   For this lecture-recital, I will need a 60-minute block of time in the Forbis Recital Hall later in the afternoon, if possible. I have about 30 minutes of music I will perform, accompanied by 30 minutes of lecture. I will also need access to a projector and screen, or suitable alternative, in order to display a PowerPoint presentation that will offer visual aid.	Performing/Visual Arts	Abigail Freeman	Dr. Alice Anne Light

Yates 210	4:00 PM	Hawaiian Heritage Journey	We are all part of the story of our lineage, mine traces back to Hawai'i and with the help of the Journey Grant I was able to explore my cultural roots. As a culmination of that journey I will perform a traditional Olapa hula and a modern Auana hula. I want to bring part of my culture to William Jewell College in order for people to see a piece of the rich Hawaiian history of story telling through dance-- a practice that was once outlawed along with our language until the 1970s. Join me as I bring a bit of the Hawaiian Renaissance to William Jewell College.	Performing/Visual Arts	Alexia Lamb	Ms. Sara Round
Yates 221	4:00 PM	JEWELL FORUM - The Cabinet of the United States should unanimously vote to invoke the 25th Amendment on the grounds that President Donald John Trump is unable to discharge the powers and duties of his	Students in COM 323 (Argumentation and Debate) are preparing for a showcase debate on the topic of the impeachment of the President of the United States. The resolution used as the title for the project serves as the focal point for the discussion. Two students from the course will deliver affirmative arguments, indicating that the cabinet should exercise the 25th Amendment to remove the 45th President of the United States from his office. The negative debaters will present arguments that challenge the fundamental assumptions of this constitutional power, provide an alternative advocacy to this method of replacing the POTUS, discuss disadvantages to a Pence presidency, examine the powerful potential of a white supremacist/alt-right backlash and deliberate on the democratic process that is reflective of the day-to-day constitutional crisis precipitated by this president. This presentation challenges assumptions related to mental health/stability, processes enshrined in the constitution of the United States, the importance of the American president, and what it means to be civically engaged in an era of Trumpism.	Jewell Forum	COM 323 Students	Professor Kyle Dennis