

Preventing 'Protection After Injury': A Nussbaumian Theory of Children under the Political Question Doctrine

Nathan Baring '22

Advisor: Jillian Locke, Political Science

Time: 4:00pm-5:00pm

In cases that allege constitutional harms where the state and family are unable to provide necessary rights protection, a paradigm shift in how the court considers children's legal standing is required. Specifically under the political question doctrine in analysis of justiciability, there must be consideration of disenfranchisement. In the protection of recognized positive rights granted to children, a Nussbaumian 'capabilities approach' would direct an Article III court to consider whether children will experience irreparable harm to their fundamental positive rights before such time as they can make their case through the political branches.

Frequent Pattern Mining on COVID Survey Data

Josie Bierbaum '23

Advisor: Melissa Lynn, Computer Science

Time: 4:00pm-5:00pm

Frequent pattern mining is the process of identifying items that frequently occur together in a dataset. It is related to association learning, which is a rule based machine learning method that finds relations between variables with a focus on correlation. By using machine learning algorithms, we can find these patterns of variables that occur together and determine which ones are significant with minimal human intervention. These algorithms can be used to find relationships where one group of items frequently occurring together has a high likelihood of another item or group of items occurring with it. Our research uses the FP-growth algorithm, which finds groups of items that frequently occur with another group of items, as well as measures how often and how likely they are to occur together. We plan to use this algorithm on a dataset of survey responses about life during COVID, which includes demographic factors such as age and occupation, effects of COVID including income reduction and movement restrictions, as well as measures of mental health including happiness, hope, anxiety and depression. We have begun to apply this algorithm to the dataset to find frequent patterns in the data, specifically between effects of COVID and demographic variables and mental health variables.

A Shared Space: An Ethnographic Analysis of the Gustavus Dance Company

Kyra Bowar '21, Emma Lohman '21

Advisor: Patricia English, Communication Studies

Time: 4:00pm-5:00pm

This ethnography explores cultural interactions and communicative relationships among a subculture of the Gustavus Dance Company. We observed a group choreographed by Kasey Dumonceaux (a senior Dance Honors student), consisting of 10 female-identifying performers who rehearsed weekly in preparation for their spring show, *Suspended Between Worlds*, on

April 26th, 2019. Their piece, titled “Cortex,” immersed the audience in the inner workings of the choreographer's brain. We took field notes while observing the rehearsals and also conducted open-ended interviews to determine intercultural communicative tendencies among this subculture. Our research revealed four major themes within communication: Non-verbals (such as proxemics and physical appearance), language (specifically the use of humor and slang to establish affection and closeness), Hofstede’s Value Orientations of power distance and collectivism, and identity (in the form of gender and sexuality performance). Based on these observations, we concluded that dance is a medium for sensing, understanding, and communicating ideas, feelings, and experiences. It also serves as a tool for creativity and self-expression. Dance has its own content, vocabulary, skills, and techniques, which must be understood and applied to be proficient in the art.

Curation Algorithms as Constraining Discourses: A Hegemonic Analysis of TikTok’s Algorithm

Kyra Bowar '21

Advisor: Martin Lang, Communication Studies

Time: 5:00pm-6:00pm

Throughout the last decade, social media platforms from Facebook to Youtube to TikTok have been crafting ever increasingly, hyper-personalized experiences for each user. But in exchange, their curation algorithms force users to sacrifice their autonomy of thought and choice over what content—and therefore what discourses—they consume. In order to understand this phenomenon, scholars examine the role of social media algorithms in forming our identities, creating our cultures, and reinforcing existing systems of power in society. This rhetorical-cultural analysis examines the TikTok algorithm under concurrent theoretical lenses of Marxism and poststructuralism. TikTok’s curation algorithm has ushered in a new phase in the era of social media personalization, making consumption much easier for users, while simultaneously functioning as a “filter bubble”. By scrutinizing the power dynamic at play, this analysis reveals that TikTok’s “For You Page” curates individualized social experiences that conceal contradicting discourses and reaffirm users’ existing ideologies. Ultimately, TikTok’s algorithm negotiates between content personalization and our freedom of thought and choice as users. The algorithm prioritizes personalization over openness of discourse, reinforcing existing systems of power—specifically hegemonic systems—that rely on our willingness, as social media users, to comply within said hierarchies. Thus, the more you scroll, like, and comment, the easier it is for social media algorithms to incorporate you into an ever more constrained (but deceptively so) world.

Degrees of Disability: Autism And The Fight For Autonomy

Amanda Braun '21

Advisor: Jillian Locke, Political Science

Time: 5:00pm-6:00pm

The United States has a history of violence against the neuro-diverse population. Our perception of neurodiversity, specifically autism, lives on a sliding scale of low to high functioning, non-

verbal to verbal, conspicuous to obvious. These assumptions of the autistic person have led to a national practice of infantilization, characterizing autism as childish and regressed. My research questions to what extent does a child's disability provide a basis for deviating from the accepted legal authority a parental guardian has over their child. It will study the way we view and differentiate disabilities, the fight for independence led by autistic individuals, and the legal history that has been used to revoke personal autonomy from autistic people.

Evolution of fluconazole resistance and tolerance in *Candida albicans* strains with increased genome instability

Kade Copple '24

Advisor: Laura Burrack, Biology

Time: 4:00pm-5:00pm

Drug resistant fungal species are becoming serious clinical problems. Infections of the fungal pathogen *Candida albicans* often occur in immunocompromised populations such as HIV positive, cancer, and surgical post-op patients. Currently, only three types of antifungal classes are used to treat invasive fungal infections: polyenes, echinocandins, and azoles. Thus the elimination of one class of agent could lead to serious implications. Pathogenic fungi use genetic mechanisms such as genomic rearrangements and mutations to develop drug resistance. MAD2 and BUB1 are mitotic checkpoints that work together to prevent genome instability. Deletion of MAD2 and BUB1 increases chromosome rearrangement and aneuploidy caused by segregation errors. In addition, deletion of MAD2 increases the growth in the presence of fluconazole which suggests a role in resistance through aneuploidy. *C. albicans* strains containing MAD2 and BUB1 mutations, were evolved to become resistant to fluconazole and then were screened for fluconazole resistance by using minimum inhibitory concentration (MIC) assays. Several strains developed tolerance, while some developed true fluconazole resistance. Resistant strains were selected for sequencing of ERG11 gene and genotyping of chromosome 5. ERG11 mutations are one mechanism by which it changes the target protein of fluconazole. Several resistance mutations are located on chromosome 5 of *C. albicans*, thus loss of heterozygosity (LOH) leads to antifungal resistance. Genotyping a locus on chromosome 5, showed that LOH occurred in one of the resistant strains. ERG11 gene will be sequenced. In the future, further genomic sequencing will be done to identify isochromosome 5L formation and other resistant genes such as TAC1, CDR1, CDR2.

Art and Collaboration: Illustrating George Gissing

Nicole Cundiff '21

Advisor: So Young Park, English

Time: 5:00pm-6:00pm

Victorian literature has a long and storied relationship with illustration. For instance, when Sherlock Holmes stories appeared in *The Strand Magazine*, they were almost always accompanied with illustrations by Sidney Paget, the artist who forever associated Sherlock with a pipe and deerstalker hat. My project shows the interweaving of illustration and text in Victorian culture by analyzing key scenes in George Gissing's *The Odd Women* (1893) and by

representing them visually in watercolor. My project investigates a complex literary text through visual art practice and employs multimodal learning and interdisciplinary research. This project explores visual and physical learning through artistry by analyzing and re-adapting the novel through a new creative lens. This method presents new challenges: you must not only choose which scenes are the most significant for the retelling, but also decide how to portray those scenes within one image, using the tools of painting. Colors must be chosen to represent the theme and mood of the scene; composition and figural poses must recreate the scene in a new light. The larger aim of my project is to discover the powerful interdisciplinary links between art and literature that we can share with fellow students and colleagues in cultural-literary-historical studies, as well as attempting to look at illustration as a vital method and practice of adapting works. Selected examples from my original artwork will be presented. This project was funded by the Presidential Student-Faculty Collaboration Grant and developed from collaborative work with Professor So Young Park (English department).

Fatigue in Undergraduate College Students During a Pandemic

Maya Gerads '21

Advisor: Heidi Meyer, Nursing

Time: 4:00pm-5:00pm

The purpose of this study is to understand college student fatigue and its relationship to overall wellbeing and academic performance during a pandemic. The global pandemic has negatively impacted people's lives across the world. Previous studies in fatigue, particularly during a pandemic, are limited. The impact of fatigue and exhaustion on student success and wellbeing is important to understand to facilitate a supportive learning environment. A descriptive correlation study design guided this study. The Fatigue Symptom Inventory (FSI) was used to measure fatigue. Academic performance was measured by self-report of GPA and satisfaction of exam, quiz, and assignment scores. Wellbeing indicators measured included sleep, diet, water, activity, and substance use. A convenience sample of 329 undergraduate students, ages 18-22, participated in this study. The mean level of fatigue when students felt the most fatigued was 7.47. The mean level of fatigue when students felt least fatigued was a 2.95. A weak, negative correlation was found between GPA and four FSI indicators. Student satisfaction with exam/quiz and assignment scores were found to have a weak negative correlation with the majority of FSI indicators. Sleep was found to have a weak negative correlation with the majority of the FSI indicators. College students are experiencing clinically meaningful fatigue that interferes with daily activities. The findings from this study provide information for college campuses to create interventions to combat feelings of fatigue, specifically related to sleep and promotion of physical activity.

Innspekter Moris: A Video Game Exploring Mauritian Culture, Language and History

Dhareni Melanie Kistnasamy '22, Sanjeeda Shutrishna '22

Advisor: Jeremy Robinson, Modern Languages, Literatures, and Cultures

Time: 5:00pm-6:00pm

The Culpeper Language Learning Center at Gustavus is developing a digital game that gives an insight into Mauritian culture, history and geography. The game intends to expand the resources available to French and Mauritian Creole language learners and speakers. The setting of the game is situated in Mauritius which is an island nation off the coast of Madagascar, in the Indian Ocean. In the game, you play as an inspector who is trying to solve and bring justice to a socially relevant criminal offence. Alongside Jeremy Robinson, director of Culpeper Language Learning Center, D. Melanie Kistnasamy, researcher, script writer, and translator, and Sanjeeda Shutrishna, artist, are working on this game project. In this session, the benefits of game-based learning will be discussed, a portion of the game will be demonstrated, and an insight in the game design and development will be given.

Understanding the Experience of Accessing Health Care for Low Income Individuals and Families

Taylor L. Kline '21, Sara J. Moen '21

Advisor: Jessica L. Stadick, Nursing

Time: 4:00pm-5:00pm

Despite expanded health care coverage in the United States, numerous individuals experience inequities accessing care (Riley, 2012). Receiving affordable and quality health care is a concern for low-income individuals due to barriers they face (Sarathy et al., 2020). The purpose of this study was to better understand the perceived barriers to receiving health care among individuals living at or below the federal poverty level in rural and urban areas of MN. The descriptive content analysis method described by Elo and Kyngäs (2008) was completed to analyze the data from the narrative texts. The qualitative findings revealed three categories: (1) Access to Health Care, (2) Needs-Based Care, and (3) Health Promotion. Access to health care, as described by the participants, was impacted by the cost of care, type of insurance, personal availability, and geographic location. Needs-based care meant that many participants sought care only when necessary. Health promotion was described by an individual's exercise, self-care, medication use, and diet. The findings suggest that disparities in accessing and receiving affordable and quality health care in Minnesota continues to exist for low income individuals and families. As reported by the participants, the main reason individuals sought health care was needs-based. Despite an individual's access to health care, most participants reported using several measures to maintain health and prevent illness. Improving access and affordability to health care for all individuals is an essential component of achieving health equity. Future research is needed to further examine access to health care, specifically health insurance coverage issues.

Role of Institutions in the Demobilization and the Integration of Child Soldiers into the Democratic Republic of the Congo's Society

Ingrid Kubisa '21

Advisor: Jill Locke, Political Science

Time: 4:00pm-5:00pm

The child soldier's movement is one of the consequences of war in the Democratic Republic of the Congo (DRC). The DRC is known as a war-torn country because the country has been at war repeatedly since 1996; the civil war started four months after I was born. The civil war has been happening in different parts of the country, but most frequently in the Eastern side of the country. This paper will help us learn the stories of how child soldiers get into the army and how they decide to leave it. We will also understand which institutions have played a role or should play a role in the reintegration and the demobilization of child soldiers in the DRC's society. This project seeks to better the role does civil society, particularly churches and schools, plays in the demobilization and the reintegration of child soldiers in the Congolese society? How effective are they? What can we learn from studying reintegration in this way? These questions will be answered from the stories of how child soldiers get into the army and how they decide to leave the army. After that, we will understand which institutions have played a role and should play a role in the reintegration and the demobilization of child soldiers in the DR Congo society.

["What do you have to lose?" Examining President Donald Trump's Use of Impression Management during the 2020 White House Coronavirus Task Force Press Briefings](#)

Andres Losinski '21

Advisor: Naomi Hansen, Sociology and Anthropology

Time: 5:00pm-6:00pm

This study will investigate how Erving Goffman's theory of Impression Management helps explain the performance that President Donald Trump gave while interacting with White House reporters during the White House Coronavirus Task Force Press Briefings between February 26th and May 11th, 2020. Twenty-eight White House Press Briefings will be examined in a case study using online qualitative methods to analyze them through the elements of Impression Management. Questions that will attempt to be answered from this study are as follows: How robust is the theory of Impression Management when it is applied to interactions given in face-to-face interactions? What can an analysis through Impression Management help explain about the behaviors that have been portrayed by President Donald Trump? Results of the study will show that President Donald Trump used many of the strategies of Impression Management to orchestrate the performance he wanted and how the theory can change due to the indoctrination of social media. Future studies can explore the additional Press Briefings given by President Trump or other members of the Task Force outside of the period and other performances of Donald Trump at Campaign rallies or Presidential debates. In addition, future studies can explore new theoretical frameworks to how Impression Management fits in with advancements in technology.

[Nursing Student NCLEX Preparation](#)

Allie Luecke '21, Brooke Merila '22

Advisor: Lynnea Myers, Nursing

Time: 4:00pm-5:00pm

The purpose of this study is to analyze the strategies for student success on the first-attempt of the National Council Licensure Exam (NCLEX) in the Gustavus Nursing Program. Students who

graduated from the Gustavus Nursing Program have consistently had a pass rate near 90% on the first attempt. However, for the students who graduated in May 2020 (and experienced a rapid transition to online learning), the first-time pass rate fell to 62.5%. The hypothesis of this study is that participants who thoroughly engage in preparation for the NCLEX are the most successful in passing on first-attempt. A Qualtrics survey was administered to 2018, 2019, and 2020 graduates of the Gustavus Nursing program and included both qualitative and quantitative questions to explore what students found most helpful in preparation for the NCLEX. Forty-one alumni responded to the survey, with the majority (90%) of respondents reporting they passed the NCLEX on the first-attempt. When asked about strategies used to study and prepare for the NCLEX, respondents identified ways to decrease anxiety and stress, including the use of study breaks, rest periods, breaking up studying, use of a study schedule, exercise, and positive thinking. The most beneficial resources to prepare for the NCLEX were ATI and U-World. Alumni listed simulations, clinicals, curriculum, and ATI as the most useful components of the nursing program for preparation for the NCLEX. Finally, lots of studying was key to success.

[Exploring the Lived Experience of Elders' Challenges and Resilience During the Lockdown of Nursing Homes Due to the 2019 Coronavirus Pandemic](#)

Doris M. '21

Advisor: Barbara Zust, Nursing

Time: 5:00pm-6:00pm

The purpose of this study is to understand the challenges and resilience faced by residents in nursing homes from their own perspective during the lockdown of nursing homes due to COVID-19 pandemic. On March 10, 2020, Minnesota Nursing Homes and Assisted Living Homes went on lock-down to keep the senior residents safe from the novel coronavirus. During this time, visitors weren't allowed inside the facilities and residents were required to stay in their rooms. By November of 2020, more than 100,000 COVID-19 related deaths occurred in these facilities (KFF, 2020). While there is a plethora of information about mental health during the pandemic, very little has been written about the lived experience of residents in Nursing Homes that endured that time in isolation and what the nursing homes did to support them. This was a qualitative study in which 10 participants were asked 10 open-ended questions using Van Manen's method. Findings from this study showed that the pandemic greatly affected the residents' health, particularly their mental health. Although the staff tried to help the residents in a variety of ways, there is more that could have been done for them and still needs to be done to better help these residents.

[Return To Play Of Collegiate Athletes Who Undergo Meniscal Allograft Transplant](#)

Anna Nietz '22, Chad Haugstad '22

Advisor: Liz Drake, Health and Exercise Science

Time: 5:00pm-6:00pm

Many athletes experience injuries in their careers, making return to sport one of their highest priorities. One common athletic injury is a meniscus tear. After experiencing a meniscus tear, one of few routes to recovery is a Meniscal Allograft Transplant (MAT); a transplant of a meniscus from a cadaver. This scenario leads to the focused clinical question: in college-age athletes who undergo MAT, is full return to sport possible? In order to find evidence for this critically appraised topic, three databases were used to search for articles: PubMed, SPORTdiscus, and PEDro. Thirty-five articles were initially considered for evidence. A total of 5 articles were selected for use. Research found while completing this critically appraised topic investigation points towards return to play being possible for patients who have undergone MAT, with two of the sources finding 77% of patients able to return to play. Few articles state that MAT allows people to return to daily activities without long term complications, and others state that MAT allows athletes to return to play at high levels of participation. Based on the evidence from the articles found, return to sport after MAT may be possible. Not enough research has been conducted that can truly support full return to sport after MAT, especially in high-impact sport athletes. Future research is needed to provide a stronger argument. There is evidence, however, that participation in low-impact activities such as swimming and cycling should be encouraged in athletes who undergo MAT.

[Adoptee Geographies: The Paucity of Knowledge, Data and Resources for Young Adoptees \(18-25\) in the Midwest at Gustavus Adolphus College, St. Peter MN.](#)

Kristie Olson '21

Advisor: Joaquin Villanueva, Geography

Time: 4:00pm-5:00pm

Adult adoptees can be examined in a sense that they are a 'Forgotten Population'. They have continuously represented an underserved identity as they continue to exist throughout time and space. Post childhood adoptees can typically experience the transition to adulthood without adequate awareness, comprehensive knowledge or a sense of affirming methodological support. There is a significant gap in the discernment of realities that project a harmful narrative where adoptees remain a population who are expected to express plethora of joy and elation confined into a vulnerable space of emotional turmoil. I see this time period as a formative chapter in an adoptee's life therefore, I am examining the spaces of higher education at Gustavus Adolphus College and the landscape that is present in rural Minnesota. In this project I explore the following questions: To what extent is there a paucity of demographic data regarding adopted individuals along with archival evidence of supportive programming? To what extent are administrators in the College aware of the need for such a program including its benefits and how does this correlate to the school's commitment to Diversity, Equity and Inclusion? Finally, can Gustavus Adolphus College adopt a comprehensive adoptee program that spans beyond the confinement of the school's Center for Inclusive Excellence in the near future? In conclusion, this research project critically analyzes the sphere of higher education and the feasibility for a private liberal arts institution to cater to the needs of a historically forgotten population.

[Effects of Non-Operative Intervention on Chronic Exertional Compartment Syndrome](#)

Haley Reed '22, Jimmy Heinzen '22

Advisor: Liz Drake, Health and Exercise Science

Time: 4:00pm-5:00pm

Clinical Scenario: Chronic Exertional Compartment Syndrome (CECS) can be extremely debilitating for any patient due to its presenting symptoms. It is commonly treated with a surgical procedure known as a fasciotomy, due to this being the only evidence based approach to the management of CECS. However, patients may still choose to opt out of this approach due to the additional risks, costs, time of recovery or rate of recurrence and thus the research team intended to discover the best methods to treat patients with CECS.

Citizen Science in Formal Classrooms with Common Milkweed, *Asclepias syriaca*, and Local Adaptation Experiments

Jake Ross '24, Jolie Grimes '24, Emelia Hinrichs '24, Ellen Hofstede, '23

Advisor: Michele Koomen, Elementary and Secondary Education

Time: 5:00pm-6:00pm

This poster addresses the absence of citizen science in formal grades 6-16 classrooms (Koomen et al., 2018; Kountoupes & Oberhauser, 2008). Our program uses complementary approaches investigating local adaptation in common milkweed (*Asclepias syriaca*), a host plant for the iconic and declining monarch butterfly population, using educational networks across the U.S. Training for participants occurred on site in the summer, focusing on milkweed/monarch biology and life cycles and experimental data collection protocols participants would later translate into classrooms. Using qualitative data collection methods (interviews, surveys and artifacts) of 8 participants we report on preliminary results. Findings include how the project materials were used to develop disciplinary science principles in ecology and evolution and the practices of science (NGSS, 2013). Attendees will learn ways that CS can be included within formal classrooms, challenges and opportunities in implementation and how the project supported marginalized students within science, including students with disabilities.

The Use of Therapeutic Agents in Resolving Persistent Instability Post-ACL Repair

Abigail Schammel '22

Advisor: Elizabeth Drake, Health and Exercise Science

Time: 4:00pm-5:00pm

The rehabilitation of ACL repairs can be enhanced with the supplementation of Therapeutic Agents. Therapeutic agents are a tool in facilitating treatment and rehabilitation in the profession of Athletic Training. A common injury in the athletic population is a tear of the anterior cruciate ligament (ACL) of the knee. Even after the initial rehabilitation and healing process is complete, many ACL patients experience persistent issues with knee instability. This review of the current literature on rehabilitation compares the efficacy of three therapeutic agents: electrical stimulation for muscle re-education, electromyography biofeedback, and massage therapy in reactivating the vastus medialis oblique (VMO). The VMO is one of the quadriceps muscles of the anterior thigh, and one of its key functions is to stabilize the knee. By focusing on the VMO in rehabilitation, stability of the knee can be improved which facilitates a complete recovery and reduces the likelihood of secondary injuries due to biomechanical compensation.

[The Decline of Civics Education in the United States](#)

Joshua Slaughter '21

Advisor: Jillian Locke, Political Science

Time: 4:00pm-5:00pm

There has been a noticeable decline in civics education in the United States. This is a concerning issue because this decline is happening mainly in African-American and Hispanic communities. In these communities, there has been the lowest political participation in the nation. On the other hand, many private schools have adopted and enhanced civics education into their curriculum. Students who have taken civics education were more likely to become active and well-informed citizens. Ultimately, this specific education has produced leaders in the community politicians. This study explores the need for civics education in more minority community school systems. In doing so, these will empower and enlighten students to become more active citizens and political participation.

[Comparison Between Thermotherapy and Stretching for Lower Back Pain on Ice Hockey Players](#)

Gabrielle Slykas '22, Kenneth Hoang '22

Advisor: Liz Drake, Health and Exercise Science

Time: 5:00pm-6:00pm

In high intensity sports such as ice hockey, chronic low back pain is one of the most common occurrences seen but also one of the hardest to prevent. This is because ice hockey players are constantly hunched over, twisting and turning trying to get the puck, hockey players need to open their hips to change positions from going forward and backwards throughout the entire game which puts high amounts of pressure on the muscles of the lower back causing lower back pain. By using the PEDro Scale and Oxford Centre Evidence-based Medicine (OCEBM) for

quality of assessments a clinical bottom line was drawn to what is beneficial, stretching or thermotherapy, for these high intensity sports. The search strategy used to answer this question consisted of inclusion and exclusion criteria. Inclusion criteria consisted of studies of low back pain in athletes, and studies that involved thermotherapy or stretching as treatment for low back pain. Exclusion criteria consisted of publications before the year 2015. Some databases used for this research were SPORTDiscus, PubMed/MEDLINE, and Physiotherapy Evidence Database. There is no clear winner of which intervention is better, but the research found that both thermotherapy and stretching helps increasing flexibility, strengthening the muscles, and lengthening them which in turn relieves pain and stiffness around the back.

Radicalization in the Time of COVID: Social Media and the Vulnerability of White Youth

Nicholas Summers '21

Advisor: Jill Locke, Political Science

Time: 5:00pm-6:00pm

This project seeks to uncover the relationship between social media and the radicalization of white youth in the United States towards far-right ideologies and groups. I plan on turning my thesis into a visual presentation (Powerpoint/poster) from which I can present and/or answer questions on the nature of and conclusions drawn from my research. My thesis looks at social media as a mechanism that facilitates radicalization through both the active strategies of far-right groups and the passive structure of different platforms. I draw upon research and reporting on the COVID-19 pandemic and whiteness in the United States to demonstrate the urgency of the current moment through the vulnerability of white youth. Through my project, I've used contemporary events and research to craft a coherent lens through which to view one of the most serious existential threats facing the US.

Anterior Cruciate Ligament Sprains in Rehabilitation

Sydney Swenson '22, Sierra Meyer '22

Advisor: Elizabeth Drake, Health and Exercise Science

Time: 5:00pm-6:00pm

Anterior Cruciate Ligament (ACL) sprains are one of the most common knee injuries in high intensity sports such as basketball, soccer and football, and a large amount of research has gone into increasing efficiency of post ACL reconstruction rehabilitation programs. Searches were conducted using three different databases, including: SPORTDiscus, MEDLINE, and CINAHL Plus. Searches found a total of 58 results, which included 5 articles that met the inclusion criteria, and were found to be relevant to the experimental question. Results that were published more than 10 years ago, appeared irrelevant to the research question, or were found to have a low quality of evidence were excluded from research. A total of five articles were obtained for evaluation of rehabilitation techniques utilizing a continuous passive motion machine or aquatic therapy. Results indicate that aquatic therapy may be best taken advantage of when used in combination with an existing land-based rehabilitation program post-ACL injury. Due to lack of available research, more testing needs to be performed on the effects of aquatic therapy in regards to ACL rehabilitation and recovery. Results of the search determined that a CPM

machine has not been proven to be effective in decreasing pain or improving range of motion. Based on the available research aquatic therapy has proven to be more effective than CPM as a rehabilitation technique. Despite the lack of available research, current evidence has shown that aquatic therapy facilitates faster recovery through increased range of motion, decreased pain, and decreased inflammation.

In College Athletes Does Massage/Trigger Point Release, Help Diminish Concussion Symptoms?

Ashley Tapio '22, Ashley Engstrom '22

Advisor: Liz Drake, Health and Exercise Science

Time: 4:00pm-5:00pm

The brain is arguably the most important organ in the human body. Therefore, in the case of concussions, there are protocols using a variety of techniques to diminish symptoms. This raises the question, 'In college athletes, does massage/trigger point release help diminish concussion symptoms?' The research team of two used four different databases to provide evidence in regards to this clinical question. Based on research that was found, it is evident that manual therapy does help with post concussion syndrome and concussion symptoms overall. However, there needs to be more research done on long-term effects of massage/trigger point release on concussion symptoms.

Military-Patriotic Education & the Civic Participation of Russian Youth

Riley Wentink '21

Advisor: Jillian Locke, Political Science

Time: 5:00pm-6:00pm

An essential part of any nation state's development is to instill a sense of patriotism within its citizenry and encourage civic participation; in the Russian Federation, this is done through military-patriotic education. In this paper, I argue that current programs of military-patriotic education for youth in Russia fall short of effectively encouraging civic participation. I analyze the following factors that influence the effectiveness of military-patriotic education: (1) An overreliance on the past, both in the formation of program structure and in curriculum content; (2) Little to no efforts to improve low rates of trust in public and government institutions; (3) the often vague and decentralized nature of patriotic education in Russia; (4) the socio-economic and geographic disparities that affect who can participate in patriotic youth organizations; (5) the general lack of youth programming in Russia; and (6) A cultural sense of patriotism that separates Russia "the country" from Russia "the state".

High School Biology Standards and Curriculum Needs to Include Instruction about the Biology of Race

Brie Wintz '21

Advisor: Lisa Ortmann, Elementary and Secondary Education

Time: 5:00pm-6:00pm

Despite scientific evidence that disproves race as a genetic factor, high school biology continues to omit the biology of race from academic standards and curriculum. By continuing to exclude these discussions, students are not provided accurate information; thus, implicit biases and racial stereotypes used to justify racism are perpetuated. As a society, race was constructed to classify humans based on shared physical traits from a common ancestor. From this classification, common misconceptions formed including that racial groups are genetically homogenous and different from each other as well as have an influence on one's ability such as athleticism or intelligence; however, current science suggests there is more genetic variation within the same racial groups than between different racial groups. Thus, there is no scientific consensus that supports the social construct of race. The issue in biology standards and curriculum is the time lag between updated scientific knowledge and lesson implementation which results in underprepared and uneducated students. In this presentation, I argue that an updated high school biology curriculum has the ability to challenge these misconceptions by incorporating accurate information about human genetic variation and explicit teaching about the biology of racial groups. I will present an original biology curriculum unit that includes a framework for the biology of skin color, the genetics of race, and the impact of the eugenics movement. In the future, this curricular unit and framework can be adapted into existing curriculum through district commitment towards up-to-date scientific information and challenging misconceptions about the biology of race.

[Childhood "Innocence": A Rhetorical Analysis of Anti Abortion Rhetoric in Latin America](#)

Grace Worwa '22

Advisor: Jillian Locke, Political Science

Time: 5:00pm-6:00pm

Around three-quarters of all abortions that take place in Latin America are unsafe, according to the World Health Organization. Current research shows that criminalizing abortion does not lead to fewer of them. Abortion bans just force women to resort to unsafe methods, yet growing conservative influence throughout Latin America over the past two decades has led to tighter restrictions on abortion. In this study, I analyze pro-life rhetoric used in three Latin American countries who have seen recent negative developments in abortion policy: Mexico, Ecuador, and Honduras. More specifically, I examine how conservative actors use concepts of childhood in their rhetoric in order to tighten restrictions on women's and girls' right to choose. This is a unique approach toward Latin American, pro-life rhetoric that has not yet appeared in existing research. Society views children as innocent and incapable, and as the property of adults, and we must recognize how pro-life rhetoric manipulates and distorts those perceptions in order to argue that an embryo should be treated as a full citizen, while women and girls should not.

Furthermore, we must recognize how pro-life rhetoric translates our perceptions of childhood into the mistreatment of pregnant adolescents and the infantilization of grown women. Anti abortion rhetoric in Latin America has been so successful partly because it manipulates social perceptions of children, and this study aims to better understand how that works so that we may effectively combat anti abortion messaging.

The Social Ethics of Ecocatastrophe in Protestant Denominations

Autumn Zierman '22

Advisor: Casey Elledge, Religion

Time: 4:00pm-5:00pm

Recent academic inquiries into eco-catastrophism have called increasing attention to its underlying religious assumptions. Eschatology, or religious beliefs about the 'last things' of the present world, comprised a perennial topic within Western religions for millennia, long before the awakening of modern ecological awareness. It has played an important role, often a subconscious one, in how responses to ecological catastrophe have been conceptualized and expressed, both in secular and religious circles. The purpose of this paper is to clarify the similarities and differences in theology and rhetoric all of which make up the social ethics of the Protestant groups most influential in the modern discussion of ecocatastrophe. I seek both to align and juxtapose the mainline and fundamentalist groups who speak out about this issue as a way to understand the existence of a large divide in religious discourse. Through rhetorical and structural analysis of the claims of each group I will demonstrate that within the outward differences lie key similarities in the beliefs and actions of involved groups. Moreover, the group beliefs are each influenced by the same ancient eschatological narratives found within the New Testament, in particular, the large divide in their respective discourses results from differing relationships between New Testament interpretation and scientific discoveries. Different methods of correlation between scriptural hermeneutics and scientific theories stand at the center of their divergent rhetoric.